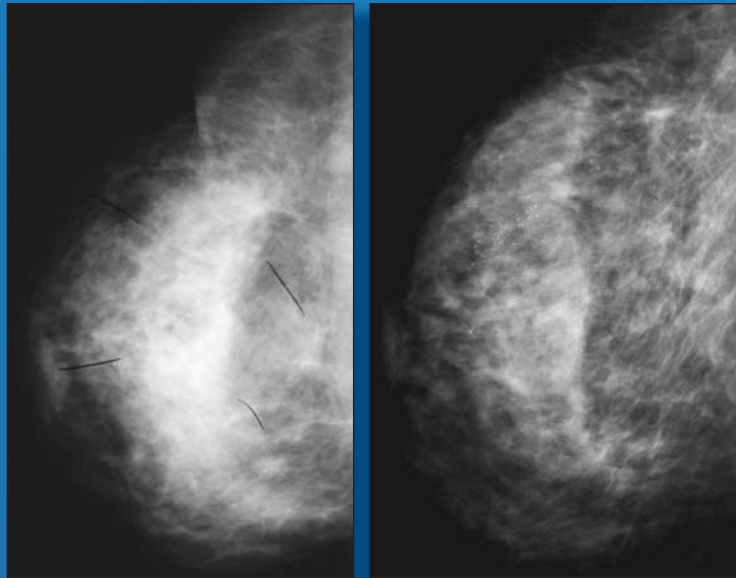


RSNA *News*



Breast Cancer Screening Enters Era of Personalized Care

Also Inside:

- *RadioGraphics* Earns High Marks in Reader Survey
- Radiologists Urged to Make Service Personal and Patient-Centered
- Image Fusion System Fast, Reliable Guide for Tumor Treatment
- Algorithm Speeds Victim Identification through Dental Records

**Abstract Deadline for RSNA 2008
April 15, 2008**

RSNA *News*

1 **Announcements**

2 **People in the News**

4 **My Turn**

Feature Articles

6 **Breast Cancer Screening Enters Era of Personalized Care**

8 **RadioGraphics Earns High Marks in Reader Survey**

10 **Radiologists Urged to Make Service Personal and Patient-Centered**

12 **Image Fusion System Fast, Reliable Guide for Tumor Treatment**

14 **Algorithm Speeds Victim Identification through Dental Records**

Funding Radiology's Future[®]

15 **R&E Foundation Donors**

17 **Radiology in Public Focus**

18 **Journal Highlights**

19 **RSNA: Working for You**

21 **Program and Grant Announcements**

22 **Meeting Watch**

23 **Exhibitor News**

24 **Product News**

25 **RSNA.org**

RSNA News

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NIH and ERC Unveil Public Access Policies

NEW POLICIES enacted by the National Institutes of Health (NIH) and European Research Council (ERC) are designed to make outcomes of all research funded by the organizations publicly accessible.

The NIH Public Access Policy requires that all NIH-funded investigators submit to the National Library of Medicine's PubMed Central (PMC) an electronic version of their final, peer-reviewed manuscripts upon acceptance for publication, to be made publicly

available no later than 12 months after the official publication date.

NIH states that it will implement the policy in a manner consistent with copyright law. The policy applies to all peer-reviewed articles arising, in whole or in part, from direct costs funded by NIH, or from NIH staff, accepted for publication on or after April 7, 2008.

The ERC now requires that all peer-reviewed publications from ERC-

funded research projects be deposited, upon publication, into an appropriate research repository such as PMC, ArXiv or an institutional repository and subsequently made open access within 6

months of publication. The ERC added that it is essential that primary data are deposited to the relevant databases as soon as possible, preferably immediately after publication but no later than 6 months.



CMS Decision on Cardiac CTA Expected

Cardiac imagers await a decision this month by the Centers for Medicare & Medicaid Services (CMS) regarding Medicare coverage of cardiac CT angiography (CTA).

CMS announced in December a proposed plan to cover CTA only in Medicare beneficiaries with two specific clinical indications of coronary artery disease (CAD) under the Coverage with Evidence Development process, which allows coverage in connection with clinical trials. For the past couple years, decisions about Medicare coverage of CTA were made by contractors at the state level.

In proposing the change, CMS noted a lack of evidence on outcomes and limitations in cardiac CTA, including segments that

may be uninterpretable and health risks from the radiation exposure. The proposed policy still provides

consistent coverage and uniform access to cardiac CTA for Medicare beneficiaries while stimulating the additional research needed to develop evidence on patient outcomes, according to CMS.

The North American Society for Cardiac Imaging, American College of Radiology and American College of Cardiology are among the organizations that have objected to the coverage change, saying it ignores many studies showing CTA's utility and efficacy.

More information is available at www.cms.hhs.gov/mcd/viewdraftdecisionmemo.asp?id=206.



FDA Warns of MR Risks Related to Unretrieved Device Fragments

The U.S. Food and Drug Administration (FDA) is warning physicians about risks related to a unretrieved device fragment (UDF), a piece of a medical device that has separated unintentionally and remains in the patient after a procedure. Radiologists in particular should be aware, according to the FDA, that during MR imaging procedures magnetic fields may cause metallic fragments to migrate, and radiofrequency fields may cause them to heat, causing internal tissue damage and/or burns.

The Center for Devices and Radiological Health (CDRH) receives nearly 1,000 adverse event reports each year related to UDFs, including more than 200 different medical devices and numerous medical specialties.

The FDA recommends avoiding MR imaging exams in patients with UDFs. The FDA announcement can be accessed at www.fda.gov/cdrh/safety/011508-udf.html.

MEDICAL IMAGING COMPANY NEWS

Stone Replaces Pryor at Agfa

■ Bob Pryor has retired from his position as president of Agfa HealthCare Americas. Pryor is replaced by Barry Stone, formerly chief operating officer for Agfa. Pryor joined Agfa with the company's Sterling Diagnostic Imaging acquisition in 1999.

Elekta to Purchase CMS

■ Elekta AB, of Stockholm, Sweden, has announced its intent to acquire CMS Inc., of St. Louis, for \$75 million. Elekta develops clinical solutions for radiation therapy and radiosurgery. CMS specializes in advanced radiation therapy planning solutions supporting more than 1,500 clinical sites worldwide.

Current Brachytherapy Reimbursement Extended Through June

Among the measures included in the Medicare, Medicaid and State Children's Health Insurance Program (SCHIP) Extension Act of 2007 is an extension of the current reimbursement model for brachytherapy seeds.

A Centers for Medicare and Medicaid Services rule would have set a fixed per-seed reimbursement rate as of January 1, 2008. The act passed by Congress continues reimbursement of actual costs through June 30.

ABR Seeks Associate Executive Director Applicants

The Board of Trustees of the American Board of Radiology (ABR) seeks applications for the part-time position of associate executive director (AED) for diagnostic radiology and subspecialties.

The new AED will work with the ABR executive director and the AED for administration to coordinate and execute the ABR Strategic Plan and the policy decisions of the ABR Board of Trustees. The AED will also work with ABR division chairs on operational matters, systems analysis and quality improvement and with the AEDs for radiation oncology and radiologic physics to coordinate policy and the specifics of implementation across the three disciplines.

Candidates will be evaluated for their experience as a diagnostic radiologist, with or without subspecialty certification, as well as their status as a current or former ABR trustee and their track record of participation, accomplishment, effectiveness and collegiality.

ABR anticipates selecting a new AED by May 23, with an expected start date of July 7. Interested parties should contact ABR by April 30:

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ABII Exam Yields New Certified Imaging Informatics Professionals

The American Board of Imaging Informatics has announced 84 new certified imaging informatics professionals (CIIPs) after the second administration of the ABII exam in September 2007. The first exam in June 2007 yielded 99 CIIPs.

The ABII exam tests candidates in several key areas of knowledge, with image management and information technology comprising about one-third of the 130 items. Remaining questions focus on operations, communications, systems management, clinical engineering, medical informatics, procurement, project management and training and education. For information about future tests and a searchable database of CIIPs, go to www.abii.org.

PEOPLE IN THE NEWS

Berquist is AJR Editor

Thomas H. Berquist, M.D., director of the radiology residency and musculoskeletal fellowship programs at Mayo Clinic Jacksonville (Florida) and a professor of radiology in the Mayo Clinic College of Medicine, has been named the new editor-in-chief of the *American Journal of Roentgenology* (AJR). Dr. Berquist will begin his term in June.

Dr. Berquist joined the staff in diagnostic radiology at Mayo Clinic Rochester in 1977 and served as the department's vice-chair from 1986 to 1990. He then moved to Jacksonville and became chair of the Department of Radiology, a position he held until April 1999. In March 2006, he was appointed to the Board of Trustees of the American Board of Radiology.

Hazelton is New Radiology Chair at USF Health

Todd R. Hazelton, M.D., is the new chair of radiology at the University of South Florida College of Medicine. Dr. Hazelton will be responsible for building the department as USF gets ready to open its Morsani Center for Advanced Healthcare.

Dr. Hazelton, an associate professor of radiology at USF, served most recently as chief of radiology service at the H. Lee Moffitt Cancer Center & Research Institute. An attending thoracic radiologist at Moffitt for the last 10 years, he was also associate director and then director of the USF Diagnostic Radiology Residency Program.



Todd R. Hazelton, M.D.

VIEWING TECHNOLOGY Tip of the Month

High resolution monitors should be calibrated at least annually. Some protocols require more frequent testing. As a quick check, look at a standard test image frequently.



SUR, SGR Present Awards

N. Reed Dunnick, M.D., RSNA Board Liaison for Science, received the gold medal of the Society of Uroradiology (SUR) at the SUR annual meeting last month. 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.

Also receiving the SUR gold medal was **E. Stephen Amis Jr., M.D.** Dr. Amis is a professor and chair of the Department of Radiology at the Albert Einstein College of Medicine and Montefiore Medical Center in Bronx, New York.

Receiving the SUR Lifetime Achievement Award were **Stanford M. Goldman, M.D.**, and **Neil F. Wasserman, M.D.** Dr. Goldman is a professor of radiology and urology and chief of genitourinary radiology at The University of Texas Health Science Center, an adjunct professor of radiology and urology at Baylor School of Medicine and adjunct professor of radiology at M.D. Anderson Cancer Center, all in Houston. Dr. Wasserman is a professor in the Department of Radiology at the University of Minnesota in Minneapolis.

Also at the joint meeting of SUR and the Society of Gastrointestinal Radiologists (SGR), the SGR Walter B. Cannon Medal was awarded to **Dean D.T. Maglinte, M.D.**, a professor of radiology at the Indiana University School of Medicine in Indianapolis. **Borut Marincek, M.D.**, a professor of radiology and chair of the Institute of Diagnostic Radiology at Zurich University Hospital in Switzerland, was named an SGR Distinguished International Member.



N. Reed Dunnick, M.D.



E. Stephen Amis Jr., M.D.



Stanford M. Goldman, M.D.



Dean D.T. Maglinte, M.D.



Borut Marincek, M.D.

Alderson Named Dean at SLU

Saint Louis University has named **Philip O. Alderson, M.D.**, dean of Saint Louis University School of Medicine effective April 1.

Dr. Alderson currently serves as chair of the Department of Radiology at Columbia University and director of radiology service at Columbia-Presbyterian Medical Center. He also is the James Picker Professor of Radiology at the College of Physicians and Surgeons at Columbia University.

Also president of the American Board of Radiol-

ogy, Dr. Alderson earned his bachelor's and medical degrees at Washington University in St. Louis and completed his residency in radiology and nuclear medicine at the Mallinckrodt Institute of Radiology at the Washington University School of Medicine.

As chair of the RSNA Public Information Committee, Dr. Alderson helped lead an RSNA refresher course on patient-centered radiology. An article on the course appears on Page 10.



Philip O. Alderson, M.D.

IN MEMORIAM:

M. Judah Folkman, M.D.

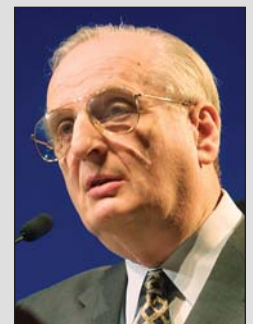
M. Judah Folkman, M.D., a renowned cancer researcher who delivered the New Horizons Lecture at RSNA annual meetings in 1973 and 2001, died Jan. 14 at the age of 74.

Initially drawing skepticism from the scientific community for his investigations of blocking angiogenesis to cure cancer, Dr. Folkman was later revered for the work that led to the development of numerous cancer drugs. He began his work in the 1960s but became particularly well-known after a May 1998 *New York Times* article in which Nobel laureate and DNA co-discoverer James Watson,

Ph.D., declared, "Judah is going to cure cancer in two years." While the prediction did not come true, Dr. Folkman is still hailed as one of history's most important cancer investigators.

At the time of his death, Dr. Folkman was director of the vascular biology program at Children's Hospital Boston. National Cancer Institute Director John Niederhuber, M.D., called Dr. Folkman "the father of angiogenesis research."

Dr. Folkman presented "Tumor Angiogenesis: Therapeutic Implications" at RSNA 1973 and "Angiogenesis-dependent Imaging" at RSNA 2001.



M. Judah Folkman, M.D.

IN MEMORIAM:

Steven A. Leibel, M.D.

Steven A. Leibel, M.D., co-chair of the RSNA Oncologic Imaging and Therapies Task Force and a driving force behind the new Bolstering Oncoradiologic and Oncoradiotherapeutic Skills for Tomorrow (BOOST) program that debuted at RSNA 2007, died Feb. 7. He was 61.

Dr. Leibel was the Ann and John Doerr Medical Director of the Stanford Cancer Center and professor of radiation oncology at Stanford University. He joined Stanford in 2004 as the first medical director of the newly opened cancer

center after spending 16 years in the Department of Radiation Oncology at Memorial Sloan-Kettering Cancer Center in New York.

Known for his work in developing 3D conformal radiation therapy and intensity-modulated radiation therapy, Dr. Leibel helped create the BOOST program with the intention of encouraging greater collaboration between diagnostic radiologists and radiation oncologists. He received the gold medal of the American Society for Therapeutic Radiology and Oncology in 2002.



Steven A. Leibel, M.D.



Send news about yourself, a colleague or your department to rsnanews@rsna.org, 1-630-571-7837 fax, or RSNA News, 820 Jorie Blvd., Oak Brook, IL 60523. Please include your full name and telephone number. You may also include a non-returnable color photo, 3x5 or larger, or electronic photo in high-resolution (300 dpi or higher) TIFF or JPEG format (not embedded in a document). RSNA News maintains the right to accept information for print based on membership status, newsworthiness and available print space.

MY TURN

Securing the Role of Imaging in Medical Research

AS IMAGING research programs at institutions nationwide find themselves with new opportunities thanks to the National Institutes of Health (NIH) Roadmap for Medical Research, RSNA has stepped up to assist researchers wanting to capitalize on newfound infrastructure, resources and collaborative environments.

One of the themes of the NIH Roadmap, developed in 2003, was Re-engineering the Clinical Research Enterprise. The resulting Clinical and Translational Science Awards (CTSA) Consortium, launched in October 2006, began with 12 awards, expanded to 24 last September and anticipates about 60 awardee institutions when fully implemented in 2012.

To encourage the best opportunities for imaging research within these awardee institutions, RSNA brought together imaging investigators from CTSA sites last November. Subsequent discussions with the National Center for Research Resources, National



Institute of Biomedical Imaging and Bioengineering and National Cancer Institute staff have led to an RSNA and NIH partnership, facilitating information exchange and development of collaborative projects for all imaging entities within the CTSA Consortium. This partnership will be fueled by regular conference calls, a wiki and project-specific workshops.

RSNA focuses its efforts by establishing a role for imaging within all the CTSA Program goals:

- Captivate, advance and nurture a cadre of well-trained multi- and interdisciplinary investigators and research teams
- Create an incubator for innovative research tools and information technologies
- Synergize multidisciplinary and interdisciplinary clinical and translational research and researchers to catalyze the application of new knowledge



Daniel C. Sullivan, M.D.

and techniques to clinical practice at the front lines of patient care

RSNA is also working to broaden the reach of its informal imaging research network by coordinating with other groups such as the NCI-funded Imaging Response Assessment Teams (IRATs).

This network is just one example of the activities the RSNA Board of Directors is developing to advance objective and quantitative methods in radiology. From Roentgen's discovery more than a century ago to imaging biomarkers identified just yesterday, RSNA remains committed to keeping imaging not only relevant, but also critical, to medicine.

Daniel C. Sullivan, M.D., is RSNA Science Advisor and chair of the RSNA Research Development Committee. Dr. Sullivan is a professor in the Department of Radiology at Duke University in Durham, N.C. and director of the Imaging Program at Duke Cancer Center.



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Breast Cancer Screening Enters Era of Personalized Care

STUDIES indicating the high sensitivity of MR imaging for breast cancer screening, along with new screening guidelines prompted by those studies, are ushering in a new era of personalized care, according to some breast imagers.

National screening guidelines that endorsed annual MR imaging along with mammography for women at high risk of breast cancer constituted one of the top six cancer stories of 2007, according to an annual list released by the American Society of Clinical Oncology.

The new guidelines, issued by the American Cancer Society (ACS), came just two years after a large, multicenter trial indicated that digital mammography was more sensitive than film mammography in certain groups of women—generally those who were younger and had dense breasts.

Together the MR imaging and digital mammography findings, which could affect millions of women, mark the transition from a time when film mammography was the uniform screening modality to an era when choice of modality can depend on each woman's risk status. "Personalized approaches to breast cancer surveillance are here," said Mitchell D. Schnall, M.D., Ph.D., speaking in November at the annual cancer prevention meeting of the American Association for Cancer Research.

Infrastructure Must Evolve

The transition to personalized screening is far from complete, however. Clini-

cians translating the new guidelines into practice are dealing with practical and administrative issues. "We have not yet created a proper infrastructure," said Dr. Schnall, who heads the University of Pennsylvania's radiology research division in Philadelphia. "Practical approaches to managing the personal surveillance system are going to be important for this to have a clinical impact."

For decades, breast cancer screening has been rooted in film mammography, with conversion to digital slowed by the need for high resolution. In 2005, however, the Digital Mammographic Imaging Screening Trial (DMIST) showed that digital mammography was more sensitive than film in women who were young, had dense breasts, were pre-menopausal or were going through menopause.

Use of digital mammography has since grown rapidly. According to the U.S. Food and Drug Administration, the proportion of certified mammo-

Practical approaches to managing the personal surveillance system are going to be important for this to have a clinical impact.

Mitchell D. Schnall, M.D.

graphy facilities with full-field digital units grew from about 6 percent in January 2005 to nearly 30 percent in January 2008.

The next step toward personalized screening came with successful MR imaging trials in women at high risk of breast cancer. The resulting ACS guidelines recommend annual MR imaging along with mammography for women who have a breast cancer (BRCA)1 or BRCA2 gene mutation; have a first-degree relative with a mutation; received radiation to the chest between ages 10 and 30 (usually as treatment for



Mitchell D. Schnall, M.D., Ph.D.
University of Pennsylvania

Hodgkin disease); have a lifetime risk of 20 percent or more as determined by an accepted risk assessment tool predominately based on family history; or have one of several rare syndromes that predispose women to breast cancer.

Other organizations are joining ACS in revising their screening guidelines. Until this year, the National Comprehensive Cancer Network (NCCN), a partnership of 18 large cancer centers across the country, had recommended that MR imaging be "considered" in conjunction with mammography for women who are at high risk because of a strong family history or genetic predisposition. In 2008, NCCN will strengthen the guideline for women who have a genetic predisposition to the disease, dropping the word "consider," said Therese Bevers, M.D., chair of NCCN's breast screening guidelines committee.

NCCN will continue to recommend that physicians consider screening with MR imaging for women with a strong family history. It is also adding a rec-

ommendation to consider MR imaging for those women with a history of lobular carcinoma in situ or thoracic radiation, said Dr. Bevers, who is medical director of the cancer prevention center at the M.D. Anderson Cancer Center in Houston.

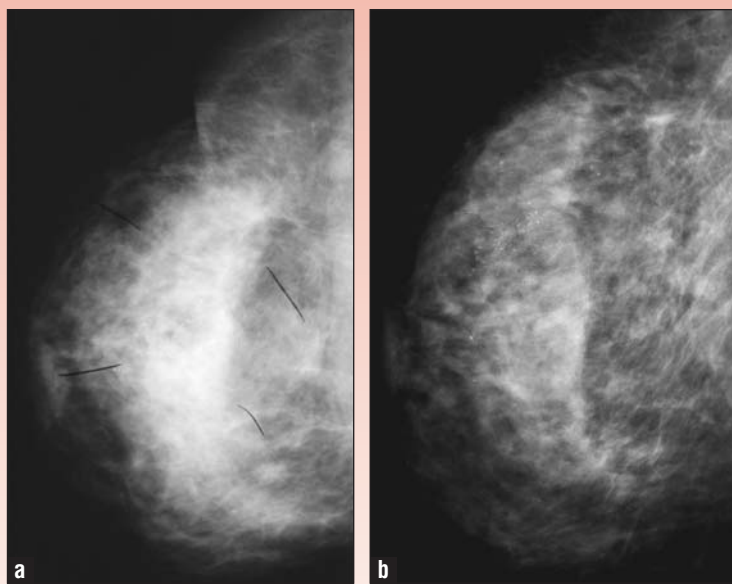
Before ACS issued its guidelines, the anticipated growth rate for breast MR procedures was 40 percent a year through 2010, according to Nealie Hartman, clinical marketing manager in the MR division of Siemens Medical Solutions in Malvern, Pa. That rate has tripled since the guideline revision, making breast MR the fastest growing MR procedure, Hartman said.

Insurance Coverage, Follow-Up Issues Require Attention

As personalized screening becomes a reality, radiologists face practical issues. Insurance coverage of screening MR imaging can still be an obstacle even in the wake of the revised ACS guidelines, with radiologists interviewed for this article saying coverage is not automatic and can involve a good deal of peer-to-peer discussion with payors.

Also at issue is following up on positive MR imaging findings. ACS cautions women against getting MR imaging in a practice that does not also offer MR image-guided biopsy. However, smaller practices often do the MR imaging and then refer patients to a larger center for biopsy.

Such a requirement creates a dilemma due to the variability in MR imaging protocols, said Jennifer Harvey, M.D., director of breast imaging at the University of Virginia in Charlottesville. Often the center doing the biopsy cannot readily use the referring center's images. Practices may need to form a relationship with a center that does biopsies and set up their MR imaging breast screening protocols to match, said Dr. Harvey, who chairs the breast imaging subcommittee of the RSNA Scientific Program Committee. In addition, more practices may have to learn how to do MR image-guided biopsies, she said.



ON THE COVER

Analog and digital mammograms of a moderately dense breast.

(a) Analog image demonstrates poor penetration in the dense region. (b) Digital image has improved contrast, shows a suspicious mass more clearly, and allows better visualization of peripheral tissue and the skin line.

Courtesy of Laurie Fajardo, M.D., University of Iowa, Iowa City. (*RadioGraphics* 2004; 24:1747-1760) © RSNA, 2004. All rights reserved. Reprinted with permission.

Perhaps the largest issue facing practices in a personalized screening era is how and when to determine a patient's risk status. Prior to release of the new guidelines, most MR imaging breast cancer screening was among women with a strong family history and/or a genetic predisposition. New recommendations for MR imaging in women with a 20 percent or higher risk, however, cover a much broader group. ACS has estimated that its new guidelines could affect 1.4 million women.

The broader criteria suggest the need for a system to determine risk routinely in all women, said Dr. Schnell. This is already done in some academic centers like Penn's risk clinic and at M.D. Anderson, where the radiology department works in conjunction with Dr. Bevers' cancer prevention clinic next door.

Most women who go for yearly mammograms, however, do not undergo a thorough risk evaluation. "If a woman today is very savvy about breast cancer risk, she likely will find a place for risk evaluation," Dr. Schnell

said. "For the average busy woman, it's not clear anybody will steer her in the right direction."

"Clearly this is an evolving area and radiologists are likely to have a more important role in identifying women who are at high risk," said Dr. Harvey, noting that primary care physicians and gynecologists will likely join radiologists in the task. □

Learn More

■ "American Cancer Society Guidelines for Breast Screening with MRI as an Adjunct to Mammography," published in the March-April 2007 issue of *CA: A Cancer Journal for Clinicians*, is available online at caonline.amcancersoc.org/cgi/content/full/57/2/75.

■ "MRI Evaluation of the Contralateral Breast in Women with Recently Diagnosed Breast Cancer," published in the March 29, 2007, issue of *The New England Journal of Medicine*, is available online at content.nejm.org/cgi/content/full/356/13/1295.

■ More information about the Digital Mammographic Imaging Screening Trial (DMIST) is available at www.nci.nih.gov/dmist.

RadioGraphics Earns High Marks in Reader Survey



RadioGraphics is the most popular and useful journal in radiology, according to an RSNA survey.

The survey, conducted in early 2007 and results released in early 2008, followed much the same format as its predecessors in 1991, 1997 and 2002.

“We are very pleased with how the survey was conducted,” said *RadioGraphics* Editor William W. Olmsted, M.D. “These surveys give us an opportunity to see where we are and give us a chance to make positive changes for the future of the journal.”

The results reflect satisfaction with changes made to RSNA’s educational journal over the last several years. Seventy percent of respondents agreed that the journal is better today than it was five years ago, confirming steady increases in

satisfaction since 1991. *RadioGraphics* was launched in 1981 and Dr. Olmsted has been editor since 1990.

Radiologists in both private and academic practices are devoting more time to reading *RadioGraphics*, according to the survey. A majority of respondents—72.3 percent—answered that they read a single issue for an hour or more, compared with 66.5 percent in 2002 and 64.6 percent in 1997. Many spent even longer—28.6 percent of readers in academics or research and 50 percent of those in clinical practice responded that they read an issue for two or more hours, an increase from 37 percent in 2002 and 34.4 percent in 1997. Three-quarters of all respondents agreed that *RadioGraphics* is a “must-read.”

More Online Presence on the Horizon

The survey also revealed trends that will influence *RadioGraphics* in the future. *RadioGraphics* online was more widely used in 2007, compared with assessment done in prior years. The number of total respondents who read

RadioGraphics online climbed from 21 percent in 2002 to 41 percent in 2007, with 67 percent of international respondents reading the online version. Most North American respondents indicated they still prefer to read *RadioGraphics* in print but are saving the print copies for shorter



William W. Olmsted, M.D.
RadioGraphics Editor

periods of time. “When you look at the survey, you see that people still like the print version a lot,” said Dr. Olmsted. “But we recognize that journal reading and search patterns in radiology are changing.” As a result, he said, RSNA is exploring ways to make *RadioGraphics* more interactive in print and online.

“For example, the future might bring a condensed print version with a beautiful cover, weighty abstracts, teaching points and two or three of the key images, and then readers could look at the online version for more detail,” Dr. Olmsted said. When readers want to save or share specific articles, he added, they can print individual PDFs for easier portability.

The majority of international readers prefer to view *RadioGraphics* online, according to the survey. To further increase outreach to the international community, *RadioGraphics* publication guidelines will be translated into eight languages to facilitate submissions from international authors, said Dr. Olmsted.

Overall Quality of *RadioGraphics* Compared to 5 Years Ago

Journal is better today	69.8%
No difference	28.8%
Journal was better 5 years ago	1.3%

Opinions Concerning *RadioGraphics* Online—2007

	STRONGLY AGREE	AGREE
Shortens time spent searching for article of interest	57.8%	30.7%
Shortens time spent reviewing the literature in radiology	46.4%	36.7%

Actions Taken as a Result of Reading *RadioGraphics*—2007

Saved an article	88.9%
Called an article to the attention of a colleague	81.0%
Adapted a new process or modified a procedure	68.8%

*Multiple responses allowed. Percentages may not add up to 100.

Changes Will Enhance CME

Plans are also in place to increase online CME offerings from 10 or 11 credits to 12 or 13 credits per issue, starting in September 2008. Dr. Olmsted emphasized that continuing education credits are now necessary for

Helping readers adapt a process or modify a procedure is the type of impact a clinical journal strives to achieve.

William W. Olmsted, M.D.

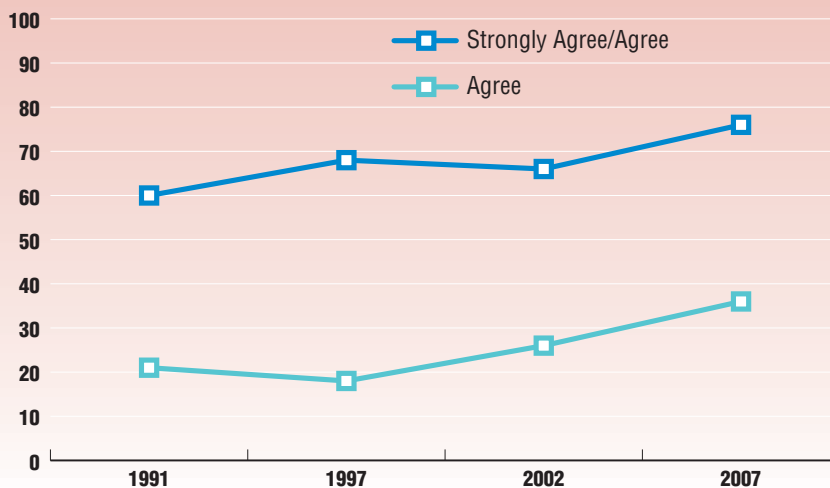
maintenance of certification in the U.S. and other nations will follow suit. "We intend to further promote CME offerings when maintenance of certification efforts gear up in the international community," he said. Overall, *RadioGraphics* readers are currently receiving about 10,000 credits per issue.

Other changes inspired by the survey results include moving the Quality Initiatives, Informatics and Lifelong Learning sections toward the front of the journal for better recognition. Additionally, given that a third of the respondents were unaware of *RadioGraphics* online or its special features—including subspecialty collections and teaching points—Dr. Olmsted anticipates an editorial explaining how to use *RadioGraphics* online.

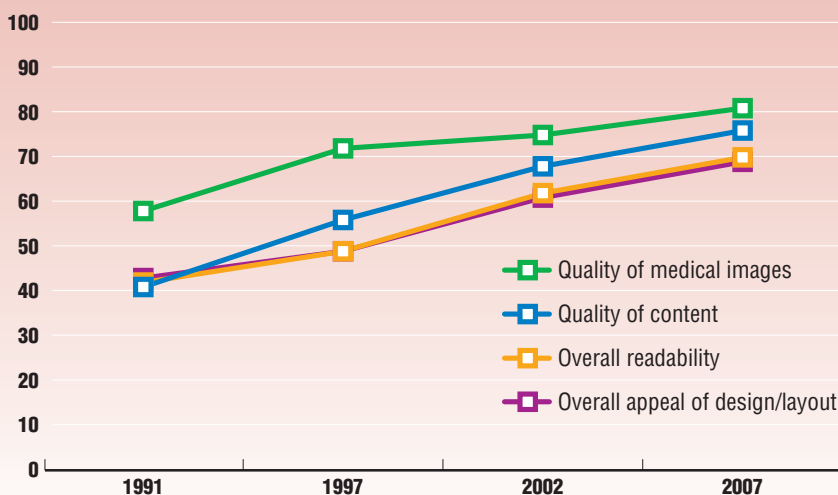
RadioGraphics Valued for Clinical Usefulness

When asked to compare the usefulness of leading radiology journals, 78.5 percent of all respondents and 84.5 percent of international respondents made *RadioGraphics* their first or second choice as the "most useful" publication in their practices. Almost all respondents reported that they save articles from *RadioGraphics* or call them to the attention of colleagues and 69 percent said they adapted a process or modified a procedure after reading about it in *RadioGraphics*. "That type of impact is what a clinical journal strives to achieve," said Dr. Olmsted. □

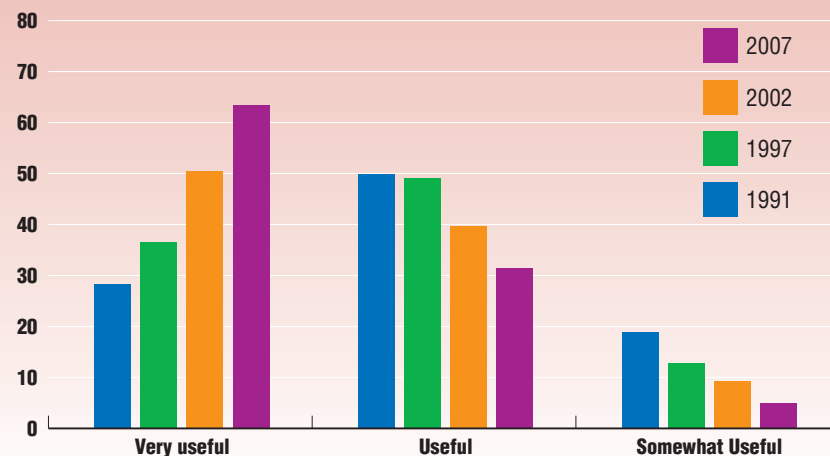
Consider RadioGraphics "Must" Reading, 1991–2007



Rating Selected Aspects of RadioGraphics Print Version, 1991–2007



Clinical Usefulness of RadioGraphics, 1991–2007



Radiologists Urged to Make Service Personal and Patient-Centered

IN AN ERA of consumer-driven healthcare, outsourcing of imaging services and growing competition, radiologists are being urged to see their work through the patient's eyes and put the patient first in every step of the process.

"It's about having a doctor looking at a patient—maybe not directly with hands on, but certainly looking at a patient," said Michael N. Brant-Zawadzki, M.D. "Not a study—a patient."

Dr. Brant-Zawadzki, medical director of radiology at Hoag Memorial Hospital in Newport Beach, Calif., was among the presenters at an RSNA 2007 refresher course, "Patient-centered Radiology: Use It or Lose It." The course was sponsored by the RSNA Public Information Committee.

Making a practice more patient-centered also means "seeing the process as if you were the patient and expecting the process to work for you as a patient," said Dr. Brant-Zawadzki. It also means becoming more clinical in radiology practice, he said. "By clinical, I mean having direct interaction with a patient, even around procedures that are not performed directly hands-on by the radiologist."

Course co-presenter Philip O. Alderson, M.D., agreed that radiologists must reach out and connect with patients, especially in light of rapid changes in healthcare economics.

"There's a real threat that inter-

You can't replace local and personal services with film readings performed many miles or half a continent away.

Philip O. Alderson, M.D.

pretation of radiologic images could become a commodity," said Dr. Alderson, chair of the Department of Radiology at Columbia University Medical Center in New York. "Radiology services need to take on a much more personal quality for patients." "Radiologists need to differentiate their practices by providing great local and personal services," Dr. Alderson continued. "You can't replace local and personal services with film readings performed many miles or half a continent away."

Dr. Brant-Zawadzki acknowledged that radiologists are not patient-centered

by training or culture, in the sense that they are consultants to other physicians.

"We worry about the type of equipment we have, whether our image quality is good, whether our technologists are well-trained and whether they treat the patients well," he said. "We don't, as radiologists, tend to spend much time thinking about our direct focus on the patient."

Even when the radiologist does not touch the patient directly, the process can be made more patient-centered from start to finish, said Dr. Brant-Zawadzki. This includes interacting with the patient in a courteous and professional manner, having the study done as promptly as possible and, when feasible, sending the patient out with a preliminary result, he said.



Making a practice more patient-centered means "seeing the process as if you were the patient and expecting the process to work for you as a patient," said course presenter Michael N. Brant-Zawadzki, M.D.

“It’s a very simple concept,” said Marcy Brown, R.T., director of radiology operations at Hoag Memorial Hospital and a course presenter. “Patients deserve the care that you or I would want when we get sick. Making their experience more comfortable is our number one priority.”

Brown said Hoag Memorial has implemented a “one call” concept. “When patients call in, they’re not transferred about,” she said. “The goal is obviously to get the patient in the right location at the right time, with the right prep.”

The hospital tracks every call for volume, quality and average speed to answer. In the waiting room, staff members endeavor to keep patients informed about delays. A so-called “fix it fund” is available to help address patient complaints and “secret shoppers” have been enlisted to report their experiences in seeking services.

Dr. Brant-Zawadzki and Brown said they believe reporting of test results is one of the most important areas in need of improvement. The radiology staff may know within five minutes after a test that a patient has cancer, but the patient may have to wait a week to hear the results from his or her doctor. “That must be changed,” they said.

Dr. Brant-Zawadzki added, “Given the fact that we have equipment that provides the information very quickly and efficiently, if it’s an urgent finding, the patient as well as the referring doctor should be told.”

Other options include letting the patient know the report will be in the referring physician’s hands within a few hours or that the patient can view the report online. “And if you have any questions, here is a way to contact us. Here’s an e-mail address or here’s a chat room where you can talk to the radiologist directly,” Dr. Brant-Zawadzki suggested.

Dr. Alderson presented an example of a patient-centered program developed at Scottsdale Medical Imaging in Arizona, in which radiologists meet with patients and talk with them about their radiology studies. Patients and referring physicians have responded very well to this approach, he said.

Providing such a consultative service directly to patients, Dr. Alderson



Radiologists can differentiate their practices by providing great local and personal services, said course presenter Philip O. Alderson, M.D. At left is course presenter Marcy Brown, R.T.

concluded, “will help radiologists develop a new type of relationship with their patients as well as their referring physicians. Such patient-centered approaches can only strengthen radiology’s future.” □

■ RSNA will sponsor this course, Patient-centered Radiology, at the Association of University Radiologists annual meeting March 25–29 in Seattle.

■ Note: These articles were adapted from stories that appeared in the RSNA 2007 *Daily Bulletin*. The daily newspapers from the annual meeting are available online at RSNA.org/bulletin.

Daily Bulletin

Quality Symposium Emphasizes Leadership, Teamwork to Improve Patient Care

IMPROVING patient care was also the focus of the first Quality Improvement Symposium held at RSNA 2007.

“We’ve started to recognize the critical issues and understand that the keys to fixing them are leadership and teamwork,” said presenter Charles R. Denham M.D., chair of the Texas Medical Institute of Technology (TMIT) in Austin.

Presenters offered a litany of statistics backing the need for quality improvement. According to the World Health Organization, the U.S. ranks 37th in the world in quality of care, despite healthcare expenditures nearly doubling those of other countries in the developed world. The National Patient Safety Foundation found that more than four

out of 10 American consumers report being affected by a medical error, while the Institute of Medicine has reported that 44,000 to 98,000 preventable deaths occur each year in the U.S., costing Americans \$28 billion.

Improving patient care quality is not only ethically important, but also driven by publicity and regulation, said presenters. Radiologists should use this challenge as a chance to make changes that may save money and save lives, presenters said.

Presenter Paul A. Larson, M.D., a radiologist at Radiology Associates of the Fox Valley in Oshkosh, Wisc., said radiologists



Paul A. Larson, M.D.

can contribute by tailoring exams—incorporating such factors as body size, age, comorbid conditions, vascular access and gender—and “experimenting with the status quo.”

“In radiology, there is a collapsed cycle time of impact of performance on improvement,” concluded Dr. Denham. “This presents a terrific opportunity for radiologists.”

The Quality Improvement Symposium was a project of RSNA’s Continuous Quality Improvement Initiative (CQI²). To learn more about CQI², go to RSNA.org/quality.

Image Fusion System Fast, Reliable Guide for Tumor Treatment

COMBINING ultrasound with CT and MR imaging in real time is accurate and reliable for the percutaneous ablation of hepatic, renal and adrenal malignancies, according to a new study.

“The idea was to put together the advantages of two modalities,” said Luigi Solbiati, M.D., chair of the Department of Radiology at General Hospital of Busto Arsizio in Italy. Dr. Solbiati presented “Planning, Control, and Assessment of Percutaneous Ablations with Real-Time Image Fusion” at RSNA 2007. “This method delivers the speed, real-time control and low cost of ultrasound imaging, as well as the high spatial resolution of MDCT or MR.”

Dr. Solbiati demonstrated the “Virtual Navigator” image fusion system, consisting of an ultrasound scanner with dedicated built-in hardware and software. A connection between the scanner and navigation software enables information on the ultrasound, regarding image size, to be exchanged. An electromagnetic tracking system integrated into the workstation consists of a magnetic field transmitter placed near the patient and a small electromagnetic wave receiver applied to the ultrasound probe. The position and orientation of the ultrasound probe is determined relative to the transmitter in order to generate the corresponding CT image. In the ultrasound room, CT scans are transferred to the navigation

system in DICOM format using a LAN connection or CD.

“The system can easily, quickly and accurately guide percutaneous ablation of malignancies, including difficult-to-access and moving targets,” Dr. Solbiati said. “In addition, it provides accurate and reliable intraprocedural treatment planning for the ablation of large tumors requiring multiple, precisely spaced electrode insertions to achieve complete local control.”

The study included 225 patients with 426 lesions. In 181 of the patients, 260 malignancies were considered “difficult,” with the remainder easily visible on ultrasound and categorized as controls.

Of the difficult malignancies, 231 were renal, hepatic or adrenal tumors ranging from 6 mm to 22 mm in size that were detected by contrast-enhanced multidetector CT (MDCT) or MR, but were poorly visible or undetectable on sonography. Another 29 were solitary large liver malignancies ranging in size

What was once only done with difficult mathematical calculations for every single insertion of the electrode can now be achieved with this technique.

Luigi Solbiati, M.D.

from 31 mm to 63 mm and requiring multiple electrode insertions. Patients underwent percutaneous radiofrequency ablation of lesions with cool-tip electrodes. Electrode insertion within the target lesion was monitored in real time with the fusion system. The system operator used only internal anatomical landmarks to match MDCT or MR with ultrasound imaging.



Luigi Solbiati, M.D.
General Hospital of Busto Arsizio

For the 29 large malignancies, treatment planning included lesion contouring, tumor volume calculation and generation of expected necrosis volumes inside the target mass. Precision of lesion targeting and thoroughness of treatment were assessed with contrast-enhanced MDCT or MR at 24 hours and again at three months after ablation.

Researchers found that the collimation error range registered between CT or MR and ultrasound was 3.5 mm to 9.1 mm. In the 231 small malignancies, 96.1 percent of lesions were correctly targeted, with complete ablation successful in 93.1 percent of tumors.

In the 29 large liver malignancies, two to six electrode insertions were needed for each tumor and complete ablation was achieved in 96.5 percent of lesions. In seven out of the 29 cases, the 24-hour follow-up MDCT showed that the volume of necrosis was slightly



The image fusion method delivers the speed, real-time control and low cost of ultrasound imaging, as well as the high spatial resolution of MDCT or MR, said presenter Luigi Solbiati, M.D.

■ The scientific presentation by Luigi Solbiati, M.D., was part of the Integrated Science and Practice (ISP) session “Italy Presents,” organized in cooperation with the Italian Society of Medical Radiology (SIRM) and representing the best of radiologic science in Italy. The “Italy Presents” session also included presentations on studies of colorectal carcinoma, coronary artery disease, breast cancer and carotid artery stenosis. A “Japan Presents” session is planned for RSNA 2008.

■ Note: These articles were adapted from stories that appeared in the RSNA 2007 *Daily Bulletin*. The daily newspapers from the annual meeting are available online at RSNA.org/bulletin.

Daily Bulletin

larger than the size planned with fusion imaging. No complications, major or minor, occurred in any of the cases, Dr. Solbiati said.

“What was once only done with difficult mathematical calculations for every single insertion of the electrode can now be achieved with this tech-

nique,” Dr. Solbiati said.

The real-time image fusion technique was also effective in two cases of lung lesions, adjacent to the pleura and difficult to localize, said Dr. Solbiati. “We tried the fusion system and it worked,” he said, adding that the system can be applied to other regions

as well. “It can be used not only for renal and hepatic lesions, but also for any kind of lesion in the body that can undergo ablation treatment.” □

Complications Rare Following Ultrasound- and CT-Guided Liver Biopsy, Study Finds

ANOTHER RSNA 2007 presentation detailed results of a 10-year study indicating that liver biopsy under CT or ultrasound guidance has a low overall complication rate and should be considered safe.

“We wanted to look at our complication rate for liver biopsies by radiologists, as opposed to those biopsies done in surgery or by a hepatologist without imaging,” said presenter Diane Levis, a certified physician assistant in interventional radiology at Massachusetts General Hospital (MGH).

Researchers reviewed 10 years worth of medical records at MGH to determine the nature, treatment and outcomes of complications. Of 3,559 biopsies, 1,637 were focal and 1,922 were nonfocal. Complications were categorized using the Society of Interventional Radiology criteria of minor, major and death. Minor complications indicated there was no intervention needed



Diane Levis, P.A.-C

or only overnight admission for observation was required. Major complications required therapy, greater than a 48-hour admission or prolonged hospitalization.

“The outcome of analysis showed 13 minor complications, 17 major and two deaths,” said Levis. Of patients with major complications, 12 of the 17 were eventually discharged, she said.

The other five patients had malignant biopsy results and died within 30 days, said Levis, noting those patients were severely ill and biopsy may have worsened underlying comorbidities. Two deaths were directly attributed to focal biopsy—one from gall bladder injury and the other from myocardial infarction.

“Of the 32 patients with complications, 11 of them underwent nonfocal biopsy and 21 underwent focal biopsy, showing focal biopsies to be at higher risk for complication with the most common complication being bleeding,” said Levis.

The overall risk for bleeding was still very low and the procedure found to be safe, Levis said. “There is already literature stating that image-guided liver biopsy under CT or ultrasound guidance is safe, but this study proves that it is,” she said.

Algorithm Speeds Victim ID through Dental Records

A JAPANESE dentist's personal connection to a plane crash 22 years ago has led to a breakthrough in computer-aided identification of human remains.

In August 1985, Mizuo Shinohara, D.D.S., Ph.D., a dentist and forensic scientist, was one of more than 2,800 doctors, dentists and scientists called to the scene of the horrific Japan Airlines Flight 123 crash on Mount Takamagahara in Japan's Gunma Prefecture. Selecting from 215,150 possible pairs of dental radiographs, Dr. Shinohara and others worked for more than three months to identify the burned remains of 520 people. The pain of victims' families was compounded by a Japanese Buddhist tradition calling for the burial or cremation of human remains within a week to 10 days.

Dr. Shinohara's daughter, Eiko Kosuge, D.D.S., Ph.D., remembers her father's efforts at the crash site. "His stories from that time, plus stories of grieving families anxiously waiting for loved ones, inspired me to automate the process," said Dr. Kosuge, who presented her system at RSNA 2007.

"Manual dental identification works fine when the number of victims is low—for example, a house fire or single auto accident," said Dr. Kosuge, of the Shinohara Dental Clinic and the Department of Oral and Maxillofacial Radiology at the Kanagawa Dental College. "However, as the number of victims increases, the time required to identify the bodies increases exponentially and the risk of identification error increases sharply as well."

To automate the process, Dr.

Kosuge had to overcome technical obstacles such as the lack of consistency of angle when dental X-rays are taken. Separate radiographs of the same tooth have distortions of rotation, translation and scale, altering the tooth's appearance.

A breakthrough came with the help of Koichi Ito, Ph.D., an assistant professor in the Graduate School of Information Sciences at Tohoku University. Dr. Ito realized that the phase-only correlation (POC) algorithm used to identify fingerprints and align satellite images could be employed to eliminate distortions when comparing dental records.

The POC matching system evaluates two images, assigns them a matching score and creates a candidate list of possible matches for each X-ray. By eliminating about 95 percent of all possible matches and offering a list of the three top candidates, Dr. Kosuge said the system "will cut the time required to produce matches to about 3.6 seconds per pair and dramatically cut the workload of forensic scientists."

For example, in the case of the 1985 Japan Airlines crash, her father and his co-workers would have only had to evaluate around 10,000 possible matches instead of more than 200,000.

Recently testing the POC matching system using dental records from 60 people, Dr. Kosuge and her team achieved 100 percent matching.

The team was also excited to discover that they were still able to produce matches even in cases of small



Eiko Kosuge, D.D.S., Ph.D.
Shinohara Dental Clinic

changes in tooth structures. "This is important because victims will often experience some sort of dental work or damage after their last X-ray," said Dr. Kosuge.

Dr. Kosuge said that for her, it all comes back to alleviating the suffering of the victims' families. "Perhaps the most important advancement is cultural in nature," she said. "If our system had been used in the Japan Airlines crash, the remains of loved ones could have returned to families in days instead of months." □

Note: This article was adapted from a story that appeared in the RSNA 2007 *Daily Bulletin*. The daily newspapers from the annual meeting are available online at RSNA.org/bulletin.

[The automated system] will ... dramatically cut the workload of forensic scientists.

Eiko Kosuge, D.D.S., Ph.D.



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Gordon T. Lawless, M.D.
Christina A. Lebedis, M.D.
Betty Lee, M.D.
S.C. Lee, M.D.
Henri E. Lemmers, M.D.
Julie Goodman, Ph.D. &
Michael H. Lev, M.D.
Michael Licata, M.D.
Christopher K. Lin, M.D.
Rudolph Y. Lin, M.D.
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Lisa Koe & Jeffrey D. Plew, M.B.B.S.
Michelle Dombrowski &
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Mary Ellen & Donald A. Podoloff, M.D.
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Michele C. & James G. Ravenel, M.D.
Shawn D. Reesman, M.D., R.T. (R)
Shawn S. Reinhart, M.D.
John W. Renner, M.D.

Marilyn T. Riederer, Ph.D. &
Stephen J. Riederer, Ph.D.
John P. Roberson, M.D.
Ronald P. Robinson, M.D.
Francis X. Roche, M.D.
Dean J. Rodman, M.D.
Justo Rodriguez, M.D.
Barry J. Rosen, D.O.
George I. Rosenberg, M.D.
Ivan Roubal, M.D.
Scott J. Rowen, M.D.
Michael B. Ruff, M.D.
David J. Ryder, M.D.
Najmus Saqib, M.D.
Francesco Sardanelli, M.D.
Lotty Andrade &
German G. Abdo Sarras, M.D.
Doris & Robert E. Schaefer, M.D.
Shawn Del & Jeffrey T. Seabourn, M.D.
Polly L. & Joachim F. Seeger, M.D.
Betsy & Carlton C. Sexton, M.D.
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Michael E. Shahan, M.D.
Karun V. Sharma, M.D., Ph.D.
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Swati & Dwarkanath S. Shembde, M.D.
Sadashiv S. Shenoy, M.D.
Melinda J. & Edward Q. Shepherd, M.D.
Andrea J. Rothe, M.D. & Michael Shevach
Leigh S. Shuman, M.D.
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Bonnie R. Smith, M.D. & Forrest M. Smith
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Diane C. Strollo, M.D. &
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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.

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.

Roentgen Resident/Fellow Research Award

Deadline for nominations—April 1

THE RSNA Research & Education Foundation seeks nominations for the Roentgen Resident/Fellow Research award, designed to recognize and encourage outstanding residents and fellows in radiologic research. Each participating North American residency program will receive an award plaque with space to display a brass nameplate for each year's recipient. The Foundation will also provide a personalized crystal award for the department to present to the selected resident or fellow.

The residency program director or

the department chair should identify one individual annually based on the following:

- Presentations of scientific papers at regional or national meetings
- Publication of scientific papers in peer-reviewed journals
- Receipt of a research grant or contributions to the success of a research program within the department
- Other research activities

Every resident/fellow in an Accreditation Council for Graduate Medical Education-approved program of radi-



ology, radiation oncology or nuclear medicine is eligible. Nominations are limited to one resident or fellow per department per year.

Download the nomination form and view the complete list of 2007 award recipients at RSNA.org/Foundation/RoentgenResidentFellow_ResearchAward.cfm.

Radiology in Public Focus

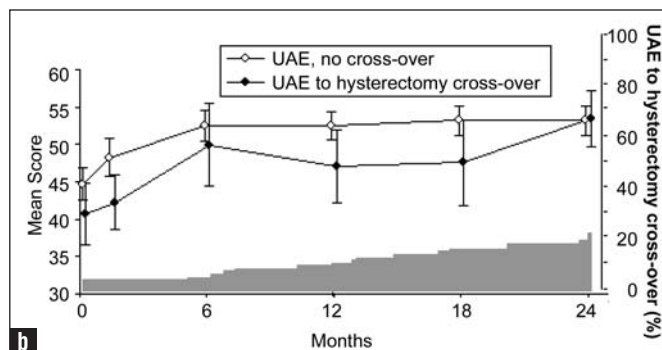
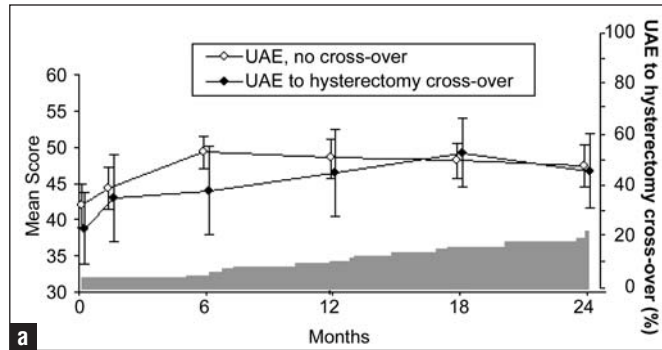
A press release has been sent to the medical news media for the following article appearing in the March issue of *Radiology* (RSNA.org/radiology):

Symptomatic Uterine Fibroids: Treatment with Uterine Artery Embolization or Hysterectomy — Results from the Randomized Clinical Embolization versus Hysterectomy (EMMY) Trial

UTERINE artery embolization (UAE) significantly improves quality of life for patients with uterine fibroids and is a good alternative to hysterectomy, researchers have found.

In a follow-up survey of 177 women who underwent either UAE or hysterectomy to treat symptomatic uterine fibroids, Wouter J.K. Hehenkamp, M.D., of the Academic Medical Centre Amsterdam, and colleagues found both treatments resulted in significant improvement of health-related quality of life.

The researchers evaluated factors including general mental and physical health, urinary dysfunction, defecation dysfunction and overall patient satisfaction up to 2 years following either procedure. They found that women who underwent UAE had significantly better survey scores at 6 weeks and women



Graphs show SF-36 MCS (a) and PCS (b) scores.

Physical health was worse in patients who required secondary hysterectomy during follow-up compared with that in patients who did not require secondary hysterectomy. This was not the case for mental health.

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who underwent hysterectomy were significantly more satisfied at 24 weeks. Employed patients demonstrated a greater overall improvement in physical health than unemployed patients.

“Since UAE and hysterectomy are interventions which are very different from each other, comparison can be difficult,” Dr. Hehenkamp and colleagues

write. “One measure which is very suitable for the comparison of both treatments is health-related quality of life.” UAE is a good alternative to hysterectomy for treating symptomatic uterine fibroids, they concluded, because of its shorter recovery time and fewer long-term risks.

Media Coverage of *Radiology*

In January, media outlets carried 156 news stories generated by articles appearing in *Radiology* and studies presented at the annual meeting. These stories reached an estimated 18 million people.

Print coverage included placements in *The Guardian* (London, U.K.), *Fidelity+*, *Pensacola News Journal*, *Diagnostic Imaging*, *RT Image*

and *Radiology Today*. Broadcast coverage included placements on KCBS-TV and KCAL-TV (Los Angeles), WRAL-TV (Raleigh, N.C.), KYW-TV (Philadelphia), WJZ-TV (Baltimore) and WTVF-TV (Nashville, Tenn.). Web placements included Red Orbit, *Auntminnie.com*, *Healthimaging.com* and *Medinews.com*.



Continued on next page

Journal Highlights

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

Fleischner Society: Glossary of Terms for Thoracic Imaging

A NEW pictorial glossary of terms for thoracic imaging compiled by members of the Fleischner Society appears in the March issue of *Radiology* (RSNA.org/radiology). The first-of-its-kind pictorial glossary—which replaces glossaries published in 1984 and 1996 for thoracic radiography and CT, respectively—has the potential to reduce variability in reporting and facilitate better research.

On the writing committee for the glossary were David M. Hansell, M.D., F.R.C.P., F.R.C.R., Alexander A. Bankier, M.D., Heber MacMahon, M.B., B.Ch., B.A.O., Theresa C. McLoud, M.D., Nestor L. Müller, M.D., Ph.D., and Jacques Remy, M.D. The committee notes that the impetus to combine and update the previous versions came from the recognition that with recent developments in imaging, new words have arrived and others have become obsolete and the meaning of some terms has changed.

The latest glossary is not intended to be exhaustive, the committee adds, but to concentrate on terms whose meaning may be problematic.

In addition to adding and pictorial examples (chest radiographs and CT scans) for most terms, the latest glossary adds brief descriptions of idiopathic interstitial pneumonias (IIPs). The committee members note that their decision to include IIP vignettes was based on the perception that, despite recent scrutiny and reclassification, IIPs remain a confusing group of diseases.

“We hope that this glossary of terms will be helpful and it is presented in the spirit of the sentiment of Edward J. Huth that ‘scientific writing calls for precision as much in naming things and concepts as in presenting data,’” the committee writes.



A magnified chest radiograph shows miliary pattern.

On chest radiographs, the miliary pattern consists of profuse tiny, discrete, rounded pulmonary opacities (≤ 3 mm in diameter) that are generally uniform in size and diffusely distributed throughout the lungs.

Radiology 2008;246:697–722 © RSNA, 2008. All rights reserved. Printed with permission.

Radiology

Author Data Center Launched

The Author Data Center for *Radiology* and *RadioGraphics* has gone live. Each corresponding author will get an alert pointing them to his or her article page, where they can sign up for citation alerts and track the downloads and citations of the article.

Radiology in Public Focus

Continued from previous page

March Public Information Activities Focus on Colorectal Cancer

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

The “60-Second Checkup” radio segments in March also focused on colorectal cancer topics, including the use of virtual colonoscopy as a screening tool. “60-Second Checkup” segments are brief interviews with radiology

experts that are distributed to participating radio stations in the U.S. and Canada.

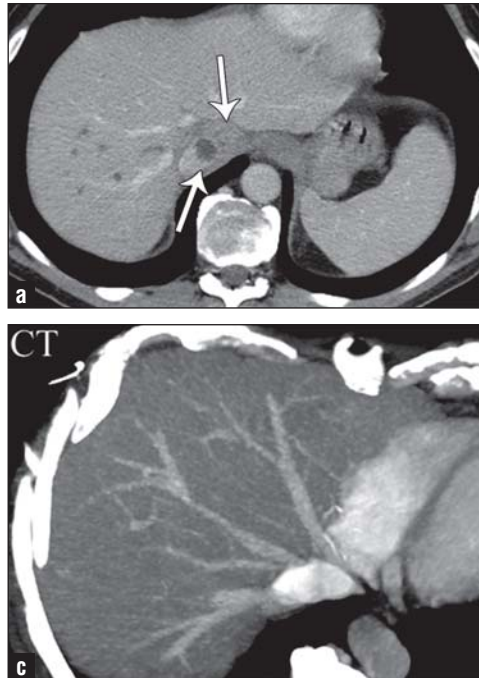
Vascular and Biliary Variants in the Liver: Implications for Liver Surgery

MODERN noninvasive diagnostic imaging techniques such as multidetector CT (MDCT) and MR imaging have replaced conventional angiography and endoscopic cholangiography for accurate preoperative evaluation of the hepatic vascular and biliary anatomy, allowing the best therapeutic approach with reduction of complications and identification of the anatomy requiring special attention at surgery.

RadioGraphics

In an article in the March-April issue of *RadioGraphics* (RSNA.org/radiographics), Onofrio A. Catalano, M.D., of Massachusetts General Hospital, and colleagues:

- Discuss the relevant surgical steps in living donor liver transplantation, hepatic tumorectomy and placement of hepatic intraarterial pumps
- Identify the normal and variant hepatic arterial, hepatic venous, portal venous and bile duct anatomy
- Describe the variant hepatic vascular and biliary anatomy relevant to hepatic surgery



Cholangiocarcinoma in a 53-year-old man. Axial (a) and coronal (b) images from preoperative multidetector CT angiography show a tumor (arrows) that touches the IVC. MIP image (c) of the hepatic venous confluence and hepatic arteries shows lack of involvement of the critical vasculature.

RadioGraphics 2008;28:359-378 © RSNA, 2008. All rights reserved. Printed with permission.

“MDCT and MR imaging with MR cholangiopancreatography, with image postprocessing, provide excellent delineation of hepatic vascular and biliary anatomy relevant to surgery,” the authors conclude. “They help determine the best hepatectomy plane to avoid transecting major venous branches and identify patients in whom additional surgical steps will be required. Preoper-

This article meets the criteria for 1.0 AMA PRA Category 1 Credit. CME is available online only.

ative knowledge of hepatic vascular and biliary anatomy is mandatory for surgical planning and to help reduce postoperative complications in both the donor and the recipient.”

RSNA MEMBER BENEFITS

Working For You

Translated RSNA Member Benefit Information Available

Information about RSNA membership benefits is now available in eight languages. Go to RSNA.org and choose Membership Benefits from the Membership dropdown menu to find informational flyers in Chinese, French, German, Italian, Japanese, Korean and Spanish, as well as English.



Working For You

RSNA Committees

RSNA News concludes its series highlighting the work of RSNA's volunteer committees with a look at the Committee on International Relations and Education (CIRE).

Committee on International Relations and Education (CIRE)

WITH PROGRAMS for international education, research and outreach, the RSNA Committee on International Relations and Education (CIRE) aims to break down borders and teach international radiologists, particularly those in developing nations, skills not otherwise readily available to them.

"The world is becoming increasingly borderless with respect to radiology, and this will no doubt have an impact on radiology practice and innovation throughout the world," said George A. Taylor, M.D., CIRE chair.

CIRE oversees programs—including the Introduction to Research for International Young Academics and the Derek Harwood-Nash International Fellowship—that encourage international radiologists to pursue academic careers. The committee also offers free RSNA

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COMMITTEE
PROFILE

journal subscriptions to international societies, medical libraries and teaching institutions through its Education Materials and Journal Award

Program.

CIRE's International Visiting Professor Program sends small teams of North

American professors to lecture at national radiology society meetings and visit with radiology residency training programs at selected host institutions in developing nations.

CIRE presents a course at the RSNA annual meeting. The 2007 course, "Extreme Radiology: The Practice of Radiology in Difficult and Hostile Conditions," was well attended and well received, said Dr. Taylor. The 2008 CIRE course will be "Worldwide Radiology: The Migration of Physicians,



George A. Taylor, M.D.

Images and Innovation."

The committee also has launched the International Radiology Outreach Resource Web portal. Accessible from the *RSNA.org* home page, the page provides information about programs impacting radiology education around the world. More information

appears on Page 25.

One of the key ways in which radiology is becoming international is electronic learning resources, said Dr. Taylor. "Well developed and scalable curricula for learning radiology are being created and can be used by the very advanced and the developing world," he said.

For information about volunteering for RSNA committees, go to RSNA.org/About/whoswho/committees/.

RSNA Travels to Italy

The next stop for the RSNA informational booth will be the annual meeting of the Italian Society of Medical Radiology in Rome, May 23–27. RSNA representatives will offer information on membership benefits and RSNA 2008, as well as RSNA journals and education and research programs. RSNA members planning on attending the Italian meeting are invited to stop by and bring a colleague to learn more about RSNA membership.

RSNA will also showcase its



journals at the annual meetings of the American College of Cardiology, March 30–April 1, and Medical Library Association, May 16–21, and partici-

pate in the American Medical Association Medical Specialty Showcase in June. All meetings are in Chicago.

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

RSNA Introduction to Research for International Young Academics

Deadline for Nominations—April 15

The RSNA Introduction to Research for International Young Academics program encourages young radiologists from countries outside the U.S. and Canada to pursue careers in academic radiology. The program consists of a special seminar held during the RSNA annual meeting.



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

RSNA-Sponsored Course at the International Congress of Radiology (ICR)

June 5–8 • Palais des Congrès, Marrakesh, Morocco

"Highlights of Diagnostic Imaging in the U.S. and Common Pathologies in America" is the refresher course RSNA will offer at the International Congress of Radiology (ICR). Moderated by RSNA President Theresa C. McLoud, M.D., the course will feature these topics and speakers:

Advances in Molecular Imaging—Umar Mahmood, M.D., Ph.D., Massachusetts General Hospital Center for Molecular Imaging Research, Boston

3D Imaging—Geoffrey D. Rubin, M.D., Stanford University School of Medicine Department of Radiology, Stanford, Calif.

Cardiac Disease: New Innovations in Imaging—Suhny Abbara, M.D., Massachusetts General Hospital Department of Radiology, Boston

Lung Cancer Screening with Low Dose CT—Jonathan Goldin, M.D., University of California, Los Angeles School of Medicine

More information about ICR is available at www.icr2008.org.

RSNA Clinical Trials Methodology Workshop

January 10–16, 2009 • Hyatt Regency Scottsdale Resort and Spa at Gainey Ranch • Applications due June 5

Over the course of this 6½-day workshop, each trainee will be expected to develop a protocol for a clinical study, ready to include in an application for external funding. Participants will learn how to develop protocols for the clinical evaluation of imaging modalities. A dynamic and experienced faculty will cover topics including:

- Principles of clinical study design
- Statistical methods for imaging studies
- Design and conduct of multi-institutional studies
- Sponsorship and economics of imaging trials
- Regulatory processes



Applicants will undergo a competitive selection process for entrance into the course. Once admitted, trainees will participate in advance preparation, didactic sessions, one-on-one mentoring, small discussion sessions, self study and individual protocol development. Familiarity with basic concepts and techniques of statistics and study design is required of all applicants.

Apply for the Clinical Trials Methodology Workshop at RSNA.org/CT2009. For more information, contact Fiona Miller at 1-630-590-7741 or fmiller@rsna.org.

Travel Awards for Young Investigators in Molecular Imaging

Deadline to submit abstracts for RSNA 2008—April 15

RSNA will assist with travel expenses for up to 15 young investigators whose molecular imaging abstracts are accepted for presentation at RSNA 2008.

To be eligible, an abstract presenter or poster exhibitor must have been awarded his or her doctoral degree no more than seven years prior to the time of abstract submission. Only young investigators with accepted abstracts in the area of molecular imaging will be considered. To claim the travel award, the recipient must personally attend RSNA 2008 to present his or her work.

Notifications of abstract acceptance and travel awards will be made simultaneously. For more information about the travel award program, go to RSNA.org/Research/molecular. For more information on submitting an abstract for RSNA 2008, go to RSNA.org/abstracts.

News about RSNA 2008

Submit Abstracts for RSNA 2008

THE ONLINE system to submit abstracts for RSNA 2008 is now open. **The submission deadline is 12:00 p.m. Central Time on April 15, 2008.** Abstracts are required for scientific papers, scientific posters, education exhibits and a new category, applied science exhibits. Applied science exhibits include submissions that demonstrate non-hypothesis-based work not

yet generally accepted enough in practice to be considered an education exhibit.

To submit an abstract online, go to RSNA.org/abstracts. For more information about the abstract submission process, contact the RSNA Program Services Department at 1-877-776-2227 within the U.S. or 1-630-590-7774 outside the U.S.



RSNA2008
Personal Learning in the
Global Community



INTERNATIONAL VISITORS

Start Visa Process Now

Personalized invitation letters are available by request at RSNA2008.RSNA.org. Click International Visitors. This section of the annual meeting Web site also includes important information about the visa application process. Visa applicants are advised to apply as soon as they decide to travel to the U.S. and at least 3 to 4 months in advance of their travel date. It is recommended that international annual meeting attendees start the visa process now.

A newly launched Web site, www.unitedstatesvisas.gov, is a consolidated source of visa information. Information is also available at travel.state.gov/visa and nationalacademies.org/visas.



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

April 15	Deadline for abstract submission
April 21	Registration and housing open for RSNA and AAPM members
May 19	General registration and housing open
June 30	Course enrollment opens
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

Exhibitor News

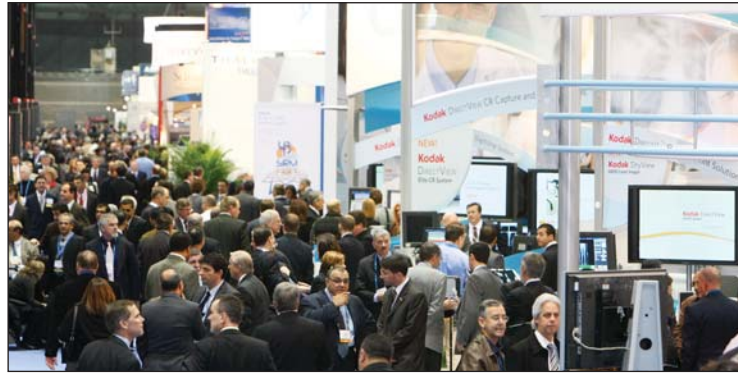
RSNA 2007 Exhibitor List Available Online

Information about companies that exhibited at RSNA 2007 remains online at RSNA.org/showcase. This database of over 700 companies is searchable alphabetically and by various product categories. The exhibitor list is an excellent resource to view and compare companies when searching for new equipment and services.



New Technical Exhibits Layout Planned for RSNA 2008

At RSNA 2008, the Technical Exhibition will include Hall D (Lake-side Center) as well as Hall A (South Building) and Hall B (North Building). Hall D, which formerly housed scientific posters, education exhibits and other education content, will move down one floor to Hall E across from the Arie Crown Theater. The new arrangement allows RSNA to accommodate the growing number of exhibiting companies while offering more space to current exhibitors. In addition, large food service outlets will be located in all three exhibit halls.



MEETING WATCH RSNA HIGHLIGHTS™ 2008

RSNA Highlights™ 2008: Meeting Moments

RSNA Highlights™ 2008: Clinical Issues™ 2008: Clinical Issues was held February 18–20 in Orlando, Fla., at the Ritz-Carlton/JW Marriott Orlando, Grande Lakes. Refresher courses focusing on thoracic radiology, cardiac imaging, head and neck radiology and breast imaging were offered along with hot topics sessions and electronic education exhibits from RSNA 2007. James A. Brink, M.D., (at podium), is the RSNA Refresher Course Committee chair and oversaw RSNA Highlights.



Product News

NEW PRODUCT

Peripheral Embolization System

TERUMO Interventional Systems (www.terumo.com) has introduced the AZUR Peripheral HydroCoil Embolization System for the occlusion of blood vessels, vascular malformations and aneurysms. AZUR is the only peripheral

platinum coil embolization system with a hydrogel coating that expands when introduced into the bloodstream, delivering greater filling and mechanical occlusion with fewer coils.

The hydrogel coating undergoes limited expansion within three minutes and fully expands within 20 minutes. AZUR delivers nearly five times more filling volume for a 0.018" coil and four times more filling volume for a 0.035" coil



when compared to platinum coils of the same size.

AZUR is the only peripheral embolization system to offer a truly detachable system, enabling physicians to detach coils in less than a second and at the push of a button. Offering the capability to withdraw and reposition the coil until the coil is securely placed, the system minimizes the risk of non-target embolization and coil migration.

FDA CLEARANCE

Visual Ultrasound System

Escalon Medical Corp. (www.escalonmed.com) has received clearance from the U.S. Food and Drug Administration (FDA) to market the VasuView™ Visual Ultrasound System for use in assisted vascular access procedures.

VasuView utilizes a tablet PC with software built on the Microsoft® Windows® XP platform. The probe contains the ultrasound circuitry and is connected via USB. The system also includes a large image display and touchscreen, as well as scan operation controls on the probe to allow maintenance of the sterile field. VasuView provides depth visualization to 6 cm with excellent resolution and accuracy and features software tools such as calipers for measuring vessel size.

VasuView can be mounted on a stand, used on a tabletop at the bedside or placed into a carrying case for field use.

FDA CLEARANCE

Spot Scanning Irradiation Technology

Hitachi America (www.hitachi.us) has obtained FDA clearance for the spot scanning irradiation technology of its PROBEAT® proton beam therapy system for application at the M.D. Anderson Cancer Center in Houston. Hitachi will be the first to commercialize proton beam therapy with spot scanning technology.

PROBEAT originally used double scatterer technology with two scatterers to expand the proton beam to cover an entire tumor profile. While scattering irradiation technology is effective for many types of tumors, limitations exist in treating tumors depending upon the target geometry.

The new spot scanning technology utilizes an unperturbed narrow beam that is smaller than the typical target cross section and regulated so that prescribed dose spots can be positioned very precisely within a tumor volume.

NEW PRODUCT

Multi-lumen Balloon Catheter

SenoRx Inc. (www.senorx.com) has launched the Contura™ multi-lumen balloon (MLB) catheter for delivering brachytherapy to the surgical margins following lumpectomy for breast cancer. Contura is one of a new class of devices designed to reduce radiation treatment time from six to eight weeks to just five days in patients eligible for treatment. Contura uses vacuum suction to remove excess seroma and air, enhancing conformance of irregularly shaped lumpectomy cavity walls to the balloon surface.

The result is delivery of precise radiation dosing through multiple radiation source lumens. Contura may be used in patients who are candidates for balloon therapy but are excluded due to the location of the lesion or their breast size.



RSNA.org

International Radiology Outreach Resources

THE NEW International Radiology Outreach Resources (IROR) Web page at *RSNA.org* is a developing central repository for information about international educational and outreach efforts by RSNA and other radiology societies, as well as medical and relief agencies throughout the globe. Access the IROR page in the International dropdown menu at *RSNA.org* or directly at *RSNA.org/International/IROR.cfm*.

- 1 Learn more about RSNA outreach programs such as the International Visiting Professor Program and research programs like the Derek Harwood-Nash International Fellowship.
- 2 Plan for meetings hosted by international organizations like the International Society of Radiology and International Society of Radiographers and Radiological Technologists.
- 3 Find out about international resources available from agencies such as the National Cancer Institute.
- 4 Discover teleradiology and international education programs offered by societies like the Royal College of Radiologists and Society for Pediatric Radiology.
- 5 Explore international teaching resources offered by various learning institutions.
- 6 Access the Web pages of international healthcare organizations like the World Health Organization and Doctors Without Borders.

For more information about adding an organization and program to the IROR page, contact Fiona Miller at *fmliller@rsna.org* or 1-630-590-7741.

The screenshot shows the IROR website interface. At the top, there's a navigation bar with links like 'HOME', 'SITE MAP', 'FAQ', and 'LOGIN'. Below that is a 'Welcome' section with a globe graphic and introductory text. The main content area features a table titled 'International Radiology Outreach Resources' with columns for 'Organization and Web Site' and 'Program Name and Description'. The table lists various programs such as the International Visiting Professor Program, Derek Harwood-Nash International Fellowship, and the International Society of Radiology (ISR). To the right of the table, there are several smaller boxes with additional information, including 'Program Spotlight', 'Article Spotlight', and 'PHD TO GALLERY'. At the bottom of the page, there are sections for 'Teaching Resources' and 'Other Resources'.

Organization and Web Site	Program Name and Description
RSNA International Visiting Professor Program http://www.rsna.org/International/CRE/ivpp.cfm	International Visiting Professor Program This program supports...
RSNA Derek Harwood-Nash International Fellowship http://www.rsna.org/International/CRE/dhnash.cfm	Derek Harwood-Nash International Fellowship: This 6-12 week fellowship is...
RSNA Introduction to Research for International Young Academics http://www.rsna.org/International/CRE/iyaseminar.cfm	Introduction to Research for International Young Academics: (Developed to encourage young...
RSNA Education Materials and Journal Award Program http://www.rsna.org/International/CRE/award.cfm	Education Materials and Journal Award Program: Radiology teaching institutions, including medical libraries, in developing...
The International Society of Radiology (ISR) http://www.isradiology.org/	ISR hosted the first International Virtual Congress of Radiology from December 3 - 21.
International Society of Radiographers and Radiological Technologists (ISRRIT) http://www.isrrit.org	ISRRIT is the only society representing radiographers and medical radiation.
The National Cancer Institute (NCI) http://asia.cancer.gov/programs/funding.shtml (Provides information regarding international funding opportunities) http://www.nci.nih.gov/nci-international-portal (The National Cancer Institute's international portal.)	NCI Coordinates the National Cancer Program, which conducts and supports research, training, health information dissemination, and other activities with...
The Royal College of Radiologists (RCR) http://www.rcr.ac.uk	RCR offers various awards and traveling fellowships, such as the Robus Williams Fellowship, Distinguished...
Society for Pediatric Radiology (SPR) http://www.pedrad.org/display.cfm?cn=7&no=1	Teleradiology interface between hospitals within developing nations and the SPR with the purpose...
Teaching Resources	
International Atomic Energy Agency (IAEA) provides free online radiation protection training material in the areas of diagnostic and interventional radiology, radiotherapy, nuclear medicine and prevention of accidental exposure in radiotherapy. Link to free material	
MyPACS.net: A free service provided to the international community, funded in part by the National Institutes of Health for training and decision support. http://www.mypacs.net	
McGill University, Canada: Basic plain film and cross-sectional anatomy for students. http://projects.mcgill.ca/radiology/	
Harvard University: Open Courseware - Core: Computing in Radiology http://ocw.mit.edu/harvard-educator/06view.asp?course=6.0060M/2E2	
Albert Einstein Medical Center: Radiology teaching resources and tutorials, cases aimed at medical students and radiology residents-in-training with a very good section for students. http://www.leamimg.radiology.com/	
University of Virginia: Online teaching resource intended for residents of radiology http://www.med.ed.virginia.edu/courses/rad/	
Other Resources	
American Red Cross http://www.redcross.org/	Web Site
FAIMER: Foundation for Advancement of International Medical Education and Research http://www.faimer.org/	
Library of Congress Portals to the World http://www.loc.gov/infomaterial/portals.html	
Radiology Outreach Foundation http://www.radiologyoutreach.org/	
World Health Organization http://www.who.int/en/	
Doctors Without Borders http://www.doctorswithoutborders.org/	
Health Volunteers Overseas https://www.hvosts.org/index2.htm	

Your online links to RSNA

RSNA.org

- My RSNA™
RSNA.org – click My RSNA
- Radiology Online
RSNA.org/radiology
- RadioGraphics Online
RSNA.org/radiographics
- RSNA News
rsnanews.org
- Membership Applications
RSNA.org/mbrapp
- RSNA Membership Directory
RSNA.org/directory
- Education Portal
RSNA.org/education
- RSNA CME Credit Repository
RSNA.org/cme
- CME Gateway
CMEgateway.org
- NEW**
International Radiology Outreach Resources
RSNA.org/International/IROR.cfm
- InterOrganizational Research Council
radresearch.org
- RSNA Medical Imaging Resource Center
RSNA.org/mirc
- RSNA Career Connection
RSNA.org/career
- RadiologyInfo™
RSNA-ACR patient information Web site *radiologyinfo.org*
- RSNA Press Releases
RSNA.org/media
- RSNA Research & Education (R&E) Foundation
Make a Donation
RSNA.org/donate
- Silver Anniversary Campaign
RSNA.org/campaign
- Community of Science
RSNA.org/cos
- CQI Initiative
RSNA.org/quality
- RSNA 2008
RSNA2008.RSNA.org
- Abstract Submission for RSNA 2008
RSNA.org/abstracts

Medical Meetings

April – June 2008

MARCH 30–APRIL 4

Society of Computed Body Tomography and Magnetic Resonance (SCBT-MR), 31st Annual Course, Charleston Place Hotel, South Carolina • www.scbtmr.org

APRIL 4–6

Japan Radiological Society (JRS), 67th Annual Meeting, Pacifico Yokohama, Japan
• www.secretariat.ne.jp/jrs67/english/invitation_eng.html

APRIL 13–18

American Roentgen Ray Society (ARRS), 108th Annual Meeting, Marriott Wardman Park Hotel, Washington
• www.rrs.org

APRIL 14–15

National Council on Radiation Protection and Measurements (NCRP), 44th Annual Meeting: Low Dose and Low Dose-Rate Radiation Effects and Models, Bethesda North Marriott Hotel & Conference Center, Maryland • www.ncrponline.org

APRIL 30–MAY 3

German Radiology Society, 89th German Radiology Congress, Messe Berlin • www.roentgenkongress.de

MAY 1–4

Canadian Association of Radiologists (CAR), 71st Annual Scientific Meeting, Ottawa Marriott Hotel, Ontario • www.car.ca

MAY 1–4

38th São Paulo Radiology Meeting, Transamérica Expo Center, São Paulo, Brazil • www.spr.org.br

MAY 3–6

American College of Medical Physics (ACMP) 25th Annual Meeting, Fairmont Olympic Hotel, Seattle • www.acmp.org

MAY 3–9

International Society for Magnetic Resonance in Medicine (ISMRM), 16th Scientific Meeting and Exhibition, Toronto
• www.ismrm.org

MAY 4–6

2008 World Congress of Brachytherapy, Marriott Copley Place, Boston • www.americanbrachytherapy.org

MAY 4–7

Radiology Business Management Association (RBMA), 2008 Radiology Summit, Las Vegas Hilton • www.rbma.org

MAY 6–10

Society for Pediatric Radiology (SPR), Annual Meeting, Fairmont Scottsdale Princess, Arizona • www.pedrad.org

MAY 15–18

Society for Imaging Informatics in Medicine (SIIM), Annual Meeting, Washington State Convention & Trade Center, Seattle
• www.siim2008.org

MAY 17–22

American College of Radiology (ACR), Annual Meeting and Chapter Leadership Conference 2008, Hilton Washington
• www.acr.org

MAY 23–26

Spanish Society of Radiology, 29th Annual Congress, Barceló Renacimiento Hotel, Seville • www.seram2008.com

MAY 23–27 VISIT THE RSNA BOOTH

Italian Society of Medical Radiology, 43rd Annual Congress, New Rome Fair Centre • www.congresso.sirm.org

MAY 31–JUNE 5

American Society of Neuroradiology (ASNR), 46th Annual Meeting, Ernest N. Morial Convention Center, New Orleans
• www.asnr.org/2008

JUNE 5–8

International Society of Radiology (ISR), 25th International Congress of Radiology, Palais des Congrès, Marrakesh, Morocco
• www.icr2008.org

JUNE 10–13

European Society of Gastrointestinal and Abdominal Radiology (ESGAR), 19th Annual Meeting, Istanbul Convention & Exhibition Center, Turkey • www.esgar.org

NOVEMBER 30–DECEMBER 5

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

RSNANews

RSNA News
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