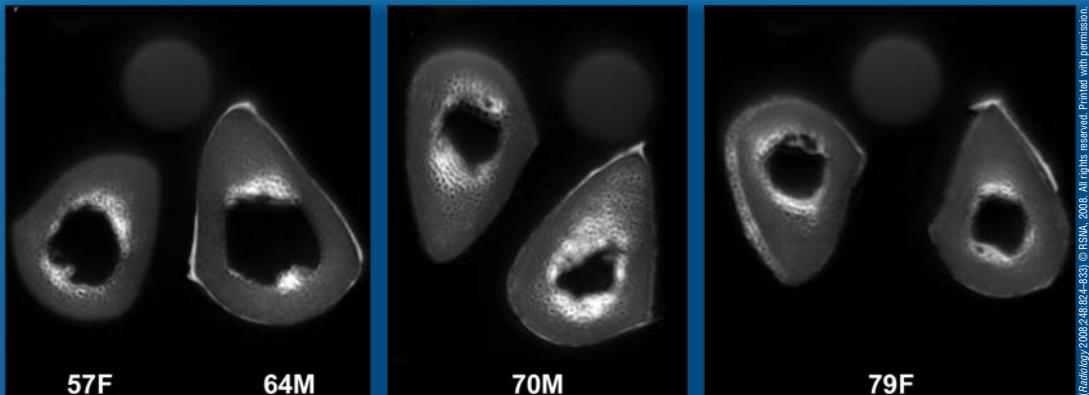


RSNA News



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MR Imaging Offers New Way of Evaluating Bone Loss

Also Inside:

- Combining Radiation, Surgery Increases Head and Neck Cancer Survival
- Healthy Living During Residency Urged
- R&E Foundation Seeks to Expand Power of Grants
- MOC Summit Tackles Radiation Dose

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RSNA News

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Biomarkers Alliance to Report on Projects

THE FDG PET/CT working group of the RSNA Quantitative Imaging Biomarkers Alliance (QIBA) plans to report the outcomes of some its projects at a special focus session during RSNA 2008.

QIBA, chaired by RSNA Science Advisor Daniel Sullivan, M.D., aims to help transform radiology from a qualitative to a more quantitative science by helping patients benefit from accelerated development and dissemination of new pharmacologic, biologic and interventional diagnosis and treatment approaches.

QIBA working groups are planning the adoption of hardware and software

standards to improve the accuracy and reproducibility of quantitative results from imaging biomarkers in multi-center clinical trials. QIBA is initially focusing on FDG PET/CT, dynamic contrast-enhanced MR imaging (DCE-MRI) and volumetric CT (vCT) to quantify longitudinally the effects of novel treatments for cancer.

Among the projects developed by the FDG PET/CT group, chaired by Richard Frank, M.D., was implementation of a novel calibration phantom. Projects with short timelines will be

reported at the RSNA 2008 session, with other projects initiated for delivery over the next three years. A report of FDG PET/CT group activities can be found at RSNA.org/research/qiba_announcements.cfm.

People interested in participating in QIBA projects can contact Dr. Sullivan at dsullivan@rsna.org or Richard Eaton of the Medical Imaging & Technology Alliance at ric_eaton@nema.org or 1-703-841-3248.



RSNA and ACR Collaborate to Assist Iraq

RSNA and the American College of Radiology (ACR) have developed a plan to assist radiologists in Iraq. The strategy includes providing electronic access to information found in the members-only areas of each organization's Web sites to the estimated 125 radiologists in Iraq and identifying resources both in Iraq and the U.S. that would help facilitate donations and coordinate travel between the countries. The plan also ensures continuation and possible expansion of ACR's observership program, which provides an opportunity for Iraqi radiologists to visit the U.S. and learn expanding techniques and technology. Those participating in the observership will be supported in being able to attend the RSNA annual meeting. Both RSNA and ACR have donated materials to Iraqi radiologists to better serve patients that have been affected by the ongoing war. For more information, please contact Fiona Miller at fmiller@rsna.org.

MAGNET SAFETY Tip of the Month

Use MR-compatible emergency equipment. Steel crash carts may crash if brought too close to an MR magnet.



American Association of Physicists in Medicine

IHE® Publishes Radiation Exposure Monitoring Profile

The Radiology Technical Committee of the Integrating the Healthcare Enterprise (IHE®) initiative has published a radiation exposure monitoring supplement to its technical framework, available for trial implementation. The new profile enables collecting and distributing information about estimated patient radiation exposure resulting from imaging procedures.

The Radiation Exposure Monitoring Integration Profile specifies communications between systems generating reports of irradiation events (acquisition modalities and workstations) and the systems that receive, store or process those reports (local dose information management systems and/or national/regional dose registers). The dataflow in the profile is intended to facilitate recording individual procedure dose information, collecting dose data related to specific patients and performing population analysis.

The profile addresses dose reporting for imaging procedures performed on CT and projection X-ray systems, including mammography. It does not currently address nuclear medicine procedures, radiotherapy or brachytherapy.

IHE has also published a mammography acquisition workflow supplement. Both documents are available for download at www.ihe.net/Technical_Framework/index.cfm#radiology. The profiles will be available for testing by participants in 2009 IHE Connectathons.



NIH Funds \$33 Million in Cutting-Edge Research Equipment

THE University of Wisconsin-Madison will purchase a unique integrated liquid chromatography, mass spectrometry and nuclear magnetic resonance system as part of 20 high-end instrumentation (HEI) grants, totaling \$33.3 million, funded recently by the National Center for Research Resources (NCRR).

The one-time grants support the purchase of equipment costing more than \$750,000. Also funded in this cycle were a hybrid PET/MR system at the University of Pittsburgh and an MR imager and MR spectroscopy scanner, equipped with an ultra-high magnetic field for in vivo studies of animal models, at the University of Minnesota.

NCRR is part of the National Institutes of Health (NIH). To qualify for an HEI award, institutions must identify three or more NIH-funded investigators whose research requires the requested instrument. More information on the HEI program and the 2008 awardees is available at www.ncrr.nih.gov/hei.

NIH also recently added 14 academic health centers in 11 states to the Clinical and Translational Science Award (CTSA) consortium led by NCRR. Creating a network of medical research institutions across the nation, the CTSA consortium aims to reduce the time it takes for laboratory discoveries to become treatments for patients and to engage communities in clinical

research efforts.

The 2008 CTSA grants support pediatric studies at 13 dedicated children's hospitals, expand research in genetics and genomics, enhance studies of behavioral immunology and infection risk and increase outreach into local communities. Funding for these new awards totals \$533 million over five years. When the program is fully implemented in 2012, approximately 60 CTAs will be connected with an annual budget of \$500 million. For more information about the CTSA program, visit www.ncrr.nih.gov/crcts.

FDA Warns of Medical Device Malfunctions Caused by CT

The U.S. Food and Drug Administration (FDA) is warning that X-rays used during CT examinations may cause some implanted and external electronic medical devices to malfunction.

While most patients with electronic medical devices undergo CT scans without any adverse consequences, the FDA notes that it has received a small number of reports in which CT scans may have interfered with electronic medical devices, including pacemakers, defibrillators, neurostimulators and implanted or externally worn drug infusion pumps. The FDA adds that the interference is potentially being

reported more frequently now due to increased utilization of CT, as well as the higher dose-rate capability of newer CT machines, an increase in the number of patients with implanted and externally worn electronic medical devices and better reporting systems.

A study published in the June 2007 issue of *Radiology* found that implantable cardiac rhythm management devices (ICRMDs) are sensitive to CT. The abstract for "Effects of CT Irradiation on Implantable Cardiac Rhythm Management

Devices" is available at radiology.rsna.org/cgi/content/abstract/243/3/766.

The FDA notes that no patient deaths have been reported from CT scanning of implanted or externally worn electronic medical devices. More detailed information regarding adverse events, as well as recommendations for reducing the potential risk, are available at www.fda.gov/cdrh/safety/071408-ctscanning.html.



MEDICAL IMAGING COMPANY NEWS

Dineen is GE Healthcare CEO

■ General Electric has announced the appointment of John Dineen as president and CEO of GE Healthcare, headquartered in London. Dineen succeeds Joseph Hogan, who has taken a position as CEO of ABB.

With GE for 22 years, Dineen has since 2005 been president and CEO of GE Transportation. Dineen previously served as vice-president and general manager of plastics at GE Advanced Materials and held various assignments in corporate finance. Dineen also served as general manager of GE Power Equipment; general manager of the meter and microwave and air conditioning businesses; manager of finance for GE Asia in Hong Kong and president of GE Plastics-Pacific.



John Dineen

Wolters Kluwer Health, Amisys Enter Partnership

■ Wolters Kluwer Health, of Conshohocken, Pa., and Amisys, of Salt Lake City, have announced a book and eBook agreement that will combine the Amisys brand with the Lippincott Williams & Wilkins brand. The forthcoming product line, released over the next eight years, will include more than 80 references, including Amisys' popular *Diagnostic and Surgical Imaging Anatomy* series and the new *Expert Differential Diagnoses (ExpertDDx™)* series.

NCI Program Deadline is October 15

The Center for Cancer Research, part of the National Cancer Institute, seeks applicants for its Clinical Investigator Development Program.

The goal of the Clinical Investigator Development Program is to assist board-eligible/board-certified translational researchers in transitioning from mentored positions to independent investigators in either laboratory-based or patient-oriented research, making

them highly competitive for tenure-track appointments in academia or comparable positions in government and industry. Potential areas of focus include medical oncology, pediatric hematology-oncology, radiation oncology, surgical oncology, surgical pathology or related specialties.

Successful applicants will be awarded a 3-year appointment, competitive salary, dedicated laboratory space

and budget, a full-time research support person, travel and training funds and access to an extensive infrastructure including research nursing, data-management support, animal facilities, core services and advanced technologies.

The deadline for applications is Oct. 15. For more information on the program and eligibility requirements, go to ccr.cancer.gov/careers/clinical_programs_invest.asp.

PEOPLE IN THE NEWS

Vydareny Named to ABR Office

The American Board of Radiology has chosen **Kay H. Vydareny, M.D.**, as its new associate executive director for diagnostic radiology and subspecialties. Dr. Vydareny was elected as an ABR trustee in 1999, serving until 2007. She currently serves as a professor in the Department of Radiology at Emory University in Atlanta.



Kay H. Vydareny, M.D.

SIIM Elects Directors

The Society for Imaging Informatics in Medicine (SIIM) has announced its 2008-2009 board directors:

- **Daniel L. Rubin, M.D., M.S.**, Stanford University, California
- **Eliot L. Siegel, M.D.**, University of Maryland/VA Maryland Health Care Center, Baltimore
- **Carter H. Yates**, Barco, Kortrijk, Belgium

Bradley J. Erickson, M.D., Ph.D., of the Mayo Clinic, Rochester, Minn., has begun a two-year term as chair of the SIIM board.

Clarification

Information was omitted from an announcement in the August 2008 issue of *RSNA News* about Robert J. Min, M.D., newly appointed radiologist-in-chief and chair of radiology at New York-Presbyterian Hospital/Weill Cornell Medical Center in New York. Dr. Min has been with New York-Presbyterian/Weill Cornell since 1999.

Radiologist is Canadian Medical Association President

The Canadian Medical Association has named **Robert Ouellet, M.D.**, a radiologist from Laval, Quebec, as its new president.

Dr. Ouellet helped launch Canada's first private axial tomography clinic in 1987 and created Laval's first private MR imaging clinic. Director of five diagnostic radiology clinics in Laval and Terrebonne, Quebec, Dr. Ouellet has served as an imagery consultant on the Laval integrated network information system and as an adviser to the Canada Health Infoway committee.



Anthony L. Zietman, M.D.

ASTRO Names New Officers

The American Society for Therapeutic Radiology and Oncology (ASTRO) has announced new officers for 2008-2009:

- **Anthony L. Zietman, M.D.**, Massachusetts General Hospital, Boston, president-elect
- **Bruce Haffty, M.D.**, Robert Wood Johnson University Hospital, New Brunswick, N.J., education council vice-chair
- **C. Leland Rogers**, Gamma West Cancer Services, Salt Lake City, government relations council vice-chair

Lukin Receives ASNR Medal

The American Society of Neuroradiology (ASNR) recently awarded **Robert Lukin, M.D.**, the ASNR gold medal. Dr. Lukin is a professor of radiology at the University of Cincinnati, where he served as chair of the Department of Radiology for 15 years.

Dr. Lukin served for 14 years as part of the ASNR executive committee responsible for managing critical issues related to certification. Dr. Lukin was also an active member of the American Board of Radiology for 30 years, serving as a board examiner.



Robert Ouellet, M.D.

**Cynthia S. Sherry, M.D.**

Radiologist is ACPE President

The American College of Physician Executives (ACPE) has elected as its president **Cynthia S. Sherry, M.D.**, chair of radiology at Presbyterian Hospital of Dallas and president of the Texas Radiological Society. ACPE supports

physicians in acquiring the leadership skills and credentials necessary to effectively lead at all levels and sectors of the healthcare industry.

Thrall Named ACR Chair

James H. Thrall, M.D., has been named chair of the American College of Radiology (ACR) Board of Chancellors.

Thrall, who received the RSNA gold medal at RSNA 2007, is radiologist-in-chief at Massachusetts General Hospital and a professor of radiology at Harvard Medical Center in Boston.

**James H. Thrall, M.D.****James P. Borgstede, M.D.**

Former ACR board chair **James P. Borgstede, M.D.**, was recently elected treasurer of the International Society of Radiology. Dr. Borgstede is vice-chair of the Department of Radiology at the University of Colorado.

RSNA News

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MY TURN

The R&E Silver Anniversary Campaign: It's Time for a Final Burst

LIKE many of you, I spent some time last month watching the 2008 Beijing Olympics and marveling at how the athletes, now matter how grueling the race, always seemed to find a final burst of energy to propel them over the finish line.

Such a metaphor seems fitting as I write about the RSNA Research & Education (R&E) Foundation Silver Anniversary Campaign, with a goal to raise \$15 million by 2009. As chair of the R&E Public Relations Committee, I am excited to report that we have raised \$12 million—an impressive achievement since the campaign was launched just four years ago.

I'm also here to ask that we do more. While individual member contributions are up this year—well over \$1 million—sadly only about 10 percent

of those reading this column have participated in such giving. It's time for one last burst to get us over the finish line.

Just as athletes propel themselves with medal dreams, we have our own motivation to contribute to the R&E goal. First, there is the vision of the RSNA leadership who first created

My Turn ONE RADIOLOGIST'S VIEW

the Foundation some 25 years ago, recognizing the need for more radiology research and acting to ensure that our specialty could compete with others that had more established funding sources.

Then there is the proven impact of donations already made. Over the years, more than 600 recipients at

**Bruce L. McClellan, M.D.**

nearly 100 institutions have received R&E support that has jump started the careers of academic radiologists and led to myriad innovations that affect our practice and our patients every day.

Proud as we are of our progress so far, let's give our efforts another boost. Together we can celebrate a quarter century of successful

funding of research and education in our specialty.

Bruce L. McClellan, M.D., is a professor of diagnostic radiology at Yale University School of Medicine and an attending at Yale New Haven Hospital. He is also editor of RSNA News.

A feature article on efforts to further increase the impact of R&E Foundation support appears on Page 14.

Issue of Pretreatment to Prevent Contrast-Induced Kidney Damage Draws Opinion

An article detailing conclusions from a meta-analysis of studies into drugs that could prevent contrast-induced nephropathy ("Inexpensive Medication May Prevent Contrast-Induced Kidney Damage," RSNA News, July 2008) raised questions about how renal function is assessed and the type of patients in question.

TO THE EDITOR:

I read with interest and some confusion the feature article. All the articles in the meta-analysis cited (*Annals of Internal Medicine* 2008;148:284-294) showing a renoprotective effect of N-acetylcysteine used serum creatinine (a surrogate measure for renal function) as an endpoint. It has recently been suspected that N-acetylcysteine interferes with the metabolism of creatine to creatinine and artificially lowers the serum creatinine without protecting against a contrast agent-induced decrease in glomerular filtration rate (GFR). A not-so-recent article, "IV N-Acetylcysteine and Emergency CT: Use of Serum Creatinine and Cystatin C as Markers of Radiocontrast Nephrotoxicity" (*American Journal of Roentgenology [AJR]* 2007;189:687-692), examined this paradox. Using cystatin C, also a surrogate marker of renal function but a more accurate reflection of GFR, there was no protective effect of N-acetylcysteine related to contrast agent-induced nephropathy (CIN). The *AJR* authors conclude, "On the basis of serum creatinine concentration only, IV administration of N-acetylcysteine appears protective against the nephrotoxicity of contrast medium. No effect is found when serum cystatin C concentration is used to assess renal function. The effect of N-acetylcysteine on serum creatinine level remains unclear and may not be related to a renoprotective action."

I agree with Dr. Bettmann's comments in the *RSNA News* article that most studies dealing with pharmacologic renal protection of CIN are in the cardiology literature. It is likely that most of these patients are being treated for acute coronary syndrome and may have had some element of pump failure and substantial hypotension contributing to renal failure as well as the contrast load. The average outpatient CT patient is much different. Before general recommendations are made to change the way radiologists administer IV contrast, we have an obligation to ensure that the science behind the recommendation is sound.

**JOHN S. TO, M.D.
KINGSFORD, MICH.**

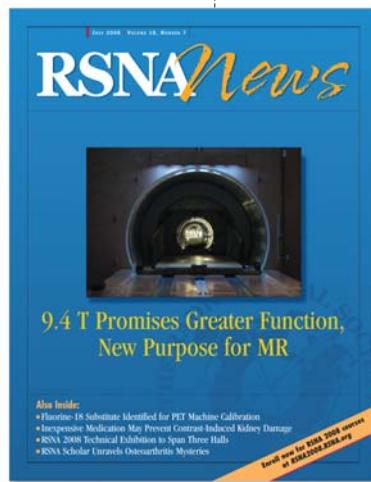
RESPONSE:

We thank Dr. To for his comments. We read with some interest and acknowledge the findings of Dr. Poletti and colleagues with respect to cystatin C and agree with their conclusions. We disagree that the effect of N-acetylcysteine on serum creatinine level remains unclear but acknowledge that its effect on glomerular filtration rate remains unclear, creatinine being a surrogate marker for renal function at best. Further study in this area is warranted.

We concur with Dr. Bettmann's comments that our meta-analysis addressed cardiac patients receiving intra-arterial contrast for angiograms and did not address studies using IV contrast for CT studies. Dr. Poletti and colleagues did study patients receiving IV contrast for emergent CT studies but more studies will be needed in the area of outpatient CT before we draw conclusions or make recommendations to outpatients undergoing CT.

We disagree with Dr. To's comments regarding most cardiology patients having pump failure. Of the 1.5 million coronary angiograms performed in the U.S. every year, over two-thirds are in outpatients, who are largely stable. Moreover, in our experience, many patients presenting for emergency CT studies have a degree of hypotension and circulatory collapse.

**AINE M. KELLY, M.D., AND
PAUL CRONIN, M.D., M.S.
DEPARTMENT OF RADIOLOGY,
DIVISION OF CARDIOTHORACIC IMAGING,
UNIVERSITY OF MICHIGAN**



MR Imaging Offers New Way of Evaluating Bone Loss

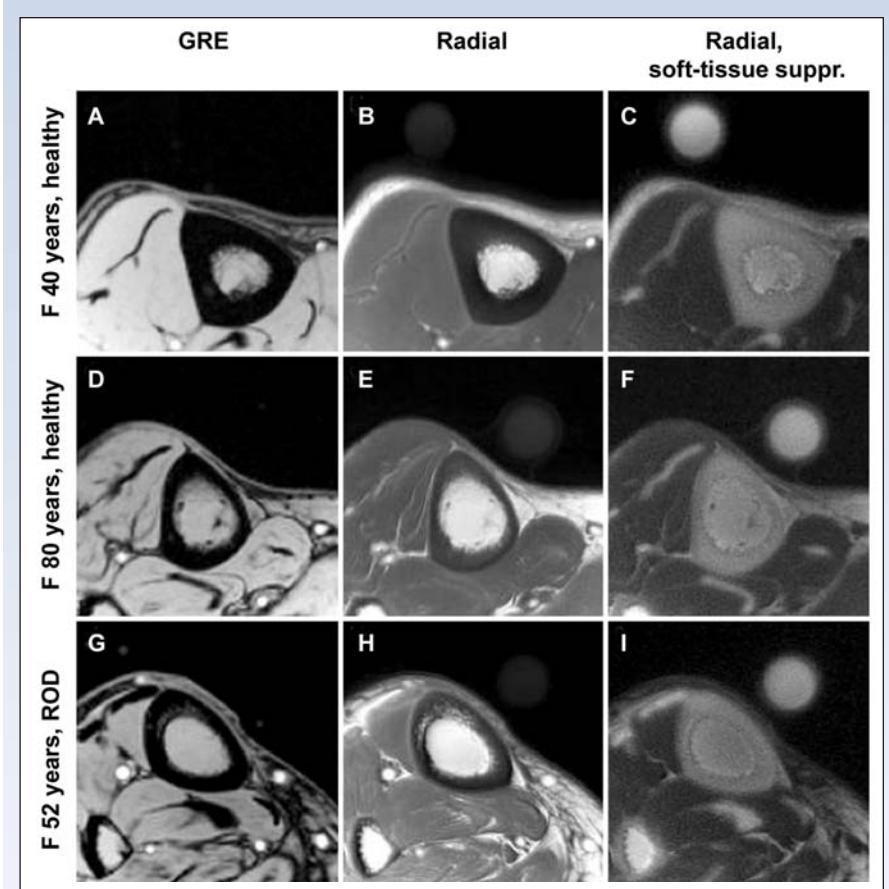
A NEW STUDY from the University of Pennsylvania demonstrates the ability of ultrashort echo time (UTE) MR imaging to quantify bone water, paving the way for a new, non-invasive approach to assessing bone loss.

Researcher Felix W. Wehrli, Ph.D., a professor of radiologic science, biochemistry and biophysics, said the team utilized customized radial pulse sequences to measure the volume of bone water contained in the pores of the Haversian system. The team was able to evaluate bone quality by looking at the cortical bones in the tibias of pre- and postmenopausal women and patients with end-stage kidney disease.

The study appears in the September issue of *Radiology*.

"It's a new idea because bone water, in all likelihood, is a very good surrogate for porosity," said Dr. Wehrli. "We can get information indirectly because the pores don't contain air, they contain water in some form. By quantifying the fraction of water in the bone, we get an indirect measure of porosity."

Previous studies have shown that increased bone porosity contributes significantly to the age-related decrease of bone mechanical strength. "What these investigators did in a clever way was say, 'Even though we can't see the tiny little pores, we can add up the total amount of water in the cortical bone and that will give us an indication of the space between them, and that will be a new way to look at strength,'" said David A. Rubin, M.D., an associate professor of radiology at the Mallinckrodt Institute of Radiology, Washington University in St. Louis. Dr. Rubin chairs the musculoskeletal subcommittee of the RSNA Scientific Program Committee.



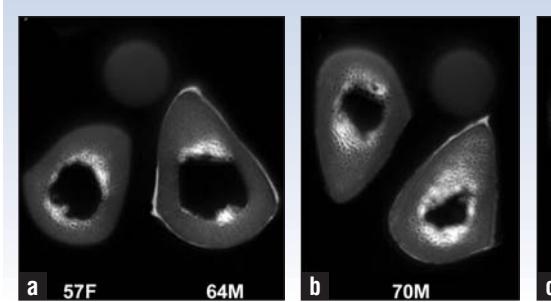
Representative transverse MR images of tibial midshaft from each of the three groups studied, with and without soft-tissue signal suppression. (A, D, G) Gradient-echo (GRE) images. (B, E, H) Radial ultrashort echo-time images. (C, F, I) Radial ultrashort echo-time images with soft-tissue suppression (suppr.). Circular structure is the reference sample with T2 at approximately 300 μ sec which, similar to bone, is visible only on radial MR images. Images obtained in 40-year-old healthy subject (top row) display noticeably thicker cortex than in 80-year-old subject (middle row) or in 52-year-old patient with renal osteodystrophy (ROD) (bottom row). Images in patient with ROD display effect of increased cortical bone porosity. (*Radiology* 2008;248:824-833) © RSNA, 2008. All rights reserved. Printed with permission.

Denser Cortical Bone a Challenge

The makeup of the denser cortical bone posed a challenge for the team as they worked to utilize the UTE MR signals, said Dr. Wehrli. "The cortical bone is solid bone, versus spongy bone immersed in the marrow," he explained. "With virtually all pulse sequences in MR imaging, cortical bone appears black—there's no signal

in it because bone water has properties that are distinctly different from the water in soft tissues."

The team eventually perfected a methodology that Dr. Wehrli said he believes is reproducible. "It requires specialized pulse sequences that allow detection a very short time after the signal was excited," he said. "That is the crux. We have not invented this



ON THE COVER

(a–c) Transverse ultrashort echo-time MR images of human specimens of the tibial midshaft from four donors. Specimens of left and right tibia are shown, except in (a) where the specimens represent two different donors (57-year-old female specimen and 64-year-old male specimen). Circular structure superior to specimens is from reference sample. Imaging time was 4 minutes and voxel size was 0.2 x 0.2 x 5 mm.

(Radiology 2008;248:824–833) © RSNA, 2008. All rights reserved. Printed with permission.

technique, we have improved it. I think we were the first to develop a quantitative method with the idea of measuring the pore volume fraction."

Bone water was measured at the tibial mid-shaft in healthy pre- and postmenopausal women between 34 and 69 years old and in patients with renal osteodystrophy on maintenance hemodialysis. Results among patient groups were clearly different and correlated strongly with their medical risk for bone weakness, said Dr. Wehrli.

Comparing the patient groups to a healthy reference group, researchers found that postmenopausal women had 65 percent more water than did younger women. Bone water amounts in patients with renal osteodystrophy exceeded those in postmenopausal women by 43 percent and premenopausal women by 135 percent.

Peripheral quantitative CT and dual energy X-ray absorptiometry tests showed bone mineral density decreased relative to bone water increase; however, bone density differences among the groups were much smaller than bone water differences.

Dr. Wehrli said researchers were startled by the clarity of the UTE images and the obvious differences among patient groups. "The parameter we measured was a much better differentiator of these groups than bone density, which is what people ordinarily measure," he said. "We did not really know how sensitive the method could be. That was a very pleasant surprise."

Dr. Rubin noted: "It's an interesting technique that shows us detail in

structures we knew about but couldn't see. What's interesting is the magnitude of difference in the subject groups was much higher with their method of measuring water than it was with the method of measuring the bone itself, implying maybe this is a technique that will be more sensitive to smaller changes or subtle differences in cortical bone."

Future Studies to Focus on Femoral Neck Fractures

The University of Pennsylvania team is quick to admit the limitations of

By quantifying the fraction of water in the bone, we get an indirect measure of porosity.

Felix W. Wehrli, Ph.D.

the small study, which included just five premenopausal and five postmenopausal women and six patients on dialysis. "We have to be a little humble here because the number of subjects is very small," said Dr. Wehrli. "This definitely requires more work on a larger cohort of patients."

While data in this trial were gathered from patients' tibias, the group wants to concentrate in the future on a bone that poses a greater threat to patients at risk for osteoporosis—the femoral neck, a common fracture site involving cortical bone. "The femoral neck is the most common traumatic fracture site for this population," said Dr. Wehrli. "A significant percentage of older women and men with hip fracture actually die within a year post-fracture. Obviously, one goal would be to identify these people who are at risk of fracturing early, so that appropriate interventions can be devised."

The team is also interested in learning more about prevention of bone weakness. Said Dr. Wehrli: "Another

interesting question is 'Is porosity modifiable?' Is it reversible, for example, using drug intervention such as treatment with bisphosphonates or parathyroid hormone? The ability to quantify the effectiveness of drug therapies requires precision of measurement and repeatability—ultimately you want to be able to bring these patients back after six, 12 or 24 months to determine whether an intervention has been effective."

The study results are exciting because they provide a unique view of a part of the body scientists haven't previously been able to examine, said Dr. Rubin. "We're able to accurately measure, something we've not been able to measure, inside the body," he said. "And it's doable on a clinical MR scanner with this new ultrashort TE. It shows profound differences among groups as we would predict and higher differences than we can measure utilizing standard methods for measuring the bone integrity." □

Learn More

The abstract for "In Vivo Quantification of Cortical Bone Water by Ultrashort Echo time MRI" is available online at radiology.rsna.org/cgi/content/abstract/248/3/824.

Osteoporosis at RSNA 2008

"Osteoporosis: Clinical and Imaging Features," an RSNA 2008 refresher course, looks at the



pathophysiology and management of osteoporosis. Also addressed will be interpretation of dual X-ray absorptiometry (DEXA) scans and quantitative CT. Registration for this and all RSNA 2008 courses continues at RSNA.org/register.

Combining Radiation, Surgery Increases Head and Neck Cancer Survival

ALARGE-SCALE study showing improved survival rates for patients with node-positive head or neck cancer who undergo post-surgical radiation therapy could have a particularly significant impact on patients classified as N1, researchers said.

"Radiation therapy increased the likelihood of survival by 22 percent in the N1 group. That is

the big impact here," said Johnny Kao, M.D., the study's lead author and an assistant professor of radiation oncology at the Mount Sinai School of Medicine in New York. "Maybe historically we would

think many of these patients wouldn't need radiation, but this study provides evidence that radiation should be considered after surgery for most head and neck cancer patients with positive lymph nodes. I'd use this information to consider radiation more strongly for those with N1 disease."

Radiation therapy increased survival by 22 percent in the N1 group. That is the big impact here.

Johnny Kao, M.D.

The study was published in the June 2008 issue of the *International Journal of Radiation Oncology * Biology * Physics*. Researchers analyzed 5,297 patients at least 21 years old, with a median age of 59, all of whom were diagnosed with node-positive head and neck squamous cell carcinoma and were treated with surgery

with or without adjuvant radiation therapy. The patients were all treated between 1998 and 2001.

Few Studies Have Examined Survival

While radiation therapy is frequently used in combination with surgery to treat

some head and neck cancers—as data have shown radiation therapy improves locoregional control—very few studies have been conducted to determine the impact on survival, researchers said.

"We were surprised that, for a treatment used so widely, there was not much research into survival rates,"



Johnny Kao, M.D.
Mount Sinai School of Medicine

said Dr. Kao. "The fact that radiation is increasing survival for these people was always suspected, but not really proven. This study was a way to get an answer to the question, 'Is giving radiation—a very complex treatment—a worthwhile endeavor?'"

To answer that question, Dr. Kao and colleagues turned to the Surveil-

PET/CT Planning Benefits Patients with Head and Neck Cancer

Another study published earlier this year found that using positron emission tomography (PET)/CT for radiation therapy treatment planning in head and neck carcinoma patients provides for excellent local and regional disease control when compared to CT alone.

CT has historically been the choice for staging and radiation therapy treatment planning for head and neck squamous cell carcinomas, however PET has demonstrated advantages

over CT and other imaging modalities in detecting primary tumors, involved lymph nodes and distant metastatic disease not clearly otherwise identified. The disadvantages of using PET alone, such as poor correlation to precise anatomic structures, are significantly reduced when PET and CT are combined, the study indicated.

The study evaluated clinical outcomes including overall survival, disease-free survival and the incidence of recurrence of

patients receiving PET/CT-guided radiation therapy and the correlation of the clinical outcomes to the maximum standard uptake value obtained on the PET scan.

Between December 2002 and August 2006, 42 patients with a median age of 55 were given PET/CT imaging as part of their radiation therapy planning. Overall survival was 82.8 percent at two years and 74.1 percent at three years. Disease-free survival for the patients was 71 percent and 66.9 percent at

two and three years respectively, with a cumulative incidence of recurrence of 18.7 percent.

The abstract for "Clinical Outcomes of Patients Receiving Integrated PET/CT-Guided Radiotherapy for Head and Neck Carcinoma," published in the March 1, 2008, issue of the *International Journal for Radiation Oncology*Biology*Physics*, is available at [www.redjournal.org/article/S0360-3016\(07\)04464-1/abstract](http://www.redjournal.org/article/S0360-3016(07)04464-1/abstract).

lance, Epidemiology, and End Results (SEER) database. Collecting information from 17 cancer registries covering 26 percent of the population in the U.S., SEER is said to be representative of the country.

While the database originally included more than 40,000 patients, most were excluded from the study for a variety of reasons. Those rejected included patients with nasopharyngeal cancer, because the primary locoregional treatment is radiation rather than surgery, and those with salivary gland tumors, because the majority of these are likely nodal metastases from squamous cell carcinoma of the skin. Others excluded were patients with metastatic disease of unknown stage, *in situ* carcinoma, no pathologic confirmation, preoperative or intraoperative radiotherapy and unknown administration of radiotherapy.

Patients were considered to have had radiotherapy if they received external beam radiation, brachytherapy or both, said researchers. Those patients who received radioisotopes only were not considered to have received adjuvant radiation.

"Once we had the database narrowed down, we looked at the different subgroups, N1 to N3, by how advanced their lymph nodes were," Dr. Kao said. "In all of these groups, radiation did increase survival."

Radiation Typically Recommended for only N2 and N3 Patients

Patients were surveyed approximately 4.4 years after treatment. Researchers found that adding radiation to surgery improved the patients' survival rate by about 25 percent in all nodal stages, including N1 stage patients. Radiation is more often recommended only for N2 and N3 stage patients.

"I think the impact on decision making will be on the N1 category of patients," said Shiv Khandelwal, M.D., an associate professor in the Department of Radiation Oncology at the University of Virginia in Charlottesville,

who was not involved in the study. "We can't tell by looking at this database why some patients got radiation and some didn't, so we could be missing something that could affect the outcomes here. Either way, there are some who tend to avoid doing radiation in N1 cases and this study tells us we need to look harder at radiating those patients."

Those with N1 nodes constitute a very small percentage of patients, Dr. Khandelwal noted. "That's why it's difficult to do a controlled, complete study," he said.

"This is an interesting one and the authors justifiably point out some of its weaknesses. However, none of the studies out there had shown that we improve survival rates with radiation, until this one. I think it's an important study."

Drs. Kao and Khandelwal said the side effects of treating head and neck cancer with radiation, particularly when using intensity-modulated radiation therapy (IMRT), have been greatly reduced over the years. However, the side effects can still be significant in some cases—even with this study, radiation oncologists will have to weigh the

Learn More

- The abstract for "Adjuvant Radiotherapy and Survival for Patients With Node-Positive Head and Neck Cancer: An Analysis by Primary Site and Nodal Stage," published in the June 1, 2008, issue of the *International Journal for Radiation Oncology*Biology*Physics*, is available at [www.redjournal.org/article/S0360-3016\(07\)04444-6/abstract](http://www.redjournal.org/article/S0360-3016(07)04444-6/abstract).

BOOST at RSNA 2008 Features Head and Neck Cancer

The Bolstering Oncoradiologic and Oncoradiotherapeutic Skills for Tomorrow (BOOST) program will include a track on head and neck cancer at RSNA 2008. Each BOOST track includes a refresher course on anatomy, natural history and contouring, as well as scientific papers and case-based reviews. Other topics this year are lung, central nervous system, gastrointestinal, prostate and gynecologic. Registration for BOOST and all other RSNA 2008 courses continues at RSNA.org/register.

Effect of Adjuvant Radiation on 5-year Overall Survival (by subsite and N stage)

N STAGE	NO RADIATION THERAPY 5-year overall survival (%)	RADIATION THERAPY 5-year overall survival (%)
Oral cavity (excluding lip)		
N1	36	38.7
N2a	28	34.7
N2b, N2c, N3	13.3	26.5
Oropharynx		
N1	65	67.9
N2a	44.6	55.3
N2b, N2c, N3	30.7	56.9
Hypopharynx		
N1	31.5	40
N2a	17.9	46.3
N2b, N2c, N3	20.8	32.1
Larynx		
N1	41.9	53.3
N2a	16.4	39.7
N2b, N2c, N3	17.7	31

Reprinted from the *International Journal of Radiation Oncology * Biology * Physics* 71:362-370, Kao, et. al., "Adjuvant Radiotherapy and Survival for Patients With Node-Positive Head and Neck Cancer: An Analysis by Primary Site and Nodal Stage," © 2008, with permission from Elsevier.

risks, researchers said.

Approximately 6 percent of all U.S. cancers are classified as head and neck, according to the SEER database. About 85 percent of these patients receive radiation therapy, said Dr. Kao. While this study is not definitive, by any means, it does answer the question it set out to answer, he said.

"It shows that, in a very large population of patients, radiation can improve survival," Dr. Kao said. "What is reassuring is that we aren't just giving it, but it is helping people." □



RSNA 2008
Personal Learning in the Global Community

Healthy Living During Residency Urged

WHILE it might seem implied that doctors-in-training would maintain healthy habits, some say that is frequently not the case. The instructor of an RSNA 2008 course on healthful living for residents said nothing short of a change in culture is needed to resolve a growing problem.

"I don't expect seminar participants to go back and demand a treadmill be placed in the reading room, although that would be nice," said Jannette Collins, M.D., M.Ed., recipient of the 2005 RSNA Outstanding Educator award. "I do expect them to become more informed."

Living Healthy During Residency (RC202) will be offered Monday, December 1, from 8:30 to 10 a.m. Leading the course with Dr. Collins are Robert F. Kushner, M.D., M.S., and J. Louis Hinshaw, M.D.

Dr. Collins, a professor in the Departments of Radiology and Medicine at the University of Wisconsin Hospital and Clinics in Madison, is passionate about this subject. "We are doctors—we should know and follow the government recommendations for good health," said Dr. Collins, whose study, "Indicators, Trends and Recommendations for Living a Longer and Healthier Life" was published in the November 2007 issue of the *Journal of the American College of Radiology (JACR)*.

"A lot of people in and out of the medical field think they know the guidelines, but they may not," she said.

In the *JACR* article, Dr. Collins wrote of the need for research into how radiology training programs influence trainees' compliance with health recommendations. "Radiology faculty



Robert F. Kushner, M.D., M.S.
Northwestern University



Jannette Collins, M.D., M.Ed.
University of Wisconsin



J. Louis Hinshaw, M.D.
University of Wisconsin

members serve as role models to residents and medical students, potentially influencing the choices trainees make regarding their health," she wrote. Dr. Collins will present "Lifelong Learning in the 21st Century and Beyond" during the RSNA 2008 opening session.

Work Hours, Environment Questioned

Dr. Collins specifically questions resident work hours and program flexibility. An increasing number of medical errors led to a federal cap on resident work hours at 80 hours a week, but that is still double the number of hours for office and factory workers, she pointed out.

Then there is the food served at department functions, she said. "Is there a bowl of chocolate at workstations?" she asked. "Are residents getting served pizza during Grand Rounds? How do you say no to that, when you are so pressed for time?"

Dr. Collins said when she talks to residents about why they don't get enough physical activity, they tell her

they don't have the time. "Is that true or is it how they're scheduling their time?" she asked. "Are we pressuring residents to the point where they can't make the time to take care of their own health, or is it self-pressure? Residents are very self-motivated people."

The solution, said a highly respected wellness expert, is resident program directors championing the healthy living cause and showing residents exactly what to do to achieve better habits.

Dr. Kushner, a professor of medicine at the Northwestern University Feinberg School of Medicine in Chicago and medical director of the Center for Lifestyle Medicine, said residents appreciate the importance of practicing better self-care. But, in an extension from their medical school days, they still leave that self-care behind, he said.

Sleep deprivation, said Dr. Kushner, is the greatest area for concern. Also vital are getting exercise and improving ergonomics, along with eating healthy,

Are we pressuring residents to the point where they can't make the time to take care of their own health, or is it self-pressure?

Jannette Collins, M.D., M.Ed.

balanced meals throughout the day while being mindful of their on-call priorities, he said.

"We want them to pause and think about improvements in their productivity, because this career is for a lifetime," he said.

Northwestern Course Encourages Change

Dr. Kushner teaches a six-week behavior modification course called "Healthy Living" to second year medical students at Northwestern. He offers some examples of opportunities for improvement—a student chronically late for class can modify his behavior to arrive on time, while another can work to add fruits and vegetables to an unhealthy diet. "These life lessons can be a great struggle for some students," he said.

The Centers for Disease Control and Prevention issued a report in July 2008 showing one out of every four adults in the U.S. is obese. To date, Dr. Kushner said he is not seeing obesity in medical students at Northwestern. He added, however, that the extra pounds creep up later in life—the time to develop good habits is now.

Some wonder, were the work environment adjusted, would residents take advantage of that time to improve their own health? Dr. Collins suggested allowing residents to leave work early once or twice a week to enable them to spend some time with their families or exercise. She acknowledges that such a change may create more work for faculty members. "This is a barrier to change," she said. "It's tough for residents and faculty members to balance personal and professional needs."

Dr. Hinshaw, an assistant professor of radiology at the University of Wisconsin School of Medicine and Public Health, said that while he follows an exercise regimen, not everything he does is healthy. "Some things go by the wayside, like sleep," he said.

Dr. Hinshaw is married to a physician and they have two young children. He gets up early to exercise. "It's a challenge because it's difficult to find

the time," he said, adding that exercising at a consistent hour makes it a little easier.

Residents' Schedules Offering More Flexibility

He noted that many of his residents who don't maintain healthy habits assume they'll have time to make up for it later, saying it's more important now to learn about radiology. He said he agrees in part but added, "It's all about making choices with the time you have."

Limiting the number of hours a resident can work provides today's residents with more time to make healthier choices, said Dr. Hinshaw. "When I was an intern, there were times that I worked 100-120 hours a week," he said. "Reducing that to 80 hours means a lot more available time. And, with one day off per week required, residents can take that day to focus on improving their own health and fulfilling their personal needs." It's all about motivation and discipline, he said, noting, "You can watch TV while eating a bowl of chips and dip or you can put on a pair of gym shoes and go exercise."

In his role as chair of the selection committee for the Department of Radiology at his institution, Dr. Hinshaw said he tells incoming residents they need to maintain their health and pursue other interests besides radiology.

Residents and Fellows the Focus of New RSNA Publication

R/F Buzz, a bi-monthly e-communication designed exclusively for residents and fellows, launched in mid-July. *R/F Buzz* includes news, event announcements, synopses of journal articles and links to the latest tools on *RSNA.org*, chosen with the needs of RSNA's members-in-training in mind. To view the latest issue of *R/F Buzz*, go to *RSNA.org/RF-Buzz/index.cfm*. The next issue of *R/F Buzz* will be e-mailed in September.

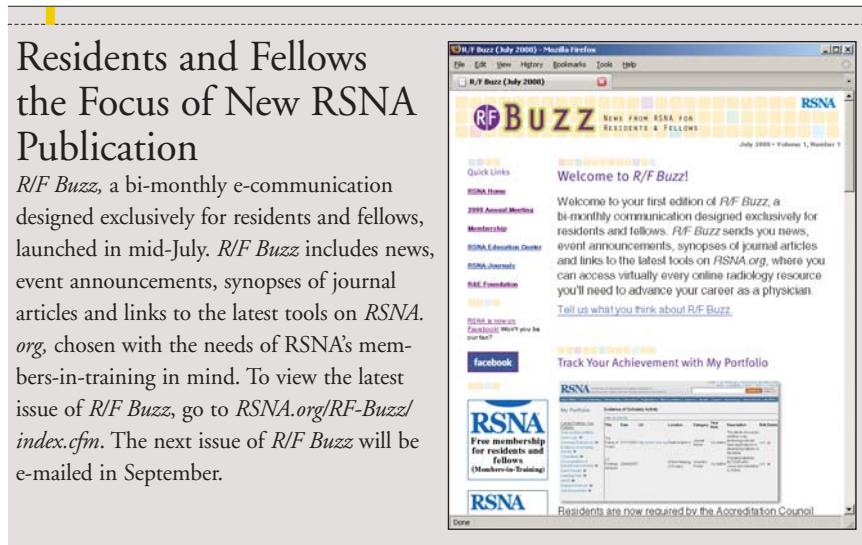
His goal with the RSNA 2008 session is to encourage participants to think about making changes, he said.

Dr. Collins said participants will come away with knowledge of federal guidelines for good health including diet and nutrition, physical activity, blood pressure, cholesterol and body mass index. They'll also discuss how radiology programs are complying with the national guidelines and talk about workplace environmental restrictions and potential modifications, she said.

Said Dr. Kushner, "We need residency program directors to make balance in life and self-care a priority." □

Learn More

- The full text of "Indicators, Trends and Recommendations for Living a Longer and Healthier Life," published in the November 2007 issue of the *Journal of the American College of Radiology*, can be accessed at [http://www.jacr.org/article/S1546-1440\(07\)00324-9/fulltext](http://www.jacr.org/article/S1546-1440(07)00324-9/fulltext).



MOC Summit Tackles Radiation Dose

IN LIGHT OF increasing demand to define standards for radiation dose regulation, the American Board of Radiology (ABR) Maintenance of Certification (MOC) Summit in Chicago demonstrated that it is radiologic professionals themselves who are being proactive.

"I am pleased to see how deeply our profession is committed to the safe and optimal use of radiation," said G. Donald Frey, Ph.D., a professor of radiology at the Medical University of South Carolina in Charleston and an ABR trustee. Presenters at the Aug. 9 summit addressed dose reduction concerns for both diagnostic and therapeutic procedures and encouraged cooperation with the Image Gently pediatric radiation dose campaign and participation in the National Radiology Data Registry (NRDR). More than 55 participants, including radiologists, radiation oncologists and medical physicists representing 28 professional radiology societies, then began laying the groundwork for practice quality improvement projects.

ABR is committed to making patient safety and radiation safety the main focus of its practice quality improvement (PQI) initiatives, said Dr. Frey. "The ABR acknowledges that the specialty societies possess the content expertise to develop PQI initiatives," he said. "The safe use of radiation is a defining characteristic distinguishing diagnostic radiology, radiation oncology and radiologic physics from other specialties."

"Maintenance of certification is the best tool to protect our profession right now," said keynote speaker Kevin



James A. Brink, M.D.

Department of Diagnostic Radiology,
Yale University School of Medicine



N. Reed Dunnick, M.D.

RSNA Board Liaison for Science and
ABR president

Weiss, M.D., CEO of the American Board of Medical Specialties. "We need to change the mindset so that the board exam is not considered an exit exam from a residency, but an entrance exam into a lifetime of professional development."

Medical radiation has increased by about 600 percent since the 1990s and now contributes almost half of the population's radiation exposure, including naturally occurring sources, said

James A. Brink, M.D., chair of the Department of Diagnostic Radiology at Yale University School of Medicine. "Data from the National Council on Radiation Protection & Measurements suggests

Nobody knows our business better than we do. We need to carry the flag for quality.

N. Reed Dunnick, M.D.

that CT scanning makes up 12 percent of procedures that use ionizing radiation, but it generates 46 percent of the collective dose to the population," Dr. Brink added. He pointed to the media's angle on CT increase, citing a quote from a

scientist in *USA Today* asserting that one-third of CT exams are medically unnecessary. "That's his opinion," said Dr. Brink, "but it does serve as a mandate for examining CT utilization as a means to reduce radiation exposure. The article also talks about potential dose reduction benefits associated with two new CT scanners. While you may not be happy about that statement if you work for competing manufacturers, it emphasizes the need to leverage technology to reduce dose as much as possible."

Summit leaders and attendees, especially physicists, emphasized that any radiation dose calculation is only an estimate and that generalizations may be misleading to the public. Presenters acknowledged conflicting findings and opinions on what constitutes dose, to what degree it affects patients and how best to reduce it.

Disputes over conundrums—such as which model best describes cancer-inducing effects or whether low doses can cause cancer—"are non-productive

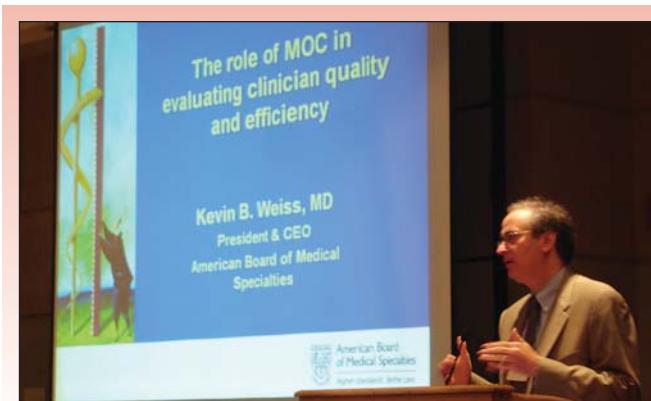
arguments we have permitted to invade our profession," said Louis Wagner, Ph.D., a professor in the Department of Diagnostic and Interventional Imaging at The University of Texas Houston Medical School. "Even though the answers to some of the most critical questions about risk are unknowable today, we have enough data to behave in a manner that assumes the risk is there."

Most counterproductive is the notion that there is no safe dose, said Dr. Wagner. "There is no safe hot dog, vegetable, bed, bathroom, shower, tub, jacket, cup of coffee or glass of water," he said. "But just as we can purify water, put down bath mats and keep medication out of the reach of children, we can keep radiation dose down at a low yet productive level to be of most benefit to our patients."

Added Dr. Frey: "While you can quibble with these papers from a scientific point of view, you can't quibble with the popular media. They need to understand that we are taking the initiative and steps to reduce radiation dose for the good of the population."

Identifying repeat exams and judging their usefulness is of major significance in establishing appropriate imaging protocols, presenters agreed. "If you wake up in the morning with a headache and take two ibuprofen, and a few hours later you still have a headache and take two more. If your head still hurts toward the middle of the day, you're going to start thinking about how many you've taken and start to weigh the benefits against the risks," said Dr. Brink. "I think that analogy applies here."

The American College of Radiology (ACR) is developing tools that will identify repeat exams and measure dose estimates on a grand scale. Laura Coombs, Ph.D., director of data registries in the ACR Department of Quality and Safety, explained a project to establish a Dose Index Registry as part of NRDR. Eleven sites in the U.S. and two in Germany plan to participate. Information will be collected from DICOM headers via a patch installed



"Maintenance of certification is the best tool to protect our profession right now," said Kevin Weiss, M.D., CEO of the American Board of Medical Specialties, keynote speaker at the American Board of Radiology Maintenance of Certification (MOC) Summit in Chicago on Aug. 9.

on Siemens scanners and extracted by ACR-developed software. Future plans for the project will include a nationwide expansion and involve additional vendors. ACR is working with RSNA's Integrating the Healthcare Enterprise (IHE®) initiative to develop a radiation exposure monitoring profile for scanners and software.

When necessary, radiologists must also take the initiative to communicate with referring physicians, said Dr. Weiss. "If you have a situation where a separate doctor orders a CT scan, or says he didn't like the way one was performed and wants it done again, often everybody shrugs their shoulders and says, 'Send the patient in.' How often will you actually make the call?"

Speakers addressed the need for more proactive efforts to collect data on fluoroscopy and emerging techniques like intensity-modulated radiation therapy (IMRT). They also discussed new challenges to dose calculation presented by multimodality therapies and secondary risk factors such as scatter radiation. The summit also examined rising trends in cardiovascular imaging and methods for regulating increasingly popular procedures like "triple rule-out" CT angiography.

At breakout sessions during the summit, attendees brainstormed templates for performance quality improvement projects within four categories: radionuclides, CT, angiography/fluoroscopy and radiation oncology. The sessions yielded preliminary plans for more than 15 new projects, including structured reporting of radiation dose-delivering techniques, protocols to reduce radiation to the lens and orbit in children receiving repeat head CT examinations, a national data registry of estimated dose in angiography and fluoroscopy procedures, iodine therapy for thyroid cancer and IMRT targeting. ABR will work with corresponding societies in the coming months to formulate plans for executing the projects.

"If we do nothing, I'm sure the government, the payers and industry will do something, but it will be clumsy," said N. Reed Dunnick, M.D., RSNA Board Liaison for Science and ABR president. Dr. Dunnick is the Fred Jenner Hodges Professor and chair of the Department of Radiology at the University of Michigan Health System in Ann Arbor. "Nobody knows our business better than we do. We need to carry the flag for quality." □

ABR at RSNA 2008

The American Board of Radiology (ABR) is offering maintenance of certification (MOC) exams during RSNA 2008. Advance registration for these written exams is required. For more information, go to www.theabr.org/SUB_MOC_Dates.htm.

ABR representatives will also be available throughout RSNA 2008 at a kiosk in RSNA Services to respond to questions about the MOC program.



RSNA 2008
Personal Learning in the Global Community

R&E Foundation Seeks to Expand Power of Grants

RECENT changes made by the RSNA Research & Education (R&E) Foundation are designed to expand the power of the Foundation's research and education grants to jump start the careers of radiology trainees and young faculty members.

Preliminary results of a survey of R&E grant recipients are a testimony to the power of the grants. "Working under the RSNA Research Resident Grant was a great experience, allowing both research experience and exposure to academic radiology," wrote one respondent. "Having this exposure as a resident was an important factor in making my decision to go into academic radiology."

Wrote another respondent: "Within the first few years of my career I was invited to give lectures in the field of musculoskeletal imaging—the same field funded by my RSNA Seed Grant—in seven countries."

More results of the R&E grant recipient survey will be released later this year.

Scope, Number of Grants Expanded

One big change made by the Foundation has been to extend the Education Scholar Grant to applicants outside North America. One international grant will be made possible each year by a special endowment donated in memory of international educator and RSNA Board member Derek Harwood-Nash, M.B., Ch.B., D.Sc.

Extending the scope of the Education Scholar Grant will give educators around the world the means to share their knowledge, said Brian C. Lentle, M.D., 2004 RSNA president and chair



Eric J. Stern, M.D.
Chair, R&E Radiology Education Task Force



Brian C. Lentle, M.D.
Chair, R&E International Task Force



Cyrus Raji
2007-2008 Research Medical Student Grant Recipient

of the R&E International Task Force. "Talented educators and mentors in the international community will be inspired by the recognition and in becoming, in a tangible way, part of a worldwide community of scholars," he said.

Another change has been to increase the number of Research Medical Student Grants awarded annually from 20 to 25. With increased competition for the award, which provides \$3,000 for 3-month research

projects, the Board of Trustees has also installed a review panel of five members—representing diagnostic radiology, interventional radiology, radiation oncology and radiobiology, nuclear medicine and medical physics—to review applications.

Cyrus Raji, a 2007-2008 Research Medical Student Grant recipient, cited funding from the R&E Foundation as the springboard for his work investigating the role of arterial spin-labeled MR in diagnosing Alzheimer disease. The

work was subsequently supported by the American Heart Association (AHA).

"Preliminary data from the work funded by RSNA was utilized for a pre-doctoral grant," said Raji, a student

at the University of Pittsburgh School of Medicine. "The AHA grant was awarded in the amount of \$42,000 over two years. That success could not have occurred were it not for the opportunities, confidence and support afforded by the R&E Foundation.

Cyrus Raji

Foundation. It has further solidified my conviction to do academic neuroradiology and, in the future, apply for additional RSNA and National Institutes of Health grants."

RSNA 2008 Scholar Session Open to All

A third change gives RSNA 2008 attendees the chance to see R&E Research Scholar Grants in action. The Scholar Advisor Program, a session during which research scholars present their goals and progress to a group of

What R&E Has to Offer

UNDERSTANDING the scope of the R&E Foundation's grants and awards can help ensure that deserving individuals benefit from the funding available to them. Posters outlining the purpose, nature of projects, amount and eligibility of various grant programs can be downloaded at RSNA.org/foundation/grantposters.cfm.



EDUCATION GRANTS

Deadline—Jan 10

Education Scholar Grant:

Helps individuals develop their expertise in radiologic education and effectively share knowledge with the radiologic community. To be used for 2 years for part-time salary support and educational expenses.

Education Seed Grant:

Provides funding opportunities for individuals with an active interest in radiologic education. Supports the preliminary or pilot phase of education projects.

Fellowship Training Grant:

Provides specialty training to young physicians who are not yet professionally established in the radiologic sciences. Provides salary support for 1 year.

 indicates a grant that is open to international applicants.

RSNA/AUR/APDR/SCARD Radiology Education

Research Development Grant:

Provides 1-year research project opportunities for individuals seeking to advance the science of radiologic education.

RESEARCH GRANTS

Deadline—Jan 15

Research Resident/Fellow Grant:

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

Research Scholar Grant:

For junior faculty members who have completed conventional resident/fellowship training programs but have not yet been recognized as independent investigators. Provides salary support for 2 years.

Research Seed Grant:

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

Research Medical Student Grant

Deadline—Feb. 1

Makes radiology research opportunities possible for medical students and encourages them early in their medical careers to consider academic radiology as an option for their future.

RECOGNITION AWARDS

Roentgen Resident/Fellow Research Award

Deadline—April 1

Recognizes and encourages residents and fellows who have

played an active role in radiologic research during the past year. Participating North American residency programs receive an award plaque to display each year's nominee. The R&E Foundation provides a personalized crystal award for the department to present to the selected resident or fellow.

Outstanding Researcher/Educator Awards Program

Deadline—June 15

Annually recognizes and honors one senior researcher and one senior educator who have made original and significant contributions to the field of radiology or radiologic sciences throughout a career of research or teaching and education. Winners are honored at the opening session of the RSNA Scientific Assembly and Annual Meeting.

More Information

Applicants for R&E research and education grants should begin preparing their applications via the online process starting in October. For more information on all Foundation grant and recognition programs, including examples of funded grant applications, go to RSNA.org/Foundation or contact Scott Walter, M.S., Assistant Director, Grant Administration at 1-630-571-7816 or swalter@rsna.org.

peers and mentors, will be opened to all meeting attendees this year. Opening the session not only gives attendees a glimpse into scholars' research endeavors but also encourages grant recipients to more fully demonstrate how the funding is fueling advances in radiology, said Richard L. Ehman, M.D., R&E Grant Program Committee chair.

"The process of obtaining a grant from the research scholar program

is extremely competitive," said Dr. Ehman, who was named RSNA Outstanding Researcher in 2006 and in 1989 received one of the first research scholar grants awarded. "This session provides RSNA meeting attendees with an opportunity to see capsule updates on cutting-edge research by the next generation of investigators in our field."

The Scholar Advisor Program ses-

sion is scheduled for Tuesday, Dec. 2, from 10:30 a.m. to 12:00 p.m. in Room S103CD. Attendees will receive 1.5 AMA PRA Category 1 Credits™.

Task Force Examines Trends in Radiology Education

While the number and quality of research grant applications has remained relatively stable over the

Continued on Page 17



Research & Education Foundation Donors

THE Board of Trustees of the RSNA Research & Education Foundation and its recipients of research and education grants gratefully acknowledge the contributions made to the Foundation June 21 – July 18, 2008.

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Celebrating 25 years, the RSNA R&E Foundation provides the R&D that keeps radiology in the forefront of medicine. Support your future, donate today at RSNA.org/campaign.

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Michael M. Raskin, M.D., M.P.H., J.D.

John H. Rees, M.D.

Katherine A. Shaffer, M.D. &

William Shaffer

Aslam R. Siddiqui, M.D.

Rebecca R. & Wilbur L. Smith Jr., M.D.

David W. Stoller, M.D.

\$501 - \$1,499

Julia R. Fielding, M.D. &

Keith P. Mankin, M.D.

In honor of Barbara N. Weissman, M.D.

Susan A. Mulligan, M.D. &

Mark J. Mulligan, M.D.

Ingrid E. & Stephen R. Thomas, Ph.D.

\$251 - \$500

John G. Alley Jr., M.D.

Rebecca S. Cornelius, M.D. & James J. Arbaugh, M.D.

Beatriz & Francisco A. Arredondo, M.D.

Tim H. Emory, M.D.

Mary & Donald P. Harrington, M.D.

Mary & Peter R. Hulick, M.D., M.S.

In memory of Peter V. Hulick, M.D.

Richard A. Kiszonas, D.O.

Harvey L. Nisenbaum, M.D.

Rhonda K. McDowell, M.D. &

Robert W. Patton Jr., M.D., J.D.

Linda & Alan Pollack, M.D., Ph.D.

Thomas F. Pugh Jr., M.D.

Jack B. Rampton, M.D.

Anne & Ernest M. Scalzetti, M.D.

Mary B. & George C. Scott, M.D.

\$250 OR LESS

Rajaa M. Almestady, M.D.

Sindy & Mark D. Alson, M.D.

In honor of the ACR fellowship nomination of Bonna Rogers-Neufeld, M.D.

Beverly Brucher

In memory of Jack A. Brucher, M.D.

Victoria &

Michael N. Brant-Zawadzki, M.D.

Ronald A. Broadwell, M.D.

Patricia E. Burrows, M.D.

Margaret H. Chaffey, M.D.

Balasundaram Chandra-Sekar, M.D.

In memory of Derek Harwood-Nash, M.B., Ch.B., D.Sc.

Cathy & J. William Charboneau, M.D.

Tilden L. Childs III, M.D.

Lawrence J. Cohen, M.D.

John J. Cronan, M.D.

Roger L. Cronk, D.O.

Tova & James P. Eisenberg, M.D., Ph.D.

Dmitry Elentuck, M.D.

Neal F. Epstein, M.D.

Diane & George E. Erbacher, D.O.

Janet M. & Daniel A. Feeney, D.V.M.

Kristin M. Foley, M.D.

Mary S. Gardner, M.D.

Alisa D. Gean, M.D. & Seth Gersh

Nydia & John S. Gletnie, M.D.

Susan L. Goldfine, M.D.

Margaret D. Gore, M.D. &

Richard M. Gore, M.D.

Adam R. Guttentag, M.D.

Thomas H. Hunt, M.D.

Cysla & John B. Kamp, M.D.

Melanie & Mark W. Keenan, M.D.

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Angela & Donald R. Klein, M.D.

Mary W. & Stanton S. Kremsky, M.D.

Eun Hye Lee, M.D.

Deborah & Marc S. Levine, M.D.

Jeanette & E. Mark Levinsohn, M.D.

William F. Lindsey, M.D.

Archie R. McGowan, M.D.

Phillip M. Mihm, M.D.

Jaylynn K. & Michael J. Milstein, M.D.

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Rosalene B. Parsons, M.D. &

Rick Parsons, M.D.

Mini Bhaskar & Jay J. Pillai, M.D.

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Jose Luis Ramirez-Arias, M.D.

Brittmarie Ringertz, M.D. &

Hans G. Ringertz, M.D., Ph.D.

Erica & Michael A. San Dretto, M.D.

Carl L. Schultz, M.D.

Louis N. Scotti, M.D.

Lewis I. Segal, M.D.

Jason D. Sinclair, M.D.

Ellie & Thomas L. Slovis, M.D.

Carol J. & Frank J. Szarko, M.D.

Ina L. Tonkin, M.D. &

Allen K. Tonkin, M.D.

Darlene & James C. Walker Jr., M.D.

Neil F. Wasserman, M.D.

Rolla Ella Wilson, M.D.

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

Journal Highlights

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

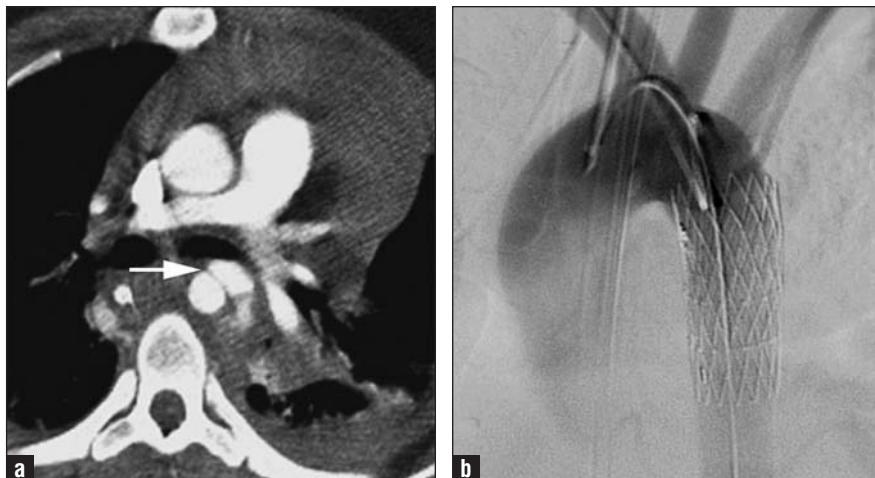
Acute Traumatic Aortic Injury: Imaging Evaluation and Management

TECHNOLOGIC advances, including multidetector CT, are driving significant changes in the imaging evaluation of and treatment for trauma to the aorta. To respond to acute traumatic aortic injury (ATAI), associated with high morbidity and mortality rates, radiologists must understand not only the radiologic perspective but also the pathophysiologic, clinical and surgical perspectives.

In a review in the September issue of *Radiology* (RSNA.org/radiology), Scott D. Steenburg, M.D., of the Medical University of South Carolina, and colleagues review the historical and current status of imaging and therapy of ATAI. Addressed in the article:

- Pathophysiology and mechanism of injury
- Signs, symptoms and clinical presentation
- Morbidity, mortality and outcome
- Imaging findings, including chest radiography, CT scanning, multidetector CT, MR imaging, conventional angiography, intravascular ultrasound

Radiology



Stent-graft for treatment of ATAI.

(a) Transverse contrast-enhanced multidetector CT scan shows complex tear (arrow) of proximal descending thoracic aorta. (b) Conventional angiogram in left anterior oblique projection following stent-graft deployment shows exclusion of transection from aortic lumen. (*Radiology* 2008;248:748-762) © RSNA, 2008. All rights reserved. Printed with permission.

- and transesophageal echoangiography
- Treatments, including open thoracotomy and endovascular stent-graft repair

"With improved in-field care and rapid detection and treatment of ATAI, the morbidity and mortality have improved and patients who initially

survive are more likely than ever to undergo successful repair," Dr. Steenburg and colleagues write. "It is thus paramount that the radiologist be aware of the wide range of presentations and the various imaging findings of ATAI."

Continued on next page

R&E Foundation Seeks to Expand Power of Grants

Continued from Page 15

years, leaders said education grants are underutilized, with applications this year hitting an all-time low. In an attempt to combat this trend, the R&E Board of Trustees appointed a task force of prominent leaders in radiology education.

The task force is part of RSNA's overall role in addressing radiology education, said chair Eric J. Stern, M.D., a professor of radiology and

an adjunct professor of medicine and medical education and bioinformatics at the University of Washington.

"We will assess the R&E Foundation education grant programs and identify ways of improving awareness of these programs, to increase the number and quality of applications and awardees," said Dr. Stern. The task force findings and recommendations will be presented to the R&E Board of Trustees at their meeting this month. □

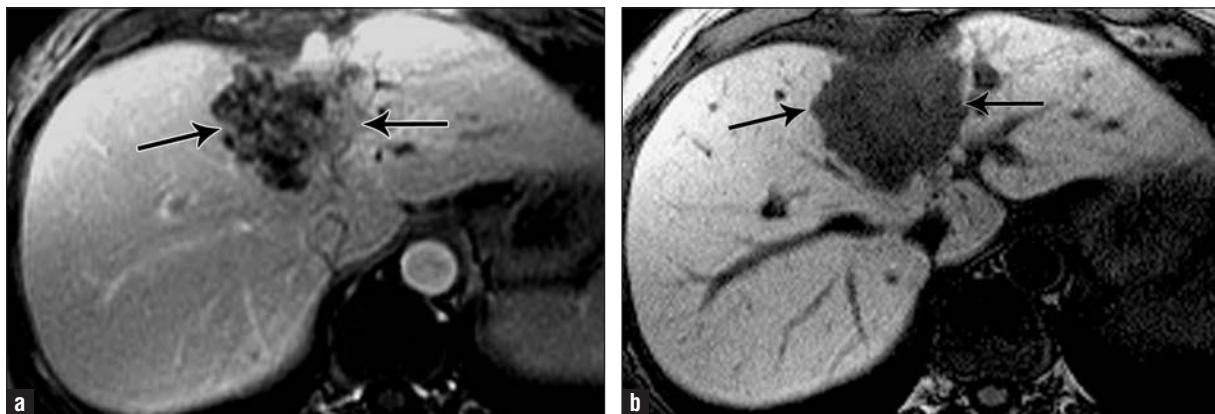
Learn More about the R&E Foundation at RSNA 2008

More information on the RSNA Research & Education (R&E) Foundation will be available at the R&E Pavilion, located in RSNA Services at RSNA 2008. Current grant recipients and information about their projects, as well as listings of the Foundation's individual, private practice and corporate donors, are featured. In addition, a special lounge is available for Foundation donors. Donations will be accepted onsite.



Continued from previous page

Cholangiocarcinoma: Current and Novel Imaging Techniques



AN ARRAY of modalities are now available to aid in the accurate diagnosis and evaluation of cholangiocarcinomas, which pose a diagnostic and therapeutic challenge with their broad range of histologic types, growth patterns and clinical manifestations, as well as varying imaging manifestations that can overlap those of other hepatobiliary diseases. New imaging tools can also help assess response to novel targeted therapies.

In an article in the September-October issue of *RadioGraphics* (RSNA.org/radiographics), Nisha I. Sainani, M.D., of Massachusetts General Hospital, and colleagues discuss the role of imaging in the diagnosis, staging and treatment of cholangiocarcinomas and the screening of high-risk individuals. An imaging algorithm for managing cases of known or suspected cholangiocarci-

Mass-forming peripheral cholangiocarcinoma in a 72-year-old woman.

(a) Fat-saturated T1-weighted MR image obtained after the intravenous administration of gadolinium-based contrast material shows a heterogeneously enhancing lesion (arrows). (b) On a fat-saturated T1-weighted MR image obtained after the administration of manganese dipyridoxylethylenediamine diacetate bisphosphonate, the lesion (arrows) appears hypointense relative to the enhancing liver. The use of this contrast agent increases lesion-liver contrast and lesion conspicuity.

(*RadioGraphics* 2008;28:1263-1287) © RSNA, 2008. All rights reserved. Printed with permission.

noma is also described. Addressed in the article:

- Noninvasive techniques, including transabdominal ultrasonography, multidetector CT and MR imaging
- Confirmation of diagnosis with direct cholangiography, percutaneous biopsy and endoscopic ultrasound
- Emerging techniques, including positron emission tomography (PET) and PET/CT, portal vein embolization and imaging volumetry, antiangiogenic

This article meets the criteria for 1.0 AMA PRA Category 1 Credit®.

therapy and imaging, yttrium-90 microspheres and molecular imaging

"The imaging manifestations of cholangiocarcinomas are extremely diverse, since these tumors vary greatly in growth pattern and location," Dr.

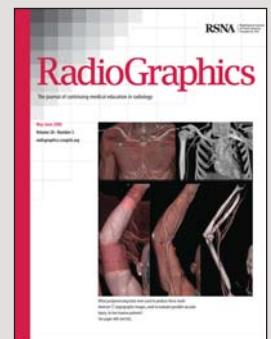
Sainani and colleagues write. "The accurate detection, characterization and assessment of the resectability of the tumor are the primary goals of imaging."

RadioGraphics CME Exercises Increase

BEGINNING with the September-October issue, the number of CME exercises available with each issue of *RadioGraphics* will increase to approximately 13—six in print and up to seven available online only.

RadioGraphics readers responding to a recent survey indicated that they found the journal's CME opportunities very useful for their professional development and maintenance of certification efforts.

"CME is a major mission of the journal," said William W. Olmsted, M.D., editor of *RadioGraphics*. "I am very pleased that we can respond positively and quickly to the wishes of readers in this regard, as CME becomes a more important part of our daily practices and maintenance of certification."



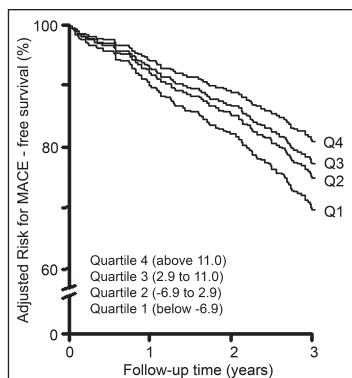
Radiology in Public Focus

A press release has been sent to the medical news media for the following article appearing in the current issue of *Radiology* (RSNA.org/radiology):

Increasing Carotid Plaque Echolucency Predicts Cardiovascular Events in High Risk Patients

RESEARCHERS have found that gray-scale median (GSM) imaging of carotid artery plaques may identify patients at high risk for major adverse cardiovascular events. Markus Reiter, M.D., of the Medical University Vienna General Hospital in Austria, and colleagues found in repeated ultrasound examinations of 574 patients that GSM imaging identified echolucency of carotid artery plaques. Increasing echolucency, they observe, predicted increased incidence of clinical adverse events associated with atherosclerosis.

Participating patients were initially asymptomatic and had carotid artery plaques at the level of bifurcation with a diameter reduction greater than 30



Graph shows risk estimates displaying adjusted hazards for major adverse cardiovascular events (MACE)-free survival until 3 years for 574 patients according to mean changes of gray scale median (GSM, in quartiles) during initial 6-9 month period.

Hazard ratios were calculated with multivariable Cox proportional hazards analysis adjusting for age, sex, history of hypertension, current smoking, low-density lipoprotein cholesterol levels, glycosylated hemoglobin A1 levels, body mass index, positive family history for cardiovascular disease, history of myocardial infarction or stroke, prevalent peripheral artery disease, use of statins during the study period and degree of carotid stenosis at baseline.

(*Radiology* 2008;248:1050-1055) © RSNA, 2008. All rights reserved. Printed with permission.

percent. Forty percent of patients demonstrated decreasing GSM levels and 60 percent showed an increase. During a clinical follow-up period of a median 3.2 years, the researchers recorded 296 major adverse cardiovascular events in 177 patients, including 21 myocardial infarctions, 34 strokes, five amputations due to critical limb ischemia and 89 deaths. Percutaneous coronary interventions, coronary artery bypass graft,

peripheral percutaneous angioplasty and peripheral vascular surgery were also included.

"Plaque morphology represented by GSM seems to add additional information in the complex process of cardiovascular risk stratification," Reiter and colleagues observe, "and repeat ultrasound examinations have the potential to reflect the activity of atherosclerotic disease."

Media Coverage of Radiology

In July, media outlets carried 319 news stories generated by articles appearing in *Radiology*. These stories reached an estimated 182 million people.

News releases promoted findings from a study on long-term effectiveness of CT screening for lung cancer (*Radiology* 2008;248:278-287), use of heel ultrasound to estimate osteoporotic fracture risk (*Radiology* 2008;248:179-184) and automated hippocampal volumetry to differentiate among Alzheimer disease, mild cognitive impairment and normal aging (*Radiology* 2008;248:194-201).

Print and wire coverage included *Palm Beach Post*, *Post-Tribune* (Gary, Ind.), *Rochester Post-Bulletin* (Rochester, Minn.), *Fidelity+*, *Diagnostic Imag-*

ing, *Reuters*, *United Press International* and *Healthday*.

Broadcast coverage included KTAL-TV (Shreveport, La.), KTSF-TV (El Paso, Texas), KULR-TV (Billings, Mont.), WCAU-TV (Philadelphia), WCMH-TV (Columbus, Ohio), WESH-TV (Orlando, Fla.), WMTV-TV (Madison, Wis.), WNCN-TV (Raleigh/Durham, N.C.), WNWO-TV (Toledo, Ohio), WOAI-TV (San Antonio), WOWT-TV (Omaha, Neb.), WSAV-TV (Savannah, Ga.) and WSTM-TV (Syracuse, N.Y.).

Web placements included *WebMD*, *Yahoo! News*, *MSNBC.com*, *Washingtonpost.com*, *CBSnews.com*, *ABCnews.com*, *Healthcentral.com*, *ajc.com*, *docguide.com*, *USNews.com* and *Forbes.com*.

September Public Information Activities Focus on Ovarian and Prostate Cancers

In recognition of Ovarian Cancer Awareness Month and Prostate Cancer Awareness Month in September, RSNA will distribute public service announcements (PSAs) focusing on symptoms of ovarian and prostate cancers, risk factors, screening methods and possible treatment options.

In addition to the PSAs, RSNA will also distribute the "60-Second Checkup" audio program to radio stations. The "60-Second Checkup" also focuses on ovarian and prostate cancers and will include such themes as prostate cancer screening and pelvic imaging in women to detect abnormalities.

Working For You

Associated Sciences Consortium

RSNA News continues its series highlighting the work of organizations working with RSNA in the Associated Sciences Consortium.

Association of Vascular and Interventional Radiographers

THE Association of Vascular and Interventional Radiographers (AVIR) seeks to advance the professional education of its members and promote their profession throughout the medical community. AVIR members are interventional technologists, interventional radiology nurses, cardiovascular technologists, radiology physician assistants, vendor representatives and other associated professionals.

"AVIR is a national organization of professionals who are deeply committed to improving health and quality of life through the practice of vascular and interventional radiology," said Gregg Robinson, C.A.E., AVIR executive director.

The organization's annual scientific meeting, approaching its 19th year, provides Category A continuing education credits to member and non-member attendees. The next meeting, scheduled

for March 2009, is expected to draw more than 400 participants.

"AVIR has strengthened its educational offerings with the Directed Readings program," said Robinson. "The program provides members with opportunities to earn additional Category A credits at their own pace."

In addition to its national presence, AVIR has 23 chapters across the U.S. to provide venues for earning CE credits closer to home.

The AVIR Web site provides a professional networking forum and a career center, as well as a list of study materials and links to colleges and universities with interventional medical imaging technology programs. AVIR's quarterly newsletter, the *Interventional Informer*, keeps members informed on AVIR programs as well as industry issues.



AVIR advocates for industry standards and actively promoted the Consistency, Accuracy, Responsibility and Excellence (CARE) in Medical Imaging and Radiation Therapy bill, which seeks

Medicare education and credentialing standards for radiologic technologists and other professionals.

"AVIR is active in the development and maintenance of standards for interventional radiology professionals," Robinson said, noting that AVIR helped develop Practice Standards for Cardiovascular and Interventional Technology, a section of the American Society of Radiologic Technologists (ASRT) Practice Standards.

For information about AVIR, go to www.avir.org.

Resident Learning Portfolio Gains New Features

More than 30 institutions have registered to use the Resident Learning Portfolio, unveiled in July by RSNA in collaboration with the education committee of the Association of Program Directors in Radiology.

The Web-based portfolio is designed to assist RSNA resident members in recording their goals, accomplishments and progress during the course of their educational development. My Portfolio

enables residents and their program directors to document their training



activities and development, as now required by the Accreditation Council for Graduate Medical Education.

New functions implemented since the portfolio launch include the capability to send an e-mail from within the portfolio and the option to link the credentials, case logs and/or evaluations to

an external Web sites containing related information.

Access the Resident Learning Portfolio at RSNA.org/myportfolio. For additional information, or to register for portfolio access, contact the RSNA Education Center at 1-800-381-6660 x7772 or residents_portfolio@rsna.org.

If you have a colleague who would like to become an RSNA member, you can download an application at RSNA.org/mbrapp or contact the RSNA Membership and Subscriptions Department at 1-877-RSNA-MEM [776-2636] (U.S. and Canada), 1-630-571-7873 or membership@rsna.org.

Program and Grant Announcements

Financial Essentials Available at RSNA 2008

Saturday, November 29 • McCormick Place

To help RSNA 2008 attendees meet the many challenges in today's economy, RSNA will offer two financial seminars. Participants will gain a better understanding of personal estate and investment planning. National Tax and Investment Seminars (NTIS), among the nation's largest providers of financial educational courses for healthcare associations, will offer Effective Estate Planning Strategies, presented by Barry Rubenstein, B.S., J.D., L.L.M., and Effective Investment Strategies, presented by J. Michael Moody, M.B.A.

More information is available at RSNA.org/Education/RSNA_shortcourses.cfm. Register early for these seminars at RSNA.org/register or use the Registration and Housing Form 1 of the meeting brochure. You must be registered for the annual meeting in order to sign up for these seminars. An additional fee applies. These seminars do not qualify for *AMA PRA Category 1 Credit™*. Further questions can be directed to the RSNA Education Center at 1-800-381-6660 x7772 or ed-ctr@rsna.org.



Writing a Competitive Grant Proposal

January 30–31, 2009 • RSNA Headquarters, Oak Brook, Ill.

Application Deadline—December 15

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

A limited number of slots are available for this 1½-day intermediate-level program. The course combines didactic and small group interactive sessions

to help radiologic researchers understand and apply the key components of writing a competitive grant proposal. Topics to be covered include the NIH grant review process, developing specific aims and funding opportunities.

Guided by a faculty of leading researchers with extensive experience in all aspects of grant applications and funding, the program will focus on

developing realistic expectations and provide tools for getting started. Faculty includes G. Scott Gazelle, M.D., Ph.D., of Massachusetts General Hospital in Boston and King C. Li, M.D., of Methodist Hospital in Houston.

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

RSNA MEMBER BENEFITS

RSNA Helps AAPM Celebrate 50th Anniversary

2008 RSNA President Theresa C. McLoud, M.D. (center), was on hand to greet visitors to the RSNA informational booth at the annual meeting of the American Association of Physicists in Medicine (AAPM) in July. AAPM's 50th annual meeting was held at the George R. Brown Convention Center in Houston.

The RSNA booth will also be at the annual meeting of the American Society for Therapeutic Radiology and Oncology, September 21–25 in Boston and the Asian Oceanian Congress of Radiology, October 24–28 in Seoul, Republic of Korea. RSNA members attending those meetings are invited to stop by and bring a colleague to learn more about RSNA membership.



News about RSNA 2008

Registration Materials

NORTH Americans who register for RSNA 2008 by **November 7** will have their registration materials mailed to them in advance of the annual meeting. International attendees will have their materials mailed to them if their registration is received by **October 24**. For international attendees registered after October 24, materials will be available for pick-up onsite at Desk A, located in the Lakeside Center Ballroom near Professional Registration.

Registration materials include:

- Name badge and holder
- Attendance vouchers
- Refresher course and tour tickets (if requested)
- ExpoCard™
- *Pocket Guide*
- Airport shuttle discount coupon
- Free pass for the Chicago Metra Electric Line



Name Badge

A name badge is required to attend RSNA courses or events or to enter the exhibit halls. RSNA will use radiofrequency identification (RFID) badge scanning technology within the Technical Exhibit Halls, the Lakeside Learning Center and multiple session rooms. No personal information is stored in the RFID badge, only an ID number. Badges will be monitored to obtain total attendance counts and exhibit floor traffic. Should you wish to opt out of this program, please visit either Help Center onsite, located in the Grand Concourse or Lakeside Center Ballroom on Level 3.



A complimentary copy of the *RSNA Meeting Program*, an official meeting bag and a name badge lanyard can be obtained by presenting a voucher at the distribution counters located in the Grand Concourse, Lakeside Center Ballroom and South Building.

Course Enrollment

Seats are still available in many RSNA 2008 courses. Online registration occurs instantly, while faxed or mailed registration forms are processed in the order of receipt. The Advance Registration, Housing and Course Enrollment brochure and online registration is available at RSNA.org/register. You must be registered for RSNA 2008 in order to enroll in courses.

Registering for RSNA 2008

There are four ways to register for RSNA 2008:

① Internet

Go to RSNA.org/register

Fastest way to register!

Use your member ID number from the *RSNA News* label or meeting flyer sent to you. If you have questions, send an e-mail to rsna@experient-inc.com

② Fax (24 hours)

1-800-521-6017
1-847-940-2386

④ Mail

Experient/RSNA 2008
108 Wilmot Rd.,
Suite 400

③ Telephone

(Monday–Friday,
8:00 a.m.–5:00 p.m. CT)
1-800-650-7018
1-847-940-2155

Registration Fees

BY 11/7 ONSITE

\$0	\$100	RSNA Member, AAPM Member
\$0	\$0	Member Presenter
\$0	\$0	RSNA Member-in-Training, RSNA Student Member and Non-Member Student
\$0	\$0	Non-Member Presenter
\$130	\$230	Non-Member Resident/Trainee
\$130	\$230	Radiology Support Personnel
\$620	\$720	Non-Member Radiologist, Physicist or Physician
\$620	\$720	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

■ For more information about registering for RSNA 2008, visit RSNA2008.RSNA.org, e-mail reginfo@rsna.org or call 1-800-381-6660 x7862.

Important Dates for RSNA 2008

Oct. 24	International deadline to have full-conference materials mailed in advance
Nov. 7	Final advance registration, housing and course enrollment deadline
Nov. 30–Dec. 5	RSNA 94th Scientific Assembly and Annual Meeting

Technical Exhibition

Publishers Row a Must See

One of the most popular destinations inside the RSNA Technical Exhibition is Publishers Row, located inside Hall A, South Building. More than 20 leading publishers of medical books and products will be featured, including the RSNA Education Store at Booth 2700.

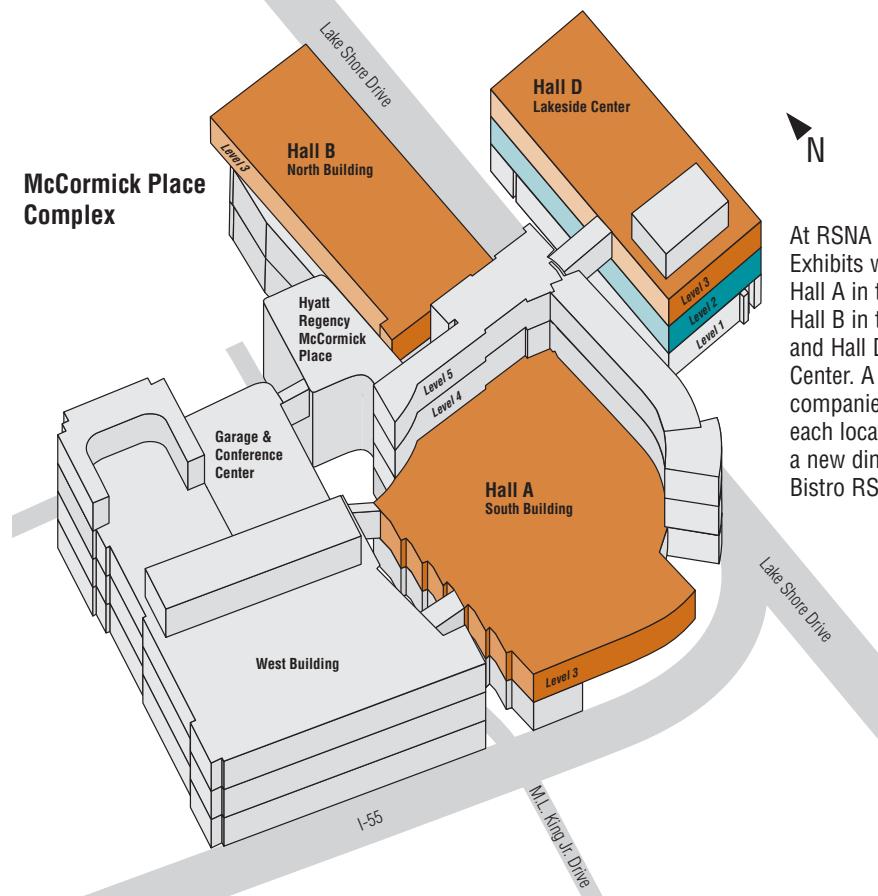
Publishers participating in the RSNA Publisher Partners program offer discounts of at least 10 percent to RSNA members on the purchase of popular medical books and products. Specific discounts and direction on obtaining the discount can be found on RSNA.org. Choose Publisher Partners from the Membership dropdown menu.



Current Exhibitor List Online

Plan your participation at RSNA 2008 early with a searchable database of RSNA 2008 technical exhibitors, online and updated weekly. The database includes a list of the technical exhibitors, including booth numbers and other company information. Look for the View Exhibit Hall/Exhibitor List icon located on the RSNA 2008 home page.

Also part of the online exhibitor list is an interactive floor plan allowing attendees to view and search each exhibit hall by company name, booth number and product category.



At RSNA 2008, Technical Exhibits will be located in Hall A in the South Building, Hall B in the North Building, and Hall D in the Lakeside Center. A balanced mix of companies will be found in each location, along with a new dining option called Bistro RSNA.



RSNA 2008
Personal Learning in the Global Community

94th Scientific Assembly and Annual Meeting
November 30–December 5, 2008
McCormick Place, Chicago

Product News

NEW PRODUCT

3D/4D Ultrasound System

MEDISON USA (www.medisonusa.com) announces the launch of its new ACCUVIX V20 3D/4D ultrasound model. The ergonomic design includes a large 10.4" LCD intuitive touch panel and an articulated arm to provide comfort and functionality. ACCUVIX V20's fundamental operating system, VolumeOS, is easy for users who have relatively little experience with 3D/4D diagnoses. For users accustomed to such diagnoses, the system minimizes redundant time.



NEW PRODUCT

Respiratory Software System for Optimal Radiotherapy Positioning

Dyn'R (www.dynr.com) announces SpiroDyn'rX (SDX), designed to help more accurately position the lungs during radiotherapy.

SDX consists of a spirometer and video glasses combination located in the imaging or treatment room and software installed in the control room. The patient breathes into the spirometer while wearing the glasses. An operator monitoring the process from a computer in the control room determines optimal levels based on the software's illustration of the patient's inhalation and exhalation. The "optimal inspiration zone" is then displayed in the patient's video glasses as a colored bar, helping the patient aim for the desired levels during imaging or treatment.



NEW PRODUCT

Portable Detector for Digital Radiography

Canon USA (www.usa.canon.com) expands its line of digital radiography systems with the CXDI-60G portable flat panel detector. Weighing 5.9 pounds and measuring less than an inch thick, the CXDI-60G offers an effective imaging area of 9 x 11 inches, accommodating a diverse range of applications such as X-rays of hands, elbows, feet and knees.



The CXDI-60G provides a variety of configuration options to fit individual facility requirements and delivers high-quality images with minimal radiation exposure to patients. Images can be confirmed on an optional preview monitor approximately three seconds after exposure.

RSNA.org

New Features Accessible from RSNA.org Homepage

A redesign of the RSNA.org homepage has made new features accessible with just one click.

Learn about highlighted articles in the current month's issue of *Radiology* by reading **This Month in Radiology**. Click *Radiology* in the lefthand side of the page to see the full text of *This Month in Radiology*, complete with images.



Log in to RSNA.org at the top of the righthand side of the homepage and access member-only services including My RSNA® and the full text of *Radiology* and *RadioGraphics* articles.

Read important information about RSNA programs and services, as well as profiles of Research & Education Foundation Scholars and announcements regarding new RSNA publications, in the **Spotlight** section on the righthand side of the page. Holding your mouse over a topic gives a quick synopsis; clicking will take you to the whole story.

Access the **RSNA Buyers Guide**, an online directory of hundreds of companies providing radiology-related products and services, via the link on the righthand side of the homepage. The guide is searchable by keyword and searches can be narrowed by state, city and ZIP code.

Medical Meetings October 2008 – April 2009

OCTOBER 1–4

American Society of Emergency Radiology (ASER), Annual Meeting, InterContinental Houston • www.erad.org

OCTOBER 2–3

The Joint Commission, Annual Ambulatory Care Conference: Quality and Safety, The Passwords to Success, Westin River North, Chicago • www.jcrinc.com/29933

OCTOBER 6–8

International Cancer Imaging Society (ICIS), Society Meeting and 8th Annual Teaching Course, The Assembly Rooms, Bath, United Kingdom • www.icimagingociety.org.uk

OCTOBER 9–12

InterAmerican College of Radiology (CIR), 24th InterAmerican Congress of Radiology, Expo Minas, Belo Horizonte, Brazil • www.cir-radiologia.org

OCTOBER 11–14

North American Society for Cardiac Imaging (NASCI), Annual Meeting, Camelback Inn, Scottsdale, Ariz. • www.nasci.org

OCTOBER 16–18

Society of Chairs of Academic Radiology Departments (SCARD), 2008 Fall Meeting, JW Marriott Starr Pass Resort & Spa, Tucson, Ariz. • www.scardweb.org

OCTOBER 16–19

Royal Australian and New Zealand College of Radiologists (RANZCR), 59th Annual Scientific Meeting, Adelaide, South Australia • www.ranzcr.edu.au

OCTOBER 17–18

American Society for Therapeutic Radiology and Oncology (ASTRO), Translational Advances in Radiation Oncology and Cancer Imaging, Westin Arlington Gateway, Arlington, Va. • www.astro.org

OCTOBER 24–28 VISIT THE RSNA BOOTH

12th Asian Oceanian Congress of Radiology (AOCR), COEX Convention Center, Seoul, Republic of Korea • www.aocr2008.org

OCTOBER 24–26

Society of Radiologists in Ultrasound (SRU), 18th Annual Meeting, The Loews Hotel, Philadelphia • www.sru.org

OCTOBER 29–NOVEMBER 1

International Skeletal Society, Annual Meeting and Refresher Courses, Taj Palace Hotel, New Delhi, India • www.internationalskeletalssociety.com

NOVEMBER 13–15

ASTRO, American Society of Clinical Oncology (ASCO), International Society for the Study of Lung Cancer, Multidisciplinary Symposium in Thoracic Oncology, Chicago Marriott Downtown Magnificent Mile • www.oncologymeetings.org/lung.htm

NOVEMBER 30–DECEMBER 5

RSNA 2008, 94th Scientific Assembly and Annual Meeting, McCormick Place, Chicago • RSNA2008.RSNA.org

DECEMBER 10–12

Society for Pediatric Radiology (SPR), 6th Symposium on Pediatric Cardiovascular MR Imaging, Hospital for Sick Children, Toronto • www.pedrad.org

FEBRUARY 4–8, 2009 VISIT THE RSNA BOOTH

Sociedad Mexicana de Radiología e Imagen (SMRI), Annual Meeting, Mexico City • www.smri.org.mx

FEBRUARY 23–27, 2009

Integrating the Healthcare Enterprise (IHE®), Connectathon and Education Conference, Hyatt Regency Chicago • www.ihe.net

MARCH 6–10, 2009 VISIT THE RSNA BOOTH

European Congress of Radiology (ECR), Austria Center, Vienna • www.ecr.org

MARCH 7–12, 2009

Society of Interventional Radiology (SIR), 34th Annual Meeting, San Diego • www.sirweb.org

MARCH 15–20, 2009

Society of Gastrointestinal Radiologists (SGR) and Society of Uroradiology (SUR), Abdominal Radiology Course, Grand Wailea Resort Hotel & Spa, Maui, Hawaii • www.sgr.org

APRIL 4–8, 2009

Healthcare Information and Management Systems Society (HIMSS), Annual Conference and Exhibition, Chicago • www.himssconference.org