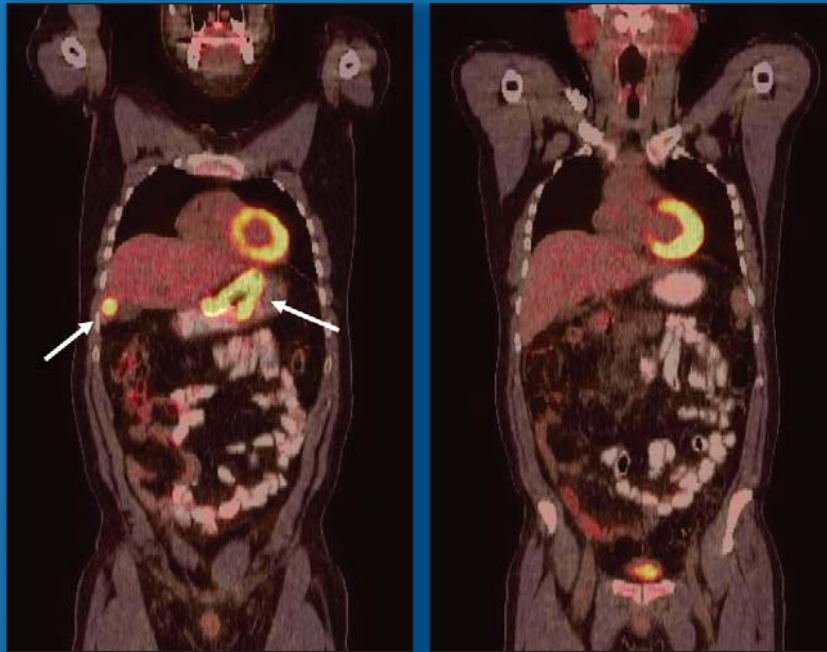


# RSNA *News*



Images courtesy of David W. Townsend, Ph.D., University of Tennessee Medical Center.

## Imaging Critical as Biomarkers Drive Personalized Medicine

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- PACS Reaches Near Saturation in Healthcare Market
- Radiology Resident Debt, Board Exam Timing Questioned
- PAD Treatment Safe for Arteries Below the Knee
- Chicago Events and Attractions Sure to Please During RSNA 2007

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**RSNA News**

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## RSNA Editorial Fellows Chosen

RSNA has named **Johannes T. Heverhagen, M.D., Ph.D.**, of Philipps University Hospital in Marburg, Germany, as the 2007 William R. Eyler Editorial Fellow; and **Christopher T. Whitlow, M.D., Ph.D.**, of the Diagnostic Radiology Residency Program at the Wake Forest University School of Medicine in Winston-Salem, N.C., as the Trainee Editorial Fellow.

Dr. Heverhagen is also a past recipient of RSNA's Research Trainee Award (2003) and has received the *Radiology* Editor's Recognition Award in 2004, 2005 and 2006.

Both fellows will work closely with *Radiology* Editor Anthony V. Proto, M.D., in Richmond, Va., and *RadioGraphics* editor William W. Olmsted,

M.D., in Bethesda, Md. The Eyler fellowship lasts for one month and the trainee fellowship lasts for one week. Each fellow will also visit RSNA Headquarters in Oak Brook, Ill., and meet with members of RSNA's Publications and Communications Division. The Eyler Fellow spends the final week of the fellowship working with the RSNA editorial team at RSNA 2007.

Dr. Heverhagen said he looks forward to the experience as an opportunity to share specialized knowledge with others in the field. "I anticipate that this outstanding program will help me gain more insight into an editorial process unknown to most authors, reviewers and readers," he says. "This



**Johannes T. Heverhagen, M.D., Ph.D.**



**Christopher T. Whitlow, M.D., Ph.D.**

will enable me to provide better service to *Radiology* and the journals I am reviewing, and to pass that knowledge on to colleagues in Europe."

For more information about the RSNA Editorial Fellow program, go to [RSNA.org/publications/editorial\\_fellowships.html](http://RSNA.org/publications/editorial_fellowships.html).

## NCI Seeks Director for Cancer Imaging Program

**A**PPPLICATIONS are being accepted through Sept. 5 for the position of associate director of the Cancer Imaging Program at the National Cancer Institute (NCI) in Washington. The Cancer Imaging Program has approximately 25 employees and contractors and administers a research budget of approximately \$180 million.

The associate director will oversee a broad range of national and interna-

tional laboratory and clinical research programs aimed at developing new imaging approaches for cancer diagnosis and treatment. The position also oversees research activities in oncologic molecular imaging and provides leadership for imaging technology development programs and pre-clinical and clinical efforts in support of NCI's Imaging Drug Group. The associate director is also responsible for estab-

lishing partnerships with academia, industry and other federal agencies.

To view complete information regarding the vacancy, go to [www.usajobs.gov](http://www.usajobs.gov) and search using the term "Associate Director, Cancer Imaging Program (Medical Officer), (NCI)." More information about the NCI Cancer Imaging Program is available at [imaging.cancer.gov](http://imaging.cancer.gov).

## MyRSNA to Debut at Annual Meeting

RSNA will unveil MyRSNA, a new tool allowing members to customize the RSNA Web page to display content of specific interest to them, at RSNA 2007.

MyRSNA will be similar to offerings from Yahoo!® and Google™ in that members will be able to decide the content and services they want displayed each time they go to the RSNA Web site.

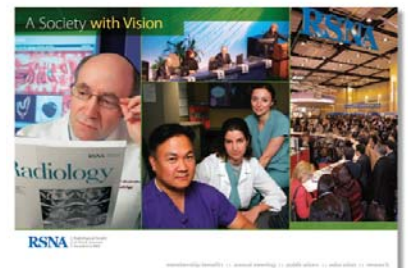
More details about MyRSNA, including demonstrations at RSNA 2007, will be available online at [RSNA.org](http://RSNA.org) and in future editions of *RSNA News*.

## RSNA Publications Garner Awards

The RSNA Corporate Brochure and an RSNA Research & Education (R&E) Foundation brochure were recently honored in The Communicator Awards 2007 Print Competition.

The RSNA Corporate Brochure, "A Society with Vision," won an Award of Distinction in the company overview category. The R&E Foundation brochure, "Yesterday, Today, Tomorrow," won an Award of Distinction in the fundraising category.

Presented for projects that exceed industry standards in production or communication skills, the Award of Distinction is the second highest honor presented by The Communicator Awards.



## FDA Requests Warning on Gadolinium-based Contrast Agents

**T**HE U.S. Food and Drug Administration (FDA) has asked manufacturers to include a boxed warning on the product labeling of all gadolinium-based contrast agents used in MR imaging.

The requested warning states that patients with severe kidney insufficiency who receive gadolinium-based agents are at risk for developing the debilitating and potentially fatal disease nephrogenic systemic fibrosis (NSF). In addition, the warning would state that patients, just before or just after liver transplantation or those with chronic liver disease, are also at risk for devel-

oping NSF if they are experiencing kidney insufficiency of any severity.

FDA first notified healthcare professionals and the public about gadolinium-related risks for NSF in June 2006. Five gadolinium-based contrast agents have been approved for use in the U.S.:

- Magnevist® (gadopentetate dimeglumine), manufactured by Bayer Schering Pharma of Berlin
- Omniscan™ (gadodiamide), manufactured by GE Healthcare of Chalfont St. Giles, U.K.
- OptiMARK® (gadoversetamide), manufactured by Mallinckrodt, Inc. of Hazelwood, Mo.

- MultiHance® (gadobenate dimeglumine) and ProHance® (gadoteridol), manufactured by Bracco Diagnostics Inc. of Princeton, N.J.

More information is available at [www.fda.gov/medwatch/safety/2007/safety07.htm#Gadolinium](http://www.fda.gov/medwatch/safety/2007/safety07.htm#Gadolinium).

Similar action has been taken in Europe. In late June, the Commission on Human Medicines and European Pharmacovigilance Working Party (PhVWP) recommended that Magnevist should also not be used in patients with severe kidney impairment. The organizations made the same recommendation regarding Omniscan in February.

## NIH Awards Nearly \$21 Million to Fund Cutting-Edge Research Equipment

Vanderbilt University in Nashville, Tenn., and The University of Texas Health Science Center in San Antonio will receive 7 Tesla MR imaging scanners as part of 14 high-end instrumentation (HEI) grants, totaling \$20.65 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. This round of grants will enable research on the diagnosis and treatment of diseases including epilepsy, psychiatric disorders, autism, cardiovascular disorders and cancer.

Among other equipment funded by the grants were 3 Tesla MR imaging scanners, nuclear MR spectrometers and high-performance, hybrid linear

ion trap-Fourier transform mass spectrometers.

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 awards is available at [www.ncrr.nih.gov/biomedical\\_technology/highend\\_instrumentation/hei\\_awards\\_12june2007.asp](http://www.ncrr.nih.gov/biomedical_technology/highend_instrumentation/hei_awards_12june2007.asp).

## New Group for Clinician-Educators Needs Members

The Alliance of Clinician-Educators in Radiology (ACER), approved by the board of directors of the Association of University Radiologists (AUR) at its recent annual meeting, is looking for founding members.

ACER will provide a forum for year-round information exchange and offer programming at the annual AUR meeting targeted towards the needs of clinician-educators. Topics to be addressed include peer-to-peer review and mentoring and development of a teaching portfolio.

The ACER president is Eric J. Stern, M.D., of the Department of Radiology at Harborview Medical Center in Seattle. For more information, including how to join AUR and ACER, go to [www.AUR.org/acer.htm](http://www.AUR.org/acer.htm). AUR can also be contacted at 1-630-368-3730 or [AUR@rsna.org](mailto:AUR@rsna.org).

## Settlement Reached in Lawsuit over Physics Consultations Payments

A settlement reached in *Bardmoor v. Aetna*, a lawsuit in which the plaintiff sought to have the healthcare benefits company pay for denied CPT 77336 claims for physics consultations, includes a claims process through which providers may seek lost reimbursement.

Any provider who had a physics consultation performed for an Aetna member between October 1, 2003 and April 1, 2005, but whose CPT 77336 claim was deemed incidental to other services and denied, can participate in the claims process. For each 77336 claim approved, Aetna will pay 100 percent of what should have been paid at the time the claim was filed, without deductions. Providers have five months to file a claim. Those interested in filing a claim should contact:

Hanzman, Criden & Love, P.A.  
7301 SW 57th Ct, Suite 515  
South Miami, FL 33143  
1-305-357-9010

### MEDICAL IMAGING COMPANY NEWS

#### Abbott, GE Nix Deal

■ Abbott Laboratories of Abbott Park, Ill., and GE Healthcare of Chalfont St. Giles, U.K., announced last month the termination of the contract to sell Abbott's core laboratory and point-of-care diagnostics businesses to GE. The companies reported they were unable to agree on final terms and conditions of the proposed sale, which had been valued at more than \$8 billion.

## Husband Receives High British Honors

**Janet Husband, F.Med.Sci., F.R.C.P., F.R.C.R.**, a professor of radiology at The Royal Marsden National Health Service Foundation Trust and Institute of Cancer Research in London, has received the award of Dame Commander of the Most Excellent Order of the British Empire.

Dr. Husband was the first woman in the UK to train part-time in radiology and is recognized for undertaking pioneering clinical research in cancer imaging over the last 30 years. President of the Royal College of Radiologists, she is the first woman to serve in that role. She was made an honorary member of RSNA in 2005.



**Janet Husband, F.Med.Sci.,  
F.R.C.P., F.R.C.R.**

### Upright MR Imaging Designer Named Inventor of the Year

The developer of the Upright™ MR imaging scanner, **Raymond V. Damadian, M.D.**, was named the National Inventor of the Year by the Intellectual Property Owners Education Foundation.

Dr. Damadian said he designed the scanner so physicians could view a patient's tissues and bones under the strain of normal use, rather than in a horizontal position like traditional MR imaging machines. The device is also designed to allow physicians to better map the cardiovascular system when a patient is standing up and blood is moving against gravity.

Dr. Damadian is president and founder of FONAR, maker of the Upright MR imaging scanner.

### RSNA Editorial Fellow Named Journal Editor

**Giuseppe Guglielmi, M.D.**, an RSNA Editorial Fellow in 2003, has been named deputy editor of *La Radiologia Medica*, the official journal of the Italian Society of Medical Radiology.

Specializing in musculoskeletal radiology, particularly metabolic bone disease, Dr. Guglielmi is a professor of radiology at the University of Foggia in Italy and the Scientific Institute Hospital in San Giovanni Rotondo. He was also recently named a subspecialty editor in musculoskeletal radiology for EuroRad, a teaching database facilitating searches of Web-based radiologic documents.



**Giuseppe Guglielmi, M.D.**

### Baert Retiring as European Radiology Editor

**Albert L. Baert, M.D., Ph.D.**, has announced he will retire as editor-in-chief of *European Radiology* on December 31, after 12 years in the position.

Dr. Baert is an emeritus professor of radiology at the University of Leuven in Belgium.

His successor at the journal will be Adrian K. Dixon, M.D., F.R.C.P., F.R.C.R., a professor of radiology at the University of Cambridge.



**Albert L. Baert, M.D.,  
Ph.D.**

### Pressman Elected ACR President

**Barry D. Pressman, M.D.**, is the new president of the American College of Radiology (ACR). At Cedars-Sinai Medical Center in Los Angeles, Dr. Pressman is chair of the S. Mark Taper Foundation Imaging Department and Center and chief of the center's section of neuroradiology and head and neck radiology.

Also named to the ACR board were:

- Jeffrey C. Weinreb, M.D., New Haven, Conn., vice-president
- David C. Kushner, M.D., Virginia Beach, Va., speaker
- Alan D. Kaye, M.D., Bridgeport, Conn., vice-speaker



**Barry D. Pressman, M.D.**

**RSNA News**

Send news about yourself, a colleague or your department to [rsnanews@rsna.org](mailto: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.

# RSNA Board of Directors Report

**A**T ITS June meeting, the RSNA Board of Directors approved the RSNA 2007-2008 budget. Included was funding for major new initiatives related to imaging biomarkers and quantitative imaging, as well as support for enhancements to the RSNA journals and the Society's collaboration with societies in the U.S. and abroad.

## Imaging Biomarkers and Quantitative Imaging

The discovery, development, testing and deployment of **imaging biomarkers**, for use in the assessment and clinical application of new therapies, figured prominently in not only the Board's budget considerations but also in discussions of RSNA's mission. The Board approved an addition to RSNA's five-year vision statement and six new projects proposed by RSNA's new science advisor, Daniel C. Sullivan, M.D., all aimed at establishing the Society as an international leader and partner in the imaging biomarker area.

The actions also reflect RSNA's intent to help **transform radiology from a qualitative to quantitative science** in order to help patients benefit from accelerated development and dissemination of new pharmacologic, biologic and interventional diagnosis and treatment approaches. More information about RSNA's new projects and the latest developments in imaging and other biomarkers can be found on Page 6.

## RSNA Journals

As Herbert Y. Kressel, M.D., prepares to take over as editor of *Radiology* in January, the Board appointed four deputy editors to serve under him: Deborah Levine, M.D., ultrasound/women's imaging; Alexander A.

Bankier, M.D., thoracic imaging; Robert Sheiman, M.D., vascular/interventional and Michael H. Lev, M.D., neuroradiology. *Radiology* Editor Anthony V. Proto, M.D., will retire at the end of the year.

The Board also approved adding 16 more pages, devoted to **quality improvement topics**, to *RadioGraphics* starting with the January-February 2008 issue. The new section will be edited by Associate Editor Jonathan B. Kruskal, M.D., Ph.D. (See My Turn, next page).

## Editorial, Research Support

Also approved by the Board at the June meeting were recipients of RSNA programs that support individuals pursuing radiology editorial experience. Johannes T. Heverhagen, M.D. was named the 2007 recipient of the **William R. Eyer Editorial Fellowship** and

*Board actions reflect RSNA's intent to help transform radiology from a qualitative to a quantitative science.*

Christopher T. Whitlow, M.D., Ph.D., was approved as the 2007 **Editorial Trainee**. More information about Drs. Heverhagen and Whitlow can be found on Page 1.

The **Revitalizing the Radiology Research Enterprise (RRRE) program** is designed to help academic radiology and radiation oncology departments improve their ability to support and conduct radiologic research. Approved by the Board for RRRE site visits this year were the radiology department at Case Western University/University Hospitals in Cleveland and the radiation oncology departments at the University of Pennsylvania in Philadelphia and the University of Virginia in Charlottesville.

In recognition of the value of reports created by the **International**



**Gary J. Becker, M.D.**  
Chairman, 2007 RSNA Board of Directors

**Commission on Radiation Units and Measurements** to radiologists, the Board authorized RSNA becoming an affiliated organization of the commission.

## International Programs

As part of RSNA's commitment to foster relationships with international physicians and societies, the Board approved 18 participants for the **Introduction to Research for International Young Academics (IRIYA)** program in 2007. This special seminar held during the annual meeting encourages young radiologists from countries outside North America to pursue careers in academic radiology.

The Board also approved the 2007 **International Visiting Professor (IVP)** teams that will travel to Nigeria, Vietnam and China. The IVP program, which sends imaging professionals to lecture at the national radiology meetings of emerging nations, as well as local hospitals and teaching institutions in the host countries, also sends a team to Mexico each year. Information about IRIYA and IVP participants will be published in an upcoming issue of *RSNA News*.

In addition, RSNA President R. Gilbert Jost, M.D., and Executive Director Dave Fellers, C.A.E., will represent RSNA for the first time at the **Chinese Congress of Radiology** meeting in Nanjing in October. RSNA President-elect Theresa C. McLoud, M.D., will teach a refresher course and RSNA will also have a booth at the meeting. RSNA's presence at the meeting is part of its outreach to colleagues in China, whose scientific submissions to the RSNA annual meeting have been increasing.

As part of RSNA's **communities of learning** program, William E. Brandt, M.D., will serve as an "e-mentor" to six radiology residents at a hospital in Nairobi, Kenya.

### RSNA Annual Meetings

At RSNA 2007, RSNA will track attendance in the Technical Exhibit Halls and Lakeside Learning Center using radiofrequency identification, also known as RFID. RFID badge scanning is a noninvasive way to track attendance and exhibit booth participation. No personal information is stored on the RFID chip, only an identification number. Badges will be scanned to obtain total attendance counts, exhibit booth participation and exhibit floor traffic flow through the entrances.

For RSNA 2008, the Board approved a new **scientific exhibit category** to be added to the Call for Abstracts. The new category is expected to feature submissions of applied science

that demonstrate non-hypothesis-based work not yet generally accepted enough to be considered an education exhibit.

### GARY J. BECKER, M.D.

CHAIRMAN, 2007 RSNA BOARD OF DIRECTORS

■ Note: In our continuing efforts to keep RSNA members informed, the chairman of the RSNA Board of Directors will provide a brief report in *RSNA News* following each board meeting. The next RSNA Board Meeting is in September 2007.

## MY TURN

# Time Has Come to Embrace Quality

**A**S REGULATORY demands for quality metrics begin to permeate our practices, radiologists have been slowly introduced to quality assurance concepts and processes. However, as the pace quickens, processes must be made transparent and embraced with passion and enthusiasm.

In an Innovation Series white paper issued this year, "Engaging Physicians in a Shared Quality Agenda," the Institute of Healthcare Improvement addressed ways of doing just that. To effect this cultural change, we must identify and activate "champions" and make radiologists visible partners, rather than customers, in the process. Equally important, we must produce evidence that participating in seemingly bureaucratic processes actually improves the quality of our practices and patient safety.

While it may not be too challenging to meet many regulatory demands—such as contributing to a peer-review process, exceeding pay-for-performance

thresholds, completing the American Board of Radiology's Practice Quality Improvement project to receive Maintenance of Certification or fulfilling the

practice-based learning requirements of the Accreditation Council for Graduate Medical Education—the major hurdle is convincing radiologists of the many benefits of quality and safety. To achieve this, we must advocate both system and individual responsibility and accountability and implement evidence-based protocols to limit variability in the many processes related to radiology practice.

We, along with our patients and referring colleagues, are all partners in the quality improvement process and must align quality and safety initiatives with the missions of our institutions and departments. Lastly, the educational aspects of quality improvement cannot be overemphasized—we must publicize



Jonathan B. Kruskal, M.D., Ph.D.

successes and analyze failures, disclose errors and inspire colleagues to report adverse events, seek root causes and implement measurable changes, establish processes to identify and prevent situations where errors are just narrowly avoided and involve trainees in these processes so that quality and safety

methodologies become essential components of our practices, rather than an onerous administrative burden.

*Jonathan B. Kruskal, M.D., Ph.D., is an associate professor in the Department of Radiology at Harvard Medical School and associate chief of radiology for quality and director of abdominal imaging at Beth Israel Deaconess Medical Center in Boston. He was recently named an associate editor of RadioGraphics and will focus on a new quality improvement section. Dr. Kruskal is a member of the RSNA News Editorial Board.*

# Imaging Critical as Biomarkers Drive Personalized Medicine

**I**NCREASING reports throughout medicine of newly identified biomarkers are an indicator of the escalating and essential role that biomarkers play in the developing world of molecular medicine. RSNA is helping establish radiology's role in the personalized medicine revolution.

"A new generation of imaging experts will add value to personalized medicine through quantitative imaging, by sorting responders from non-responders before treatment, rapidly assessing response to therapy already initiated, verifying targeting of theragnostics, measuring longer-term response to therapy and rendering critical prognostic information," said RSNA Board Chairman Gary J. Becker, M.D.

Preparing for this revolution will require attention to everything from harmonized image acquisition protocols and validated software algorithms to standardized ontologies and structured reporting, said Dr. Becker, a professor of vascular and interventional radiology at the University of Arizona and associate executive director of the American Board of Radiology in Tucson.

Professional radiology societies are particularly well poised to help, he said, by convening and facilitating consensus among stakeholders, providing forums for presentations of the latest science, training clinical investigators and globalizing biomarker efforts.

RSNA endeavors will be organized in large part by its new science advisor, Daniel C. Sullivan, M.D. At its June meeting, the RSNA Board of Directors approved six projects proposed by Dr.

Sullivan, including separate forums for representatives of professional societies, industry and academic programs. RSNA also plans to offer annual meeting sessions related to quantitative imaging and biomarkers, as well as eventually creating a separate conference called "Toward Quantitative Imaging." RSNA will also co-sponsor workshops with the National Cancer Institute (NCI) and U.S. Food and Drug Administration to identify disease-specific approaches to quantitative assessment of tumors.

"All aspects of healthcare are becoming more objective and less subjective," said Dr. Sullivan. "Radiology must therefore move aggressively in the direction of becoming more quantitative. This requires active involvement from radiologists, physicists, chemists, molecular biologists, computer scientists, imaging device manufacturers and a variety of users including clinicians, regulators and payers."

## Imaging a Fast-Growing Biomarker Class

Dr. Becker emphasized that imaging is just one class of potential biomarkers among a broad

variety of measures—including physical findings such as blood pressure and blood levels of key substances such as tumor markers and cholesterol—that can express disease probability, presence, severity and location, as well as likelihood of and actual response to a particular therapy and disease recurrence.

"Today there are already examples of imaging biomarkers that can tell whether a patient will or will not respond to therapy after 24 to 48 hours



**Daniel C. Sullivan, M.D.**  
RSNA Science Advisor

of treatment using some newer cancer therapeutic agents," said Dr. Becker. Use of dynamic contrast-enhanced (DCE) MR imaging at baseline and after 48 hours of therapy with antiangiogenic agents in certain cancers is just one example, he said.

Imaging biomarkers also figure prominently into changing standards for diagnosing Alzheimer disease. An international panel of 19 physicians, in an article published online by the journal *The Lancet Neurology* on July 9, 2007, advocate that an Alzheimer diagnosis require that a person "suffer memory loss that gets worse over a six-month period" and then the presence of "at least one physical biomarker" for confirmation. Along with genetic ones, imaging biomarkers could include MR evidence of shrinking of a particular part of the brain and a PET scan showing brain activity tied to the disease or deposits of amyloid protein in the brain, the researchers write.

Progress on other biomarker fronts includes discoveries unveiled earlier

*A new generation of imaging experts will add value to personalized medicine through quantitative imaging.*

**Gary J. Becker, M.D.**



this year at the annual meeting of the American Association for Cancer Research (AACR). Investigators presented gene expression signatures that could serve as biomarkers in predicting how women will respond to breast cancer drugs, as well as genetic mutations that could predict lack of drug response in patients with colorectal cancer. Also introduced were two new methods for identifying biomarkers—a peptide library and a high-throughput genetic analysis technique.

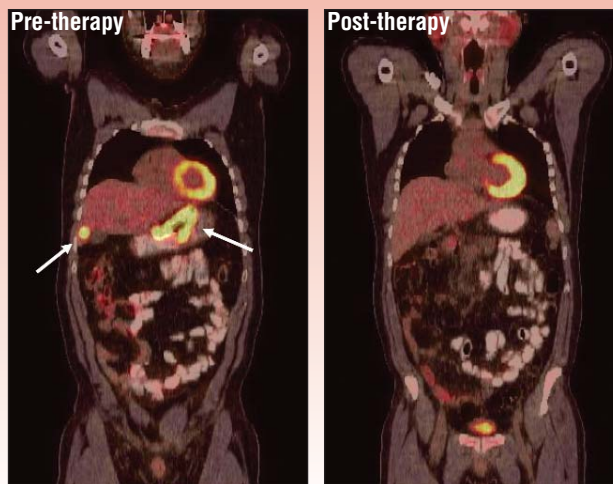
Another effort to stimulate parallel discoveries of imaging biomarkers was the first RSNA-organized invitational biomarkers methodology workshop, *Imaging as a Biomarker for Planning and Monitoring Therapy*, held May 3–4. Representatives from government agencies, industry and medicine defined the contributions of imaging biomarkers to clinical decision-making and drug development, identified study designs and research methods for discovering these biomarkers and discussed the establishment of shared terminology.

One important outcome of the meeting, said Dr. Becker, was agreement among the participants that there is much to be accomplished and that a series of topical workshops on the methodology of imaging biomarkers will be an important way to work through the challenges. “There was widely expressed enthusiasm among the participants for RSNA’s serious interest and involvement in this field,” he said.

RSNA has continued convening meetings with industry representatives and is also a contributing member of The Biomarkers Consortium, a public-private partnership to advance knowledge about specific biomarkers and their clinical applications.

### All Radiologists Urged to Get Involved

At the *Frontiers of Biomedical Imaging Science* conference held at Vanderbilt University in Nashville, Tenn., in June, sessions addressed the obligation of all radiologists and radiation oncologists to



### ON THE COVER

Patient with gastric cancer, metastatic to the liver (arrows). FDG-PET/CT scans show that both the primary tumor and the liver metastasis responded well to chemotherapy.

Images courtesy of David W. Townsend, Ph.D., University of Tennessee Medical Center.

advance quantitative imaging and imaging biomarkers. C. Carl Jaffe, M.D., chief of the Diagnostic Imaging Branch of NCI’s Cancer Imaging Program, urged attendees to examine the importance of participating in clinical trials regardless of where their practices are located.

“The irony is that at any given time there are about 400,000 people with cancer, and only 2 percent of them are on clinical trials,” Dr. Jaffe said in an interview. “So we can infer that those other 98 percent are being taken care of under circumstances in which we know what their treatment and outcome will be. Is that true? I don’t think so. In only 2 percent of cases are we admitting our lack of knowledge and participating in a way designed to explore the frontiers of that knowledge.”

As biomarker research evolves, so will the role of the imager, said Dr. Jaffe. “Imaging has been treated as if it stands by itself and as if it is its own truth,” he said. “The value of imaging is on the individual patient level. It is very common for the imager, when he sees the tumor shrinking, to say, ‘Oh, what we’re doing is good for the

patient. He has a shrinking tumor. He’s going to do better.’ We know that’s not always the case, but the problem we face is people have to look at disease as a statistical problem, rather than an individual problem.”

Dr. Jaffe said he wanted his message promoting research to resonate with all attendees, from all types of radiology settings. “They have to recognize that all therapies in cancer are experimental,” he said. “You can’t concentrate simply on your own local environment and contribute to the knowledge base about choosing the appropriate therapies. Physicians should recognize their role in the larger framework of the testing of therapies and drugs. That role is a formal role. It is larger than the day-to-day events that occur when you’re dealing with an individual patient.” □

### Learn More

■ For additional information about imaging biomarkers, including validation for pre-clinical and clinical applications and clinical trial design, visit the Massachusetts General Hospital Center for Biomarkers in Imaging online at [www.biomarkers.org](http://www.biomarkers.org).

## Imaging Biomarkers at RSNA 2007

An RSNA 2007 refresher course, “Imaging as a Biomarker,” will look at the role of imaging in clinical trials, methods for quantitative imaging and change detection in medical imaging. For more information and to register now for RSNA 2007 courses, go to [RSNA2007.RSNA.org](http://RSNA2007.RSNA.org).



# PACS Reaches Near Saturation in Healthcare Market

**A**BOUT 90 percent of major medical institutions use picture archiving and communication systems (PACS), up from 40 percent just a few years ago, according to a recent report released by a London-based business analysis company. The report points to lower costs and new modalities as reasons for the increased utilization.

“The main finding is that PACS is going to become the standard in hospitals within a few years, and in some countries it’s already the standard,” said Justin Davidson, an associate analyst with the Datamonitor firm and author of “Digital Imaging: Reducing Medical Error and Improving Diagnostics,” a market study released earlier this year.

The Datamonitor report found the largest areas of PACS growth to be in the Nordic countries, U.K. and North America. “It’s a technology that’s hard to argue against,” said Davidson. “PACS really is sort of a no-brainer. The benefits far outweigh any negative features that may exist.”

In some European nations, said Davidson, the rapid spread of PACS usage over the past three to five years was driven by governmental health initiatives such as Britain’s National Health Service, which worked to link the country’s medical records electronically.

“PACS has shown a pretty classic technology adoption curve,” said James H. Thrall, M.D., co-author of *PACS: A Guide to the Digital Revolution*, originally published in 2002 and updated last year. Dr. Thrall is radiologist-in-chief at Massachusetts General Hospital in Boston and the Juan M. Taveras Professor of Radiology at Harvard



**James H. Thrall, M.D.**  
Harvard Medical School



**Justin Davidson**  
Datamonitor

Medical School. He traces the current PACS boom back to the mid-1990s, when a few systems were being used by leading academic medical centers, “with a few adventurous private practices joining in.”

One factor in the spread of PACS usage, said Dr. Thrall, was the availability of Web-based solutions which substantially lowered costs. “When we first started implementing PACS technology in about 1995, it cost us \$40,000 to \$50,000 per workstation,” he said.

Today, he noted, institutions benefit from the use of software licenses, decreases in the cost of flat-panel displays and “astonishing” increases in computing power per dollar spent—both in terms of processing power and archiving. “We’re spending perhaps \$5,000 to \$10,000 per workstation,” said Dr. Thrall, “and less than 5 percent of the original expense for archiving studies. So it’s really been a series of

tipping points over a period of time.”

## “Seeing is Believing” Effect Influenced Some

The falling costs of data storage and computer equipment are helping with the continued spread of PACS, but there are other factors as well, said Davidson, pointing to the “seeing is believing” effect. In North America, he said, “it’s very much up to the hospitals to see the benefit of PACS and start implementing them.” He added that while administrators of some smaller hospitals initially lacked the capital to invest in PACS, they’re now witnessing firsthand how well the systems work in the larger facilities.

The report also indicates a shortage of radiologists in the U.S. contributed to increased PACS usage. “With PACS, industry estimates are that a radiologist can see 10 percent more patients in a day,” Davidson said. He added that the ever-increasing versatility of PACS, allowing radiologists to access images from their home PCs or even download

*PACS has shown a pretty classic technology adoption curve.*

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

them onto their personal digital assistants (PDAs), has also helped spur growth.

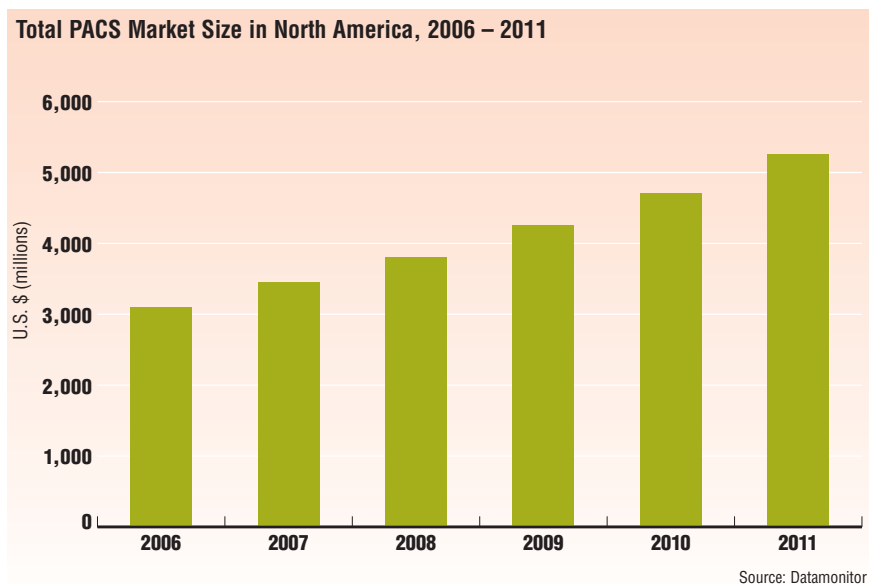
The advent of multidetector CT scanners around the year 2000 added to the PACS boom by substantially increasing the number of images that radiologists had to handle, said Dr. Thrall. "Even the most technophobic and recalcitrant radiologists began to realize they could not work with hard-copy images when a complicated CT angiogram might have 2,000 images," he said. "The number of images has just skyrocketed."

The use of PACS has not only increased how many images radiologists can easily examine, but also how well they examine them, Dr. Thrall added. PACS has allowed radiologists to extract more value from images, he said, by facilitating image post-processing, 3D rendering and extraction of quantitative parameters. "That's a huge part of the value we've pushed," he said. "Computer-aided diagnosis, reformatting of the transaxial images into coronal images, volumetric renderings and surgical planning are all advantages of the PACS era."

The Datamonitor report also highlights how healthcare professionals are seeing opportunities for PACS beyond radiology, with uses in departments such as cardiology, pathology and dermatology.

### Tech Support, Integration Remain Challenges

There are some speed bumps on the road to total PACS saturation, said Dr. Thrall. The costs of purchasing new PACS equipment, software and storage have been overcome, he said, but now there is a shortage of technology support for PACS systems in smaller institutions. "Probably the majority of radiology departments do not have someone trained to manage a PACS," he said. He noted that the Society for Imaging Informatics in Medicine (SIIM) offers certification for PACS administrators, but "there's still a sort



of mismatch between the level of sophistication you would like to have from a PACS administrator and the pool of available people." This "human resource gap," he said, has "put the brakes on the spread of PACS."

Still, Dr. Thrall added, "for larger institutions, it's not a question of whether you want PACS or not, you've got to have PACS to stay in business. You just can't practice radiology on any large scale without electronic image management."

Dr. Thrall said he sees other immediate challenges as PACS become nearly ubiquitous in most U.S. hospitals. With many hospital administrators now beginning to plan the purchases of their second or third generation of PACS, they must think about how these new PACS, with images in the digital imaging and communications in medicine (DICOM) format, are going to converge with the digital infrastructure of the rest of the hospital, which typi-

cally uses HL7 standards to format information, he said.

"One of the things we're going to see in the next five to 10 years is the first and second generation of PACS, that were departmental and closed in their design for use by radiologists, replaced with Web-based enterprise PACS solutions that converge with the entire hospital's digital system," said Dr. Thrall. "This is a 20-year revolution, and we're now about three-quarters of the way through it." □

### Learn More

■ The American Board of Imaging Informatics (ABII), founded earlier this year by the Society for Imaging Informatics in Medicine (SIIM) and American Registry of Radiologic Technologists (ARRT®), oversees Imaging Informatics Professional certification for PACS administrators. More information is available at [www.siiimweb.org](http://www.siiimweb.org).

### PACS at RSNA 2007

Picture archiving and communication systems (PACS) will be the focus of Part 2 of the "Practical Informatics for the Practicing Radiologist" refresher course at RSNA 2007. Among the topics to be addressed are orphaned workstations and how to integrate advanced image processing (3D and computer-aided diagnosis) into PACS workflow. For more information and to register now for RSNA 2007 courses, go to [RSNA2007.RSNA.org](http://RSNA2007.RSNA.org).



# Radiology Resident Debt, Board Exam Timing Questioned

**T**HE debt burden carried by residents, as well as the timing of their oral board examinations and study, call and other responsibilities that intensify in their senior year, are the subjects of renewed debate within the radiology community.

"They're all parts of an unfair education process...greatly out of whack," said Stephen R. Baker, M.D., president of the Society of Chairmen of Academic Radiology Departments (SCARD). While Dr. Baker and others call for change, the possible solutions seem elusive and controversial.

Dr. Baker, who chairs the radiology department at the New Jersey Medical School at the University of Medicine and Dentistry of New Jersey (UMDNJ) in Newark, said he's distressed about the debt, mostly from medical school, that residents carry—\$130,000 on average in 2006, according to the Association of American Medical Colleges.

"When their children are going to college they'll still be paying off their own educational loans," said Dr. Baker. "That's crazy."

It's unacceptable that career choices based on finances force many residents to turn away from academic radiology, said Dr. Baker.

Without prior earning years, a salary approximating \$50,000 and oral boards looming, residents encounter sharply escalating costs in the fourth year, Dr. Baker said. Board review, Armed Forces Institute of Pathology (AFIP) RadPath courses, travel, housing, interviews and board exam fees can add up to \$7,500 of personal education expense, according to a recent study initiated by Dr. Baker and colleague Gauri

Tilak, M.D. This personal outlay represents about 15 percent of senior residents' salaries on top of their ponderous medical school debt, said Drs. Baker and Tilak, who reported their study at the annual meeting of the American Roentgen Ray Society in May.

"No one wants to live with that much debt," said Vladimir Sheynzon, M.D., a third-year resident at the UMDNJ-New Jersey Medical School. "You learn to live with it, we're not crying about it, but everyone wants to live a little," he said. Third-year colleague Basil Hubbi, M.D., called medical debt "a stressor." While he enjoys teaching and likes the idea of academic practice, he said he can understand why many choose private practice to repay their debt. Choosing a fellowship or academic practice means accepting "the huge opportunity cost," said Dr. Hubbi, adding that he hasn't decided yet what he will do.

Most agree that while Medicare is footing the bill for residencies, there's no easy avenue to greater compensation. Paying residents more would mean losing resident slots, said Dr. Baker. "It's a hybrid situation, being both student and employee," he said, "and I don't think many institutions would want to invest in higher salaries."

Gregory Galdino, M.D., immediate past-chair of the Resident Fellows Section of the American College of Radiology (ACR), agreed. "Residents are severely underpaid for their level of responsibility, but it's a complex issue while Medicare supports the system," said Dr. Galdino, who just began private practice in Tennessee.



**Stephen R. Baker, M.D.**  
University of Medicine and Dentistry of New Jersey

## Responsibilities Grow Rapidly in Fourth Year

Meanwhile, fourth-year resident responsibilities climb toward a crescendo in what Dr. Baker called "the most accelerated seniority system in the history of employment." The approaching oral boards and senior year study, he said, impact resident programs and the junior residents who fill the gap, as study saps the time and energies of fourth-year residents. As a result, Dr. Baker and others have called for oral boards to be delayed two years to accommodate fourth-year responsibilities.

Lori Goodhart, M.D., director of radiology education at the Feinberg School of Medicine of Northwestern University, said she sees increasing momentum for change and attributes it in part to "senioritis," inordinate study concerns by seniors. "Most of them will pass anyway," added Dr. Goodhart, who said she favors moving the boards.

Dr. Galdino said he is absolutely opposed to delaying the boards. Fourth-

*[It's] an unfair education process...greatly out of whack.*

**Stephen R. Baker, M.D.**

year residents are, he said, “the most primed and attuned to the core competence of radiology.” He added that study and resident availability issues are local concerns well managed in many major institutions. A resolution, proposed by the ACR Resident Fellows Section and passed by the ACR council at this year’s annual meeting, established a panel to study the impact that moving the boards would have on the profession.

### Some Question Need for AFIP

Meanwhile, Dr. Baker has set his sights on still other issues. He has also suggested a pricing structure that allows residents to pay less for their first American Board of Radiology (ABR) exam and more as their incomes increase, as well as finding work for residents in richer institutions.

Earlier this year, Dr. Baker announced he will no longer send residents to the AFIP course. He said he considers it a poor educational format, with resident performance inadequately tracked and Medicare reimbursement now curtailed for their time away at AFIP. Instead, he said, radiology-pathology correlation is adequately performed in-house at his institution and, in light of new requirements from the Diagnostic Radiology Residency Review Committee of the Accreditation Council for Graduate Medical Education, he has instituted a course in molecular pathology. The course will be offered to other training programs this year as well.

His decision startled many. “AFIP’s great,” said Dr. Goodhartz. “It’s like going back to school and people teaching you everything you need to know and showing you cases that you could never see because there’s only one or two in the country. It’s just wonderful.”

RSNA Board Liaison for Science N. Reed Dunnick, M.D., noted that remote Internet learning makes the case for AFIP dubious. Dr. Dunnick is the Fred Jenner Hodges Professor and chair of the Department of Radiology at the

## Education, Relaxation Await Residents at RSNA 2007

SEVERAL RSNA 2007 courses focus on issues of importance to residents, their mentors and faculty. “Resident Training: Hot Topics,” will focus on education in cardiac imaging and medical physics and also address restructuring the radiology residency program, while “Sustaining a Radiology Residency Program: The Roles of the Chair, Program Director and Resident” looks at essential qualities for each position.



During “Mentoring Medical Students, Residents and Faculty,” lecturers will distinguish advising from mentoring, describe different types of mentoring for radiology residents and identify resources to improve resident mentoring.

In addition, the Residents Lounge at RSNA 2007 will offer RSNA members-in-training and non-member residents a place to relax and network while enjoying complimentary refreshments. The lounge, located in the Lakeside Center Ballroom, Level 3, in McCormick Place, is open Sunday through Thursday from 8 a.m. to 6 p.m. during the annual meeting.

On Monday, Nov. 26, from 4 to 5 p.m. at the Hyatt Regency McCormick Place, residents are invited to a reception with RSNA President R. Gilbert Jost, M.D. RSNA presidents and

other leaders value the reception as a time to reach out to the specialty’s next generation, hear their ideas and concerns and share advice. More than 300 residents have attended the event in past years.

Anne G. Osborn, M.D., (*top photo, second from right*), an RSNA Gold Medalist and current chair of the RSNA Research & Education Foundation Board of Trustees, was one of many RSNA leaders who visited with radiology residents at the RSNA 2006 Residents Reception.

(*Bottom photo*) The Residents Lounge at the annual meeting is always a busy place, as residents take time to relax and network.



University of Michigan Health System and ABR president-elect. Dr. Dunnick said he agrees, however, with much of the argument against delaying the oral boards. He said that in a rapidly expanding specialty where no one can master it all, a better solution may be to reduce the size of the residency core, increase subspecialty training and postpone the clinical year until residents have selected their area of practice.

“Do that and you would change the nature of the examination and make

this argument about the timing of the oral exam moot,” said Dr. Dunnick.

Dr. Baker said that no matter how the individual issues turn out, this is clearly a period of uncertainty in radiology education. “It’s going to be disquieting to those people who are accustomed to the current paradigm,” he said. □

# PAD Treatment Safe for Arteries Below the Knee

**W**HILE angioplasty and stenting have proven effective in preventing amputation by restoring blood flow to the main arteries of the lower extremities of patients with advanced stage peripheral arterial disease (PAD), a new study indicates these same methods can also be used successfully on the small, hard-to-treat arteries below the knee.

A study presented at the Society of Interventional Radiology annual meeting in March included patients who had either no blood flow to the lower leg or had developed gangrene.

“These patients were at the point where they were going to require an amputation. Studies had not focused on that before,” said lead author Nael Saad, M.B.B.Ch., an interventional radiologist at the University of Rochester Medical Center in Rochester, N.Y. “Angioplasty and/or stenting were able to restore blood flow to the limbs, thus saving these patients from life-altering amputation.”

Between 8 million and 12 million people have PAD, according to the American Heart Association.

## Vessels Formerly Overlooked Due to Size

The smaller blood vessels below the knee typically have had poorer treatment results because of their size and their tendency to re-clog more easily than larger vessels, said Dr. Saad. His study, conducted between August 2000 and February 2007, proved otherwise, he said.

“We treated 57 patients and were able to open the artery in 97 percent,” said Dr. Saad. The arteries below the knee remained open in 91 percent of patients at 18-months post-treatment and the success rate was consistent in

all patients consecutively enrolled over the six-year period, he said.

“The long-term clinical results are comparable to bypass surgery in the leg, with a much lower risk of morbidity and mortality,” said Dr. Saad. He added that patients recover more easily from angioplasty and stenting and the procedures are also much simpler to perform than bypass surgery.

“Everything is done with a needle inserted in an artery in the upper leg,” he said. “There is no incision; we just put a Band-Aid over it. The patient stays overnight and goes home the next

day. There is really no recovery, just several hours of lying still.”

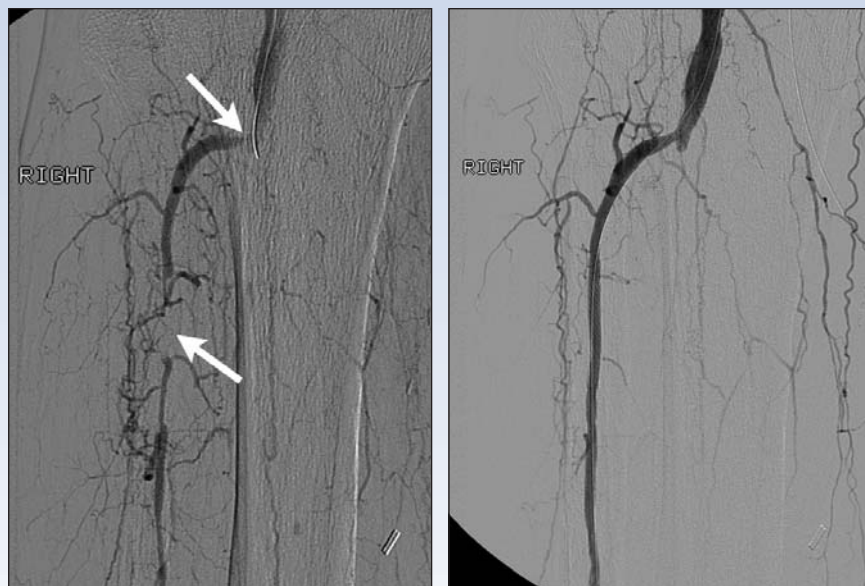
For many patients with PAD, who are an average age of 72 years, bypass would not be an option, said Dr. Saad. “For many of these people with PAD



**Nael Saad, M.B.B.Ch.**  
University of Rochester  
Medical Center



**Stephen P. Johnson, M.D.**  
University of Colorado Health  
Sciences Center



Images show a patient's lower leg before (left) and after angioplasty and stenting. In their study of 57 patients with advanced stage peripheral arterial disease (PAD), Nael Saad, M.B.B.Ch., and colleagues were able to open the artery in 97 percent. The arteries below the knee remained open in 91 percent of patients at 18-months post-treatment.

Images courtesy of Nael Saad, M.B.B.Ch., University of Rochester Medical Center.

below the knee, bypass wouldn't work because you need to use veins and, at this point, they don't have vein material to do the procedure," he said. "Also, because these people are often older and have serious comorbidities like diabetes and hypertension, they are poor candidates for bypass surgery."

Endovascular techniques such as angioplasty and stenting can also be repeated as necessary, said Dr. Saad. "If the artery does re-clog, you can go back and do it again," he said.

### Technology Advancing Quickly

Stephen P. Johnson, M.D., chief of interventional radiology at the University of Colorado Health Sciences Center in Denver, said technology to treat below-the-knee arterial disease has advanced significantly in the past five years.

"This is one of the most encourag-

ing studies," said Dr. Johnson. "Ten years ago we only received referrals for patients when they were high surgical risks or they did not have the veins for

*Studies like this have shown that the risk of losing a limb with endovascular techniques is very small and the success is high.*

**Stephen P. Johnson, M.D.**

bypass. Studies like this have shown that the risk of losing a limb following endovascular techniques is very small and the success rate is high.

"About 10 to 15 percent of patients with PAD will progress to a point where their limb is threatened," Dr. Johnson continued. "Not everyone who gets PAD will progress to such a threat point, but if they continue to smoke, or have hypertension or diabetes, the disease can progress to this point."

Dr. Johnson said his own clinical experience mirrors the results of Dr. Saad's study. "For many years there has been interest in something less invasive than bypass therapy. Endovascular techniques are now first-line ther-

apy and are becoming the standard of practice," he said. "That's a significant change and a great improvement in patient care. I think it's a very exciting and interesting time in the treatment of this disease." □

### Learn More

■ The Society of Interventional Radiology founded the Legs For Life® national screening and public information program in 1997 for peripheral arterial disease, abdominal aortic aneurysm, carotid stroke and venous disease. More information is available at [www.legsforlife.org](http://www.legsforlife.org).

## Interventional Radiology at RSNA 2007

AMONG the interventional radiology offerings at RSNA 2007 is "Imaging of Peripheral Arterial Occlusive Disease," a refresher course that will examine the spectrum of the disease and the role of digital subtraction angiography, MR angiography and CT angiography in imaging.

Also offered will be a multisession course, Case-based Review of Interventional Radiology. The course, offered in conjunction with the Society of Interventional Radiology, examines oncologic and nonvascular interventions as well as vascular diagnosis and interventions.

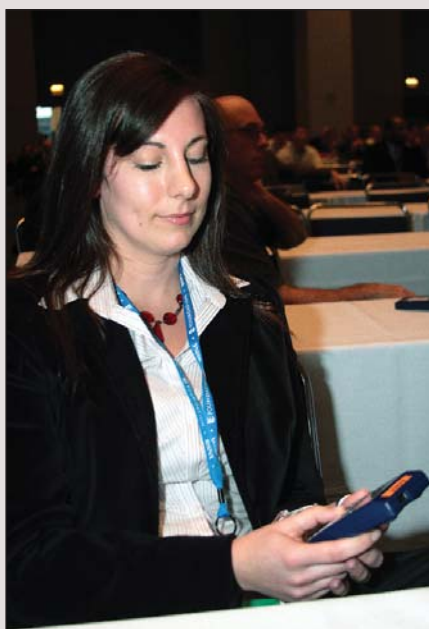
Other RSNA 2007 refresher courses addressing interventional radiology issues include "PACS in Procedural Areas: Interventions for the Interventional Radiologist," which looks what works and what doesn't, including angiography-specific needs and PACS in the operating room.

"Interventional Radiology in the Era of Molecular Medicine" provides an overview of molecular medicine for interventionalists

and looks at methods to enhance and monitor delivery of molecular therapies and contrast agents.

Interventional radiology is also the subject of a refresher course for radiologist assistants, while the Essentials of Radiology course in interventional radiology is designed to give an overview of the topic to generalists and trainees. For more information and to register

now for RSNA 2007 courses, go to [RSNA2007.RSNA.org](http://RSNA2007.RSNA.org).



A participant in the Case-based Review of Interventional Radiology at RSNA 2006 uses the audience-response system, designed to help instructors tailor courses to the competency level of the audience. Instructors ask questions, view audience answers on a screen and then alter course material based on the responses. Studies have shown that this level of audience involvement and feedback helps people learn more.



# Chicago Events and Attractions Sure to Please During RSNA 2007

DURING THE HOLIDAY SEASON, Chicago is one of the most vibrant cities in the country. It sparkles with festivities that include art, music and theater, as well as once-in-a-lifetime special museum exhibits. Regardless of age and interest, Chicago will offer something for everyone attending RSNA 2007.



## RSNA Tours & Events

RSNA is sponsoring a series of tours and events during RSNA 2007. The RSNA Tours & Events brochure is available at [RSNA2007.RSNA.org](http://RSNA2007.RSNA.org). Click Tours & City Events in the left-hand column.



Look for the “RSNA Tour” icon next to event listings in this article, signifying that a pre-arranged RSNA package is available. Enroll for tours and events online when registering for the annual meeting or while adding courses.

## Art Institute of Chicago

THE ART INSTITUTE’S world-renowned permanent collection includes a noteworthy exhibition of surrealist paintings and Impressionist art. This winter, a special exhibit will feature the work of Jasper Johns, one of the 20th century’s most important living artists. This 100-work exhibit focuses on Johns’ use of gray throughout his career in drawings, paintings, prints and sculptures. A second exhibit, *Splendor and Intimacy: Mughal and Rajput Courty Life*, celebrates India and Pakistan’s 60 years of independence with a small display of decorative arts and miniature paintings.

- 111 S. Michigan Ave. [www.artic.edu](http://www.artic.edu)
- Tickets: 1-312-930-4040 [www.ticketmaster.com](http://www.ticketmaster.com)
- Membership: 1-312-575-8000

Photo: Jamie M. Stukenberg/Professional Graphics Inc., Rockford, Ill.



*Target*, 1958  
Conte crayon on paper,  
15 1/2" x 15" sheet.  
Collection  
Mr. and Mrs.  
Andrew Saul.  
Art © Jasper  
Johns/Licensed by  
VAGA, New York, NY

## Field Museum

WHILE VISITING The Field Museum, say hello to Sue, the largest, most complete and best preserved *Tyrannosaurus rex* fossil ever discovered. Sue is only one of the many noteworthy specimens in the Field’s permanent collection. The *Evolving Planet* exhibit explores 4 billion years of evolution, allowing visitors to touch a real dinosaur bone and the teeth of a mastodon and a woolly mammoth.

A special exhibit, *Maps: Finding Our Place in the World*, includes more than 100 maps from around the globe. Some of the “greatest maps ever made” will be featured. Not only does this exhibit tell the story of the evolution of mapmaking and technology’s role, but it also examines the human aspect of map design. *Maps* is part of the citywide Festival of Maps, which unites 25 cultural and scientific institutions in a collaboration fea-



Sue, a permanent exhibit at Chicago’s Field Museum, is the largest, most complete and best preserved *Tyrannosaurus Rex* fossil ever discovered.

turing art, globes and maps from ancient to modern times. The Field Museum anchors the Museum Campus, which also includes the Shedd Aquarium and Adler Planetarium, on South Lake Shore Drive at Soldier Field.

- 1400 S. Lake Shore Dr.  
1-312-922-9410  
[www.fnmh.org](http://www.fnmh.org)



## Museum of Contemporary Art

**T**HE MCA's three special exhibits offer an interesting experience this winter. *Sympathy for the Devil: Art and Rock and Roll Since 1967*, explores the revolving relationship between visual art and the rock-and-roll culture through album covers, music videos and other related works of art. Twentieth century artist Alexander Calder's work holds a place in many a heart with his colorful mobiles and stables. *Alexander Calder in Focus* is a small exhibit of his works from 1927 to 1968. *Mapping the Self* is the MCA's contribution to the citywide Festival of Maps. Through drawing, photography, sound and video, the exhibit studies how mapmaking has been employed by artists to provide context to their world.

The MCA's permanent collection represents trends in art after 1945, with a special emphasis on Surrealism (1940s and 1950s), Minimalism (1960s), conceptual art and photography (1960s to the present), installation art and art by local artists. The collection includes paintings, sculpture, photography, video, film and installations.

■ 220 E. Chicago Ave.  
1-312-280-2660  
[www.mcachicago.org](http://www.mcachicago.org)



*Sympathy for the Devil: Art and Rock and Roll Since 1967*, explores the relationship between visual art and the rock-and-roll culture. Shown is Destroy All Monsters Collective, *Amazing Freaks of the Motor City*, 2001.

Courtesy of Patrick Painter, Los Angeles

## Shedd Aquarium

*Lizards and the Komodo King* is a special exhibit featuring lizards of all shapes and sizes from around the world. A favorite among children, Komodos can grow up to eight feet long, weigh as much as 300 pounds and eat a pig in 20 minutes.



The aquarium is home to aquatic life from around the world. *The Wild Reef* exhibit offers one of the most diverse displays of sharks in North America. Visitors can also enjoy sea-horses, otters, seals, dolphins, penguins and whales. The Shedd, a principal part of the Museum Campus, is a tasteful blend of contemporary and 1930s architecture situated on the shore of Lake Michigan.

■ 1200 S. Lake Shore Dr.  
1-312-939-2438  
[www.sheddnet.org](http://www.sheddnet.org)

## Adler Planetarium

**P**LANETARIUM visitors now can view the newly restored Gemini 12 spacecraft in the *Shoot for the Moon* exhibit, where cutting-edge technology helps tell the story of America's part in the space race.

Planetarium shows play continuously throughout the day. Scheduled in the virtual reality StarRider Theater are *Zulu Patrol*; *Under the Weather*; *Black Holes: The Other Side of Infinity* and *TimeSpace*, where time travelers quickly flip through the highlights of 14 billion years of our universe's history. The Sky Theater depicts stars and other nighttime wonders projected on Adler's distinctive dome. Sky Theater presentations include *Egyptian Nights: Secrets of the Sky Gods* and *Night Sky Live!* The Adler Planetarium is located on a scenic section of the Museum Campus jutting into Lake Michigan.



■ 1300 S. Lake Shore Dr.  
1-312-922-7827  
[www.adlerplanetarium.org](http://www.adlerplanetarium.org)

## Smith Museum of Stained Glass Windows

Located on the east end of Navy Pier, this free museum houses the nation's largest permanent collection of Tiffany stained glass windows. This tranquil exhibit offers a wonderful repose from the recreational chaos of Navy Pier. The museum has more than 150 stained glass works—some dating back to the 1890s—by artists including John LaFarge, Louis Sullivan, Frank Lloyd Wright, Franz Mayer and F.X. Zettler. Free guided tours are also available by appointment.

■ 600 E. Grand Ave.  
1-312-595-5024

## Peggy Notebaert Nature Museum

Perched on the edge of a Lincoln Park lagoon, this Chicago museum welcomes children of all ages to explore nature. Visitors should be sure to enjoy the beauty of the Butterfly Haven. Other permanent exhibits include the Look-in Animal Lab, Extreme Green House, Mysteries of the Marsh, RiverWorks, Water Lab, Wilderness Walk and Hands on Habitat for visitors age seven and younger.

■ 2430 N. Cannon Dr.  
1-773-755-5100  
[www.chias.org](http://www.chias.org)

## Chicago Historical Society

The Society has created an urban museum, which presents the fascinating multicultural heritage of the region in creative, up-to-date exhibits. Check the Web site for neighborhood tours, lectures, performances and events.

■ 1601 N. Clark St.  
1-312-642-4600  
[www.chicagohs.org](http://www.chicagohs.org)

## Lincoln Park Conservatory

A tropical oasis features greenery from around the world. Seasonal features include a chrysanthemum show in November and a Christmas show in December.

■ 2391 N. Stockton Dr.  
1-312-742-7736

## Garfield Park Conservatory

A holiday flower show is presented by the Garfield Park Conservatory, which was built in 1907. The conservatory was designed by architect Jens Jensen and is one of the world's largest gardens under glass.



■ 300 N. Central Park Ave.  
1-312-746-5100  
[www.garfield-conservatory.org](http://www.garfield-conservatory.org)

## Museum of Science and Industry

**T**HE Museum of Science and Industry is one of the most popular tourist destinations in the city of Chicago and among seven of the most visited museums in the U.S. Opened in 1933, it was the first museum in North America to develop hands-on, interactive exhibits.

Permanent exhibits include the U-505 World War II submarine, Colleen Moore's Fairy Castle and the Apollo 8 Command Module. Of particular interest to RSNA 2007 attendees may be *IMAGING: Tools of Science*, an exhibit featuring the use of computer-based imaging technology in the fields of medicine, science, law enforcement and entertainment.

A special exhibit, *Star Wars: Where Science Meets Imagination*, explores the technology behind the fantasy and applies it to reality of the future. More than 80 costumes, models and props from the movie are displayed along with video interviews with engineers, filmmakers and scientists.

Annual exhibits include the *Christmas Around the World* and *Holidays of Light*. Also on display in a special exhibit are more than 200 robots and space toys from the Robert Lesser collection. *Robots Like Us* explores how these delightful toys once illustrated a generation's fantasies



Photo: Dom Magal Photography

and fears of the future.

The Omnimax theater at the Museum of Science and Industry presents *Dinosaur Hunters* and the new 3-D Theater in the West Pavilion offers 20-minute 3-D films.

■ 57th St. and Lake Shore Dr.  
1-773-684-1414  
[www.msichicago.org](http://www.msichicago.org)

In the *Star Wars: Where Science Meets Imagination* exhibit, Luke Skywalker's Landspeeder is on display for the first time.

© 2006 Lucasfilm Ltd. & TM

## Lyric Opera of Chicago

**T**HE world renowned Lyric Opera of Chicago performs in one of North America's most beautiful opera houses, the Civic Opera House, that opened in 1929. Tickets go on sale in August.

■ 20 N. Wacker Dr.  
1-312-332-2244 x5600  
[www.lyricopera.org](http://www.lyricopera.org)

### Die Frau Ohne Schatten (The Woman Without a Shadow)

November 26 and 30  
A fairytale of epic proportions.  
*by Richard Strauss*  
*Conductor: Sir Andrew Davis*  
*with Christine Brewer, Robert Dean Smith and Deborah Voigt*

### Julius Caesar

November 28  
Cleopatra's seduction of Caesar  
*by Charles Gounod*  
*Conductor: Emmanuelle Haïm*  
*with David Daniels and Danielle de Niese*



## Chicago Symphony Orchestra

**November 27**

*Conductor: John Williams*  
*Program: Williams: Fanfare for a Festive Occasion*  
*Williams: Tributes! (for Seiji)*  
*Williams: The Five Sacred Trees (Bassoon Concerto)*  
*Williams: Four Pieces from American Journey*  
*Williams: Selections from The Witches of Eastwick*  
*Williams: Sayuri's Theme from Memoirs of a Geisha*  
*Williams: Adventures on Earth from E.T. The Extra-Terrestrial*

**November 29 and 30**

*Conductor: Semyon Bychkov*  
*Piano: Yundi-Li*  
*Program: Ravel: Piano Concerto in G Major*  
*Shostakovich: Symphony No. 7 (Leningrad)*



■ Chicago Symphony Orchestra  
220 S. Michigan Ave.  
1-312-294-3000  
[www.cso.org](http://www.cso.org)

### Save Money, Avoid Ticket Lines with CityPass

**A** CityPass ticket booklet containing admission tickets to the Shedd Aquarium, Adler Planetarium, Field Museum and Museum of Science and Industry, as well as the Hancock Observatory, is available for \$49.50 by visiting [www.citypass.com/city/chicago.html](http://www.citypass.com/city/chicago.html). Once you start using the CityPass, you have nine days to visit all of the included attractions.

# THEATER

## Altar Boyz

An award winning musical comedy, Altar Boyz follows a Catholic “boy band” with one Jewish member.

- Drury Lane Theatre  
Water Tower Place  
175 E. Chestnut Street  
1-312-642-2000  
[www.drurylanewatertower.com](http://www.drurylanewatertower.com)

## Behind the Emerald Curtain

Performers from Wicked: The Untold Story of the Witches of Oz (see description, this page) guide this backstage tour of the blockbuster musical’s set.

- Ford Center for the Performing Arts  
Oriental Theatre  
24 W. Randolph St.  
1-312-902-1400  
[www.ticketmaster.com](http://www.ticketmaster.com)

## Forbidden Broadway: Special Victims Unit

This witty musical spoofs well-known Broadway shows in a rowdy spectacle.

- Royal George Theatre  
1641 N. Halsted St  
1-312-902-1400  
[www.ticketmaster.com](http://www.ticketmaster.com)

## Jersey Boys

This award-winning best musical about the life of Rock and Roll Hall of Famers The Four Seasons chronicles how Frankie Valli, Bob Gaudio, Tommy DeVito and Nick Massi became one of the greatest successes in pop music history.

- LaSalle Bank Theatre  
18 W. Monroe St.  
1-312-977-1710  
[www.ticketmaster.com](http://www.ticketmaster.com)

## A Park in Our House

In Castro’s Cuba, hopes fade to dreams for a family in 1970.

- Victory Gardens Greenhouse  
2257 N. Lincoln Ave.  
1-773-871-3000  
[www.victorygardens.org](http://www.victorygardens.org)

## The Phantom of the Opera

Chicago welcomes Broadway’s longest running show—Andrew Lloyd Webber’s extraordinary love story with sumptuous sets and costumes.

- Cadillac Palace Theatre  
151 W. Randolph St.  
1-312-902-1400  
[www.ticketmaster.com](http://www.ticketmaster.com)

## Put the Nuns in Charge

In this sequel to Late Nite Catechism, a hit among those who wanted more nuns, rules of a strict Catholic upbringing are applied to today’s modern life.

- Royal George Theatre  
1641 N. Halsted St  
1-312-902-1400  
[www.ticketmaster.com](http://www.ticketmaster.com)

## The Second City

Chicago’s favorite comedy venue, the venerable Second City, has spawned stars such as John Belushi, Bill Murray and Mike Myers. The ETC stage features up-and-coming Chicago comics.

- Mainstage and ETC stage  
1616 N. Wells St.  
1-312-337-3992  
[www.secondcity.com](http://www.secondcity.com)

## Wicked: The Untold Story of the Witches of Oz

This smash hit examines the friendship between Gilda the Good Witch and the Wicked Witch of the West.

- Ford Center for the Performing Arts  
Oriental Theatre  
24 W. Randolph St.  
1-312-902-1400  
[www.ticketmaster.com](http://www.ticketmaster.com)



## Making Waves

by Blue Man Group  
Performance art and comedy meet music. Certainly not traditional theater, but fantastically popular.

- Briar Street Theatre  
3133 N. Halsted  
1-773-348-4000  
[www.blueman.com](http://www.blueman.com)  
[www.ticketmaster.com](http://www.ticketmaster.com)



## A Christmas Carol

This production of the famous Dickens tale makes even Scrooge seem magical.

- Goodman Theatre  
170 N. Dearborn St.  
1-312-443-3800  
[www.goodman-theatre.org](http://www.goodman-theatre.org)

## Chicago Children’s Museum

CHICAGO Children’s Museum is committed to creating a community where play and learning connect. More than 12 interactive exhibits and new programs offer hours of creative play. Hands-on exhibits are creatively focused on science, literacy, humanities and the arts. As part of the museum’s winter theme, children can skate in their stocking feet to festive, wintry music in the “ice rink.” Call in November to reserve a place in one of the gingerbread workshops being offered in partnership with the Culinary and Hospitality Institute of Chicago.

- 700 E. Grand Ave. (on Navy Pier)  
1-312-527-1000  
[www.chicildrensmuseum.org](http://www.chicildrensmuseum.org)

## Lincoln Park Zoo

The Lincoln Park Zoo is the oldest zoological garden in the country, as well as one of the most modern. Casting a festive glow on the zoo grounds, the ZooLights Festival is a nightly event during the holiday season.

- 2200 N. Cannon Dr.  
1-312-742-2000  
[www.lpzoo.com](http://www.lpzoo.com)



## American Girl Place

Shoppers at American Girl Place may choose among the beautiful dolls and catch *American Girls Review* in the theater. Lunch, tea and dinner are served at The Café. Reservations are recommended.

- 111 E. Chicago Ave.  
1-877-247-5223  
[www.americangirl.com](http://www.americangirl.com)

## Navy Pier IMAX Theatre

The Navy Pier IMAX theatre will announce its holiday film schedule in late autumn.

- 700 E. Grand Ave.  
1-312-595-5629  
[www.imax.com/chicago](http://www.imax.com/chicago)

FAMILY PERFORMANCES

Photo: Michael Breslow

FAMILY ACTIVITIES



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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 May 19–June 15, 2007.

Donors who achieve milestones with their cumulative giving are recognized through the Foundation's Visionary Donor Program.

For more information on Foundation activities, go to [RSNA.org/foundation](http://RSNA.org/foundation).

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**\$15,000**

A Vanguard company since 1990

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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.**

## New Web Site Highlights Silver Anniversary Campaign

As part of its Silver Anniversary celebration, the RSNA Research & Education (R&E) Foundation has created a Web site to track the progress of the \$15 million Fund Radiology's Future campaign.

Web site visitors can learn about the impact of 25 years of grant funding in radiology, as well as questions posed for the future of biomedical imaging. Profiles of grant recipients, updates on

research projects and recognition of donors are designed to bring the entire radiology community together in support of the profession.

To watch campaign progress and donate online to help the Foundation reach its \$15 million goal by RSNA 2009, go to [RSNA.org/campaign](http://RSNA.org/campaign).



# Journal Highlights

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

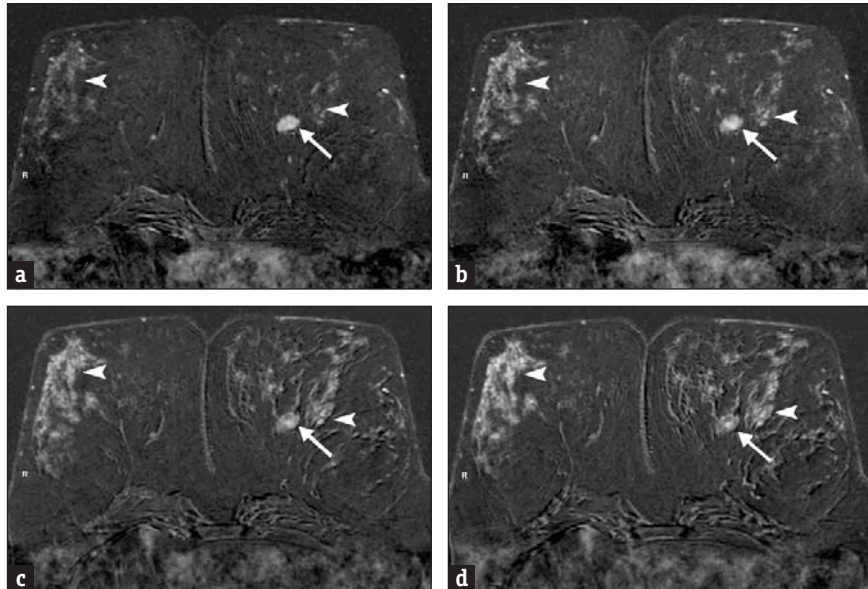
## The Current Status of Breast MR Imaging, Part I: Choice of Technique, Image Interpretation, Diagnostic Accuracy, and Transfer to Clinical Practice

**A**FTER AN enthusiastic start to clinical breast MR imaging in the early 1990s, a variety of obstacles—lack of standardization regarding image acquisition and interpretation guidelines, lack of MR-compatible interventional materials and lack of evidence regarding its diagnostic accuracy and sensitivity for ductal carcinoma in situ—hampered its transfer into clinical practice.

The first of two State of the Art articles on the current status of breast MR imaging appears in the August issue of *Radiology* ([RSNA.org/radiologyjnl](http://RSNA.org/radiologyjnl)). Christiane Kuhl, M.D., of the Department of Radiology at the University of Bonn, Germany, reviews the pathophysiologic basis of breast MR and its effects on acquisition technique and diagnostic accuracy, as well as the

*Continued on next page*

**Radiology**



**Standard dynamic protocol for bilateral dynamic subtracted breast MR imaging in a 53-year-old patient with invasive ductal cancer.**

Images were obtained with transverse 2D gradient-echo (GRE) pulse sequence before and after bolus injection of contrast material. The same section is displayed throughout the dynamic series, from 69 seconds after injection (a) to four minutes 36 seconds after injection (d). Contrast between cancer (arrow) and normal fibroglandular tissue (arrowheads) on both sides is best on a, very early in postcontrast phase. Owing to strong washout effect of the cancer and progressive signal intensity increase of normal parenchyma, the cancer may even be overlooked on d, and assessment of fine morphologic details will not be feasible on this delayed postcontrast image.

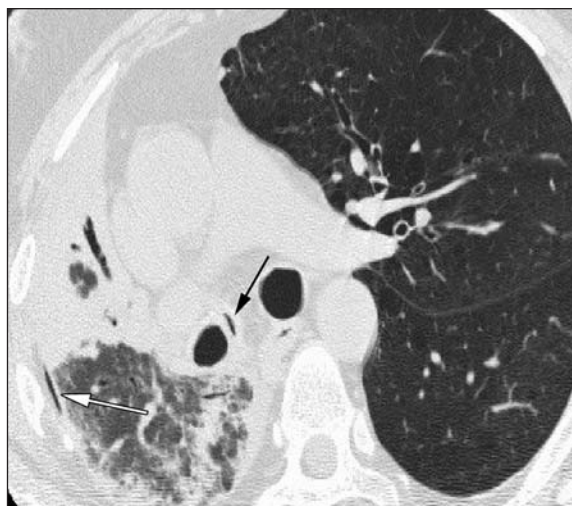
(*Radiology* 2007;244:356–378) © RSNA, 2007. All rights reserved. Printed with permission.

## Postoperative Complications of Lung Transplantation: Radiologic Findings along a Time Continuum

**R**ADIOLOGIC IMAGING, particularly chest radiography, CT and high-resolution CT, is critical for the early detection, evaluation and diagnosis of complications after lung transplantation. Complications range from a size mismatch between the donor lung and recipient thoracic cage to

*Continued on next page*

**RadioGraphics**



**Bronchial dehiscence in a patient with a right lung transplant for a1-antitrypsin deficiency.**

Axial chest CT image, obtained more than four weeks after lung transplantation, shows a crescent of air outside the airway (black arrow), medial to the right main bronchus. This finding was due to an anastomotic leak. A small pneumothorax (white arrow) represents a bronchopleural fistula.

(*RadioGraphics* 2007;27:957–974) © RSNA, 2007. All rights reserved. Printed with permission.

## The Current Status of Breast MR Imaging, Part I: Choice of Technique, Image Interpretation, Diagnostic Accuracy, and Transfer to Clinical Practice

Continued from previous page

diverging demands of high spatial and temporal resolution and different acquisition approaches. In addition, Dr. Kuhl details:

- Advantages and disadvantages of different pulse sequence parameters
- Imaging findings in common benign and malignant changes

- Current concepts for differential diagnosis
- Recent progress, particularly with regard to the development of guidelines, procedural standardization and MR-guided interventions

Better integrating MR into breast imaging fellowship programs will further promote its use in clinical practice,

Dr. Kuhl concludes. "Breast imaging fellowship programs should embrace MR as a natural component of the contemporary breast imaging armamentarium and train breast radiologists to become competent MR users—not only as far as breast imaging is concerned, but in the broadest sense of the word," she writes.

## Postoperative Complications of Lung Transplantation: Radiologic Findings along a Time Continuum

Continued from previous page

pulmonary embolism.

In an article in the July-August issue *RadioGraphics* ([RSNA.org/radiographics](http://RSNA.org/radiographics)), Mayil S. Krishnam, M.D., of the Department of Radiological Sciences in the David Geffen School of Medicine at the University of California, Los Angeles, and colleagues note that to enable selection of effective and relevant therapy and ultimately decrease morbidity and mortality among lung transplant recipients, radiologists must be able to recognize and understand the imaging manifestations of posttransplantation complications.

Describing the pulmonary complications that may occur after lung transplantation, Dr. Krishnam and colleagues identify relevant imaging features and point out temporal relationships and pathologic processes. Noting that complications are best classified in relation to the point at which they occur along the postoperative time continuum to help clinicians narrow the differential diagnosis, the authors address such complications as:

- Immediate (less than 24 hours)
- Early (24 hours to one week)
- Intermediate (eight days to two months)

- Primary late (two to four months)
  - Secondary late (more than four months)
  - Transbronchial biopsy-associated
- "By recognizing the relevant radiologic manifestations and identifying their temporal relationships to transplantation, radiologists can help clarify the

wide spectrum of nonspecific, overlapping and sometimes confusing clinical and imaging findings of complications after lung transplantation," they conclude.

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

### Latest Report Shows *Radiology* Leads in Impact Factor, Citations

*Radiology* has the highest impact factor among general diagnostic imaging journals, while the impact factor for *RadioGraphics* continues to rise and is second only to *Radiology* among widely read radiology journals, according to 2006 *Citations Reports*® from the Thomson/Institute for Scientific Information Annual Citation.

The data also show that *Radiology* has more citations than any other radiology journal. *Citations Reports* covers more than 7,500 of the world's peer-reviewed journals in approximately 200 disciplines.



## New *RadioGraphics* Quality Section to Launch in 2008

A NEW SECTION of *RadioGraphics* devoted to quality improvement topics will debut in the January–February 2008 issue of *RadioGraphics*. The section will be edited by recently appointed Associate Editor Jonathan B. Kruskal, M.D., Ph.D.

The new section will support all radiologists in meeting practice quality improvement (PQI) requirements of the American Board of Radiology maintenance of certification (MOC) program, said Dr. Kruskal. "The new quality improvement section aims to be the premier educational and practical reference tool in radiology for improving the quality and safety of patient care by educating radiologists, including those still in training, in the methodologies and practical applications of continuous quality improvement," he said.

Potential topics to be covered in the new

section include establishing and maintaining a comprehensive radiology quality improvement program, radiology peer review, quality improvement terminology and the impact of ergonomics and reader fatigue. Award-winning quality improvement projects from national society meetings and quality outcomes projects conducted by residents are also forecast as content for the new section.

"By educating radiologists in the methodologies for practical implementation of quality improvement, we will help satisfy our primary goal of improved patient care and safety," said *RadioGraphics* Editor William W. Olmsted, M.D.

Authors interested in submitting unsolicited work on quality topics should do so via [RSNA.org/rxpress](http://RSNA.org/rxpress).

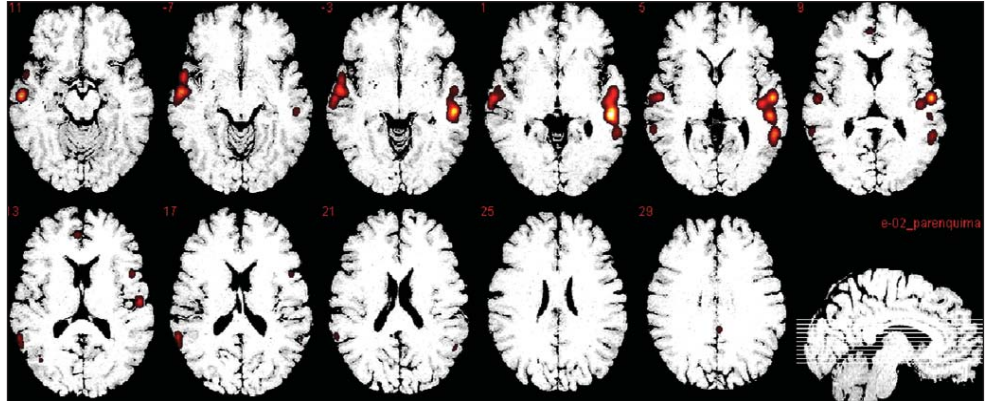
# Radiology in Public Focus

Press releases have been sent to the medical news media for the following articles appearing in the August issue of *Radiology* ([RSNA.org/radiologyjnl](http://RSNA.org/radiologyjnl)):

## Chronic Auditory Hallucinations in Schizophrenic Patients: MR Analysis of the Coincidence between Functional and Morphologic Abnormalities

**I**N schizophrenic patients with chronic auditory hallucinations, coincidence maps of functional abnormalities associated with auditory emotional stimuli and focal brain density reductions may be useful for post-treatment follow-up.

Luis Martí-Bonmatí, M.D., Ph.D., of the University of Valencia School of Medicine in Valencia, Spain, and colleagues studied morphologic and functional MR brain images of 21 patients diagnosed with schizophrenia who experienced chronic auditory hallucinations that persisted after the use of antipsychotic medication. The researchers found large coinciding brain clusters in the left and right middle temporal and superior temporal gyri, as well as smaller coinciding clusters in the left posterior and right anterior cin-



**Functional MR images showing coincidence maps.**

Highlighted areas indicate increased activation associated with emotional auditory stimuli and decreased gray matter volume. Yellow areas represent greater values for functional and morphometric statistical source images. Selected clusters can appear in white matter by partial volume effects after spatial smoothing.

(*Radiology* 2007;244:549–556) © RSNA, 2007. All rights reserved. Printed with permission.

gular gyri, left inferior frontal gyrus and middle occipital gyrus. These areas are related to the abnormal neural network involved in the auditory emotional dysfunction seen in these patients, the researchers note.

Dr. Martí-Bonmatí and colleagues report that all patients experienced hallucinations during image acquisition, with hallucinations activating structures

usually involved in the perception of external voices, with additional activation of areas responsible for emotion processing. This activation “may express the adoption of a modified strategy to perform adequately by using different cognitive skills and engaging different brain regions,” according to the researchers.

## Cancer Yield of Mammography, MR, and US in High-Risk Women: Prospective Multi-Institution Breast Cancer Screening Study

**MR** IMAGING is an important complement to mammography in screening women at high risk for breast cancer, according to researchers.

Constance D. Lehman, M.D., Ph.D., of the Department of Radiology at the University of Washington, and colleagues note that while aggressive surveillance consisting of a mammogram and physical examination every 6 or 12 months is recommended for women at high risk for breast cancer, there is little evidence to support that

mammographic screening of this population has an impact on breast cancer mortality. In addition, mammographic sensitivity is lower in young women and women with dense breast tissue, they note.

Dr. Lehman and colleagues prospectively studied 171 women who underwent MR, ultrasound and mammography at six facilities throughout the U.S. Sixteen subsequent biopsies were performed and six cancers were detected. MR enabled detection of all

six cancers; mammography, two; and ultrasound one. The team concluded that though MR had a higher biopsy rate, it also helped detect more cancers than the other methods.

Noting that cancer onset occurs at a younger age in women at high risk, the researchers write, “it is worrisome that screening mammography alone may be insufficient to detect breast cancer at an early stage in this population.”

(*Radiology* 2007; 244:381–388)

*Continued on next page*

Continued from previous page

## Intracranial Aneurysms: Role of Multidetector CT Angiography in Diagnosis and Endovascular Therapy Planning

**T**HE performance of multidetector CT angiography (MDCTA) in diagnosing intracranial aneurysms is equivalent to that of selective digital subtraction angiography (DSA), without the risks of morbidity and mortality, researchers have found.

Karsten Papke, M.D., of the Departments of Radiology and Neuroradiology at Klinikum Duisburg in Duisburg, Germany, and colleagues studied the sensitivity, specificity, positive predictive value and negative predictive value

of MDCTA. They found MDCTA correctly identified 80 of 84 aneurysms in 62 of 63 patients, with accuracy nearly identical to that of DSA. They also found that endovascular coiling of intracranial aneurysms can be reliably detected with MDCTA data.

The advent of MDCTA has overcome past technical limitations of CT angiography to enhance the virtually unlimited viewing angles in 3D views, Dr. Papke and colleagues note.

“We conclude that MDCTA—if

available—can be used as the first step in the diagnostic workup of subarachnoid hemorrhage,” they conclude. The researchers add that while DSA remains necessary to demonstrate alternative bleeding sources or to rule out aneurysms after an MDCTA study is negative, a diagnostic-only DSA can be avoided when MDCTA demonstrates the ruptured aneurysm, especially those that appear at MDCTA to be good candidates for coiling.

(*Radiology* 2007; 244:532–540)

## Media Coverage of Radiology

**I**N June, media outlets carried 136 news stories generated by articles appearing in *Radiology*. These stories reached an estimated 99 million people.

News releases promoted findings from studies on ultrasound-focused surgery to treat uterine fibroids (*Radiology* 2007;243:885-893), virtual autopsy to diagnose drowning (*Radiology* 2007;243:862-868) and the use of MR to gauge prognosis after spinal cord injury (*Radiology* 2007;243:820-827).

Coverage included print placements in *The Times* (London), *Baltimore Sun*, *Deseret Morning News* (Salt Lake City), *Modern Healthcare* and *Fidelity+*. Broadcast placements include WGN-TV (Chicago superstation) and WFTV-TV (Orlando). Prominent Web placements included Yahoo! News, Medscape, *washingtonpost.com*, *cnn.com*, *ajc.com*, *drkoop.com* and *healthcentral.com*.

## Public Information Activities Feature Women's Imaging

In August, RSNA's 60-Second Checkup radio program focuses on imaging during pregnancy and to investigate infertility in women. Topics will be 3D obstetric ultrasound, use of MR during pregnancy, hysterosalpingography to detect tubal patency and ultrasound to assess fibroids and other uterine diseases.

## RSNA MEMBER BENEFITS

### RSNA at AHRA

RSNA Manuscript Editor Kimberly Franks (left, in left photo) and Advertising Senior Manager Judy Kapičak promoted RSNA at the American Healthcare Radiology Administrators meeting in Orlando last month. More than 600 visitors to the tradeshow booth learned about the RSNA annual meeting and Career Connection Web site ([RSNA.org/career](http://RSNA.org/career)).





# Working For You

## RSNA Committees

RSNA News continues its series highlighting the work of RSNA's volunteer committees with a look at the Technical Exhibits Committee.

### Technical Exhibits Committee

WITH HUNDREDS of companies seeking exhibit space at the RSNA annual meeting, the Technical Exhibits Committee's task of reviewing and approving applications is essential. The committee helps to ensure that only products and services directly related to the teaching or practice of radiology are eligible to exhibit. Members work closely with exhibiting companies, seeking to understand their needs and help them attain the best exposure while applying RSNA policies and regulations in order to bring attendees the most beneficial educational experience.

Dennis Kay, M.D., committee chair, said the success of the technical exhibition has a lot to do with the committee's responsiveness. "We try to listen to what our customers have to say and understand what they face as they plan for such a large event," he said. "We make improvements and adjustments to benefit both our participating companies and our members."

#### Working for you COMMITTEE PROFILE

The committee's high standards and attention to the interests of both exhibitors and attendees have not gone unnoticed. Last year the RSNA Technical Exhibition was ranked #1 by *Tradeshows Week* among medical trade shows in the U.S. and Canada. For many years, it has also been consistently ranked among the top 200 trade shows in the country.

Exhibiting firms come from as far away as Sweden, Australia and the Republic of Korea to display their products and services. Exhibitors include large multimodality equipment vendors, film image management firms and medical publishers, as well as a number of small companies demonstrating a single product. Enrollment and exhibit space for the technical exhibition continue to increase steadily each year.



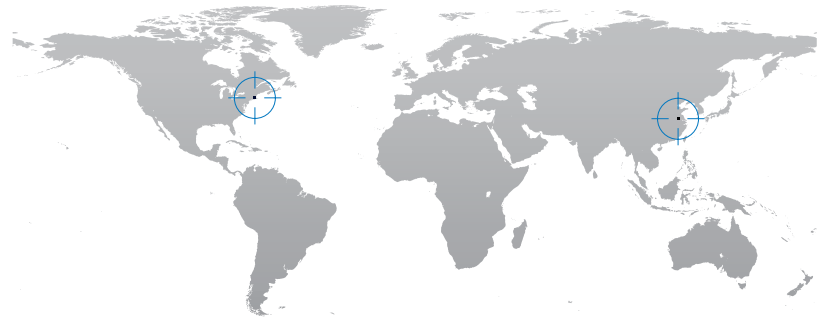
Dennis Kay, M.D.

### Updated Radiation Biology Syllabus Available Online

A free PDF of the *2007 Syllabus: Radiation Biology for Diagnostic and Interventional Radiologists (5th edition)* is now available online. The syllabus retains the general format of the fourth edition, with various topics updated. Informational content has been expanded to include MR imaging and ultrasound. The conversion to a Web-based instructional publication will facilitate more frequent revisions. Wayne R. Hedrick, Ph.D., is the editor, with Mahadevappa Mahesh, Ph.D., as a contributor. To access the syllabus, go to [RSNA.org/Education/upload/Syllabus\\_RadiationBiology\\_2007.pdf](http://RSNA.org/Education/upload/Syllabus_RadiationBiology_2007.pdf).



### Rhode Island, China are Next Steps for RSNA



RSNA staff will promote its research and education programs, RSNA journals and the benefits of RSNA membership at meetings this fall in the U.S. and abroad.

Sept. 7-11, the RSNA tradeshow booth will be at the Academy of Molecular Imaging (AMI) and Society for Molecular Imaging (SMI) joint con-

ference in Providence, R.I. The booth will also be present for Imaging in Molecular Medicine 2007, a pre-conference symposium sponsored by AMI, RSNA, SNM and SMI.

RSNA then travels to Nanjing, China, Oct. 19-21 for the 14th Annual Chinese Congress of Radiology.

If you have a colleague who would like to become an RSNA member, you can download an application at [RSNA.org/mbrapp](http://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](mailto:membership@rsna.org).

# Program and Grant Announcements

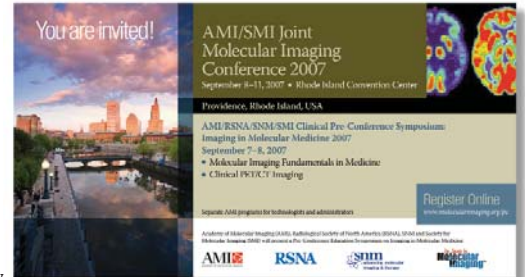
## Academy of Molecular Imaging (AMI)/RSNA/SNM/ Society for Molecular Imaging (SMI) Pre-Conference Symposium: Imaging in Molecular Medicine 2007

September 7-8 • Providence, R.I.

Registration continues for this symposium immediately preceding the AMI/SMI Joint Molecular Imaging Conference. The symposium comprises two clinical tracks:

- Molecular Imaging Fundamentals in Medicine—introduction and overview of molecular imaging
- Clinical PET/CT Imaging—essentials of clinical PET/CT

More information is available at [www.molecularimaging.org](http://www.molecularimaging.org) or by contacting Fiona Miller at [fmiller@rsna.org](mailto:fmiller@rsna.org) or 1-630-590-7741.



## Financial Planning Opportunities at RSNA 2007

RSNA will offer two informative investment seminars on Saturday, November 24, at McCormick Place just prior to RSNA 2007. In simple and direct language, these educational courses will help attendees reach their financial goals and plan a sound financial future. The seminars include no sales pitch and each comes with its own specific textbook.



### Effective Retirement Plans and Distribution Strategies

Presented by Barry Rubenstein, B.S., J.D., L.L.M.

This course will demonstrate how to evaluate and manage existing plans, including whether to terminate, and how to identify the advantages and disadvantages of different plan maintenance, withdrawal, and termination strategies, including the impact of recent tax legislation.

### Effective Real Estate Investment Strategies

Presented by J. Michael Moody, M.B.A.

This fast-paced course will focus on finding, evaluating, financing, acquiring and selling investment real estate.

Register for these seminars online at [RSNA.org/register](http://RSNA.org/register) or use Registration and Housing Form 1 included in the Advance Registration, Housing and Course Enrollment brochure. Annual meeting registration is required to enroll in these seminars. These seminars do not qualify for *AMA PRA Category 1 Credit*™. For more information, contact the RSNA Education Center at 1-800-381-6660 x7772 or email [ed-ctr@rsna.org](mailto:ed-ctr@rsna.org).

### Tools for Success in the Practice of Radiology

Held June 29-30 at RSNA Headquarters in Oak Brook, Ill., this seminar paired vital components of effective leadership with established techniques that create and sustain success in radiology practices. Sessions on leadership, planning, staff development and quality and safety were designed to help current and future radiology leaders confidently manage day-to-day leadership issues on the job.

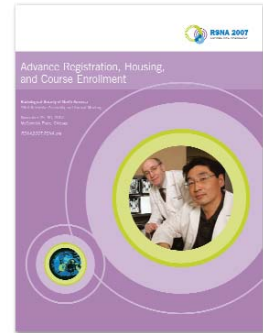


# News about RSNA 2007

## Enroll for Courses, Tours and Events

**S**PACE remains in many of the courses to be offered at RSNA 2007. 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, as well as online registration, are available at [RSNA.org/register](http://RSNA.org/register). Openings are also still available for many

Chicago tours and events offered during RSNA 2007. The RSNA Tours & Events brochure is available by clicking Tours & City Events in the left-hand column at [RSNA2007.RSNA.org](http://RSNA2007.RSNA.org). Registration for RSNA 2007 is required in order to enroll for courses, tours and events. More information about Chicago events and attractions is available on Page 14.



## Registering for RSNA 2007

There are four ways to register for RSNA 2007:

### 1 Internet

Go to [RSNA.org/register](http://RSNA.org/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](mailto:rsna@experient-inc.com).

**Fastest way to register!**

### 2 Fax (24 hours)

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

### 4 Mail

Experient/RSNA 2007  
108 Wilnot Rd.,  
Suite 400  
Deerfield, IL 60015-5124  
USA

### 3 Telephone

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

## Registration Fees

BY 11/5	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, Industry Personnel
\$300	\$300	One-day registration to view only the Technical Exhibits area

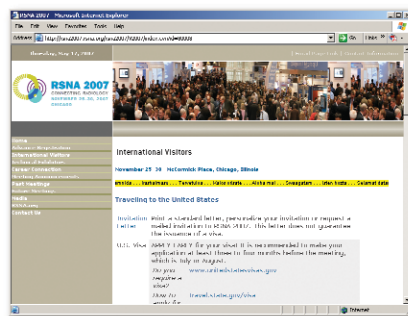
■ For more information about registering for RSNA 2007, visit [RSNA2007.RSNA.org](http://RSNA2007.RSNA.org), e-mail [reginfo@rsna.org](mailto:reginfo@rsna.org) or call 1-800-381-6660 x7862.

## International Visitors

Personalized invitation letters are available by going to [RSNA2007.RSNA.org](http://RSNA2007.RSNA.org) and clicking International Visitors. This section of the annual meeting Web site also includes important information about visa applications. Visa applicants are advised to apply as soon as they decide to travel to the United States an at least **three to four months** in advance of their travel date. It is recommended that international visitors start the visa process now.

For more information, go to:

- [www.unitedstatesvisas.gov](http://www.unitedstatesvisas.gov)
- [travel.state.gov/visa](http://travel.state.gov/visa)
- [nationalacademies.org/visas](http://nationalacademies.org/visas)



## Arrange Childcare

Children under the age of 16 will be allowed to ride the RSNA shuttle buses; however, they will not be allowed to attend the meeting. Onsite childcare is available for children six months to 12 years through ACCENT on Children's Arrangements, Inc. Online registration and application forms are available at [RSNA2007.RSNA.org](http://RSNA2007.RSNA.org). Click Childcare Services in the left-hand column under Advance Registration.

## Important Dates for RSNA 2007

<b>Oct. 26</b>	International deadline to have full-conference badge and tickets mailed in advance
<b>Nov. 5</b>	Final advance registration, housing and course enrollment deadline
<b>Nov. 25–30</b>	RSNA 93rd Scientific Assembly and Annual Meeting

## Receive Registration Materials Before Meeting

RSNA will mail registration materials in advance of the annual meeting to all North American attendees who register by November 5. RSNA will mail materials in advance of the meeting to international attendees who register by October 26.

Materials enclosed in the registration wallet include:

- **Name badge and holder**—At RSNA



2007, RSNA will track attendance in the Technical Exhibit Halls and Lakeside Learning Center using radiofrequency identification, also known as RFID. RFID badge scanning is a noninvasive way to track attendance and exhibit booth participation. No personal information is stored on the RFID chip, only an identification number. Badges will be scanned to

obtain total attendance counts, exhibit booth participation and exhibit floor traffic flow through the entrances.

- **Course and tour tickets** (as requested)
- **Attendance vouchers**
- **Free pass for the Chicago Metra train system**
- **Airport shuttle discount coupon**

Registration materials also include an ExpoCard™ and *Pocket Guide*.

### ExpoCard™

ExpoCard™ is an electronically-personalized business card attendees can use at the technical exhibition to request exhibitor information. The card is encoded with the holder's name, institution, address, e-mail, address, phone/fax numbers and radiologic specialty. Attendees who prefer that exhibitors contact them at a different address than the one used during advance registration should provide alternate information directly to the exhibitor at the point of contact. Attendees may also visit either Help Center at McCormick Place to change the registration and ExpoCard detail.



### Pocket Guide

The RSNA 2007 *Pocket Guide* is an easy-to-use reference guide with two main sections:



#### Overview of the RSNA Scientific Assembly and Annual Meeting

- Complete A-Z listing of everything available to attendees
- Room assignments for the scientific sessions, refresher courses, multi-session courses and plenary sessions
- Floor plans of each building and each floor of McCormick Place

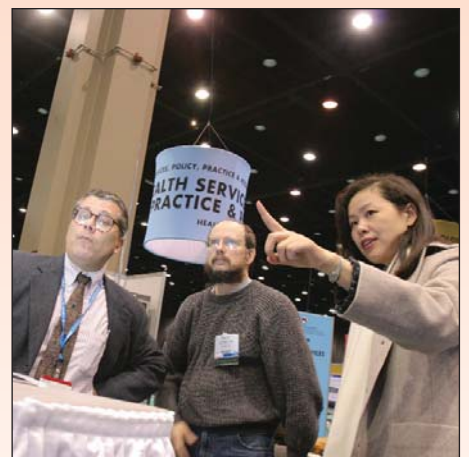
### Traveling to and from McCormick Place

- Shuttle bus schedules, routes and boarding locations
- Taxi fees, loading and unloading areas
- Airport transportation service with times, costs and boarding information
- Complete Metra train schedule outlining station locations, times and drop-off destinations
- Parking lot locations, hours and fees

Transportation information is also available online. Go to [RSNA2007.RSNA.org](http://RSNA2007.RSNA.org) and click Transportation Guide.



Hundreds of RSNA 2007 offerings—plenary sessions, special focus sessions, multi-session courses, refresher courses and scientific paper sessions, as well as scientific posters, education exhibits and informatics exhibits—offer abundant continuing medical education opportunities. By participating fully in the annual meeting, each physician can earn up to 85.75 *AMA PRA Category 1 Credits™*.



**RSNA 2007**

CONNECTING RADIOLOGY

**93rd Scientific Assembly and Annual Meeting**  
November 25–30, 2007  
Chicago

# Exhibitor News

## Hands-on Computer Workshop Registration is Now Open

**S**ix radiology industry leaders—Agfa Healthcare, Confirma, GE Healthcare, Philips, Siemens Medical Solutions and U-Systems—have reserved classrooms in the Lakeside Learning Center to conduct sessions on their respective proprietary computer systems during RSNA 2007. Each session accommodates up to 30 participants, so interested attendees are encouraged to reserve seats as soon as possible. Advance online registration is required for these workshops. For the complete schedule and online registration, go to [RSNA2007.RSNA.org](http://RSNA2007.RSNA.org).



At a planning meeting in late June in Chicago, RSNA 2007 exhibitors were able to view maps of the technical exhibit halls, and learn the locations of their booths.

## Publishers Row an RSNA 2007 Must-See

One of the most popular destinations within the RSNA Technical Exhibition is Publishers Row, located inside Hall A of the South Building. More than 20 leading publishers, including the RSNA Education Store, display their medical books and products in Publishers Row.

Attendees should also remember the RSNA Publisher Partners program when browsing Publishers Row. Partic-

ipating Publisher Partners offer discounts of at least 10 percent to RSNA members on the purchase of popular medical books and products. Specific discounts and instructions for obtaining them are indicated in the Publisher Partners section of [RSNA.org](http://RSNA.org). Click Membership in the left-hand sidebar of the home page and select Publisher Partners from the drop-down menu.

## View Current Exhibitor List Online

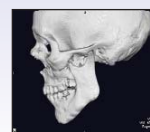
Plan your participation at RSNA 2007 early by using a searchable database of RSNA 2007 technical exhibitors at [RSNA.org/showcase](http://RSNA.org/showcase). Updated weekly, this database includes a list of the technical exhibitors, booth numbers and contact and company information, as well as an interactive floor plan.

## MEETING WATCH RSNA HIGHLIGHTS™ 2008

# News about RSNA Highlights™

**Beginning September 4, register for RSNA Highlights™ 2008 at [RSNA.org/Highlights](http://RSNA.org/Highlights).**

RSNA Highlights 2008 will be held Feb. 18–20 at the Ritz-Carlton/JW Marriott Orlando, Grande Lakes in Florida. RSNA Highlights will present refresher courses from RSNA 2007, as well as some new courses. Topics include cardiac imaging, head and neck imaging, thoracic imaging and breast imaging. RSNA Highlights also will feature electronic education exhibits from RSNA 2007.



# Product News

## NEW PRODUCT

### Medical Disc Publisher

**C**ODONICS ([www.codonics.com](http://www.codonics.com)) has introduced the Virtua XR Medical Disc Publisher. The Virtua XR can burn a disc per minute—or more than 60 CDs or 30 DVDs in an hour—making it up to five times faster than the competition, according to the company. Specifically designed for high-volume imaging applications, the Virtua XR includes an embedded computer, robotic disc handler, dual CD/DVD drives and high-speed color label printer. A 15" liquid crystal display touchscreen allows users to configure the unit, control which studies are recorded and monitor the status of the device. Users can select CDs or DVDs, or the software will automatically select the correct medium based on the size of the study. In automatic mode, Virtua XR records one or more studies for the same patient on a single disc without user intervention. Disc-creation logs assist with HIPAA compliance and automatically generate discs compliant with Integrating the Healthcare Enterprise (IHE®) portable data for imaging (PDI) standards.



## PRODUCT UPGRADE

### Enhanced Speech Recognition Reporting

Nuance Communications, Inc. ([www.nuance.com](http://www.nuance.com)) has launched its PowerScribe® Workstation 4.8 speech recognition reporting system. The new version of PowerScribe comes embedded with Vocada Veriphy, which allows physicians to send critical messages to ordering clinicians instantly via pager, cell phone or e-mail, to help eliminate delays and inaccuracies in communication, improve patient safety and streamline reporting. Also included in the latest version of PowerScribe is Amirsys STATdx clinical decision support, which allows users to access evidence-based, point-of-care reference material with the click of a button or simple voice command while creating reports. PowerScribe has also been upgraded to run on 64-bit picture archiving and communication systems and radiology information systems and includes a voice-enabled coding interface enabling users to easily enter various codes into reports for such functions as peer review, image quality and risk management.

## PRODUCT UPGRADE

### Compatible MR Biopsy System

Ethicon Endo-Surgery, Inc. ([www.ethiconendo.com](http://www.ethiconendo.com)), a Johnson & Johnson company, has launched the Universal Mammotome® MR biopsy system. Incorporating all the features of the company's first Mammotome MR, the new device is compatible with a wider variety of breast coils and magnets and can work with most grid/cube localization systems for MR lesion targeting. The device employs a unique imageable aperture that allows the physician to visually verify placement of the probe relative to the targeted lesions and has a depth locking system to provide stability and maintain consistent depth during sampling. The Mammotome MR Biopsy System can be purchased in its entirety or as an upgrade to an existing system.

## FDA CLEARANCE

### PillCam for Esophageal Imaging

Given Imaging Ltd. ([www.givenimaging.com](http://www.givenimaging.com)), has received 510(k) clearance from the U.S. Food and Drug Administration for its next generation PillCam® ESO 2 video capsule for imaging the esophagus. With advanced optics and a 21 percent increase in the angle of

view, the new PillCam was designed to give physicians a more precise view of a patient's mucosa and suspected pathology and more easily diagnose disorders such as Barrett's esophagus and esophageal varices.



Other features include automatic light control to provide optimal illumination for each image, an increased capture rate of 18 frames per second and up to 30 minutes operating time.

# RSNA.org

## CME Gateway Now Includes CAMPEP

**T**HE Commission on Accreditation of Medical Physics Educational Programs (CAMPEP) has joined the CME Gateway, an aggregation of continuing medical education and other credits issued by participating medical societies including RSNA. The CME Gateway also includes the American College of Radiology, SNM, American Roentgen Ray Society, Society of Interventional Radiology, American Society of Neuroradiology and Society for Pediatric Radiology.

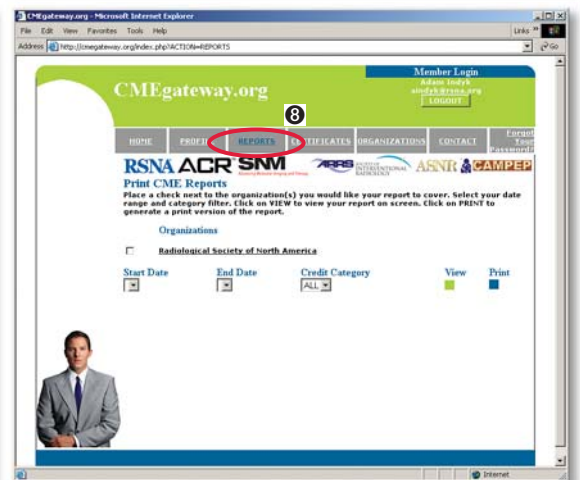
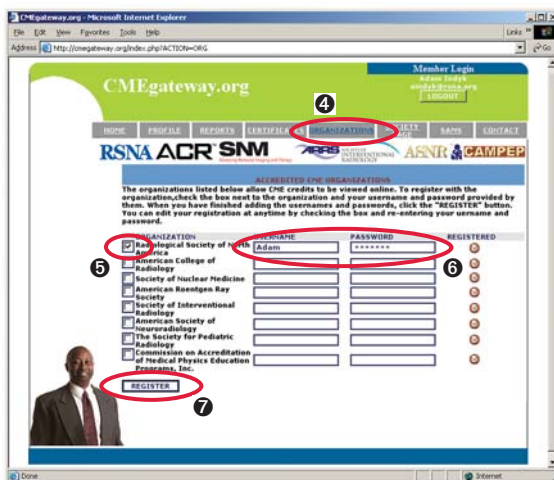
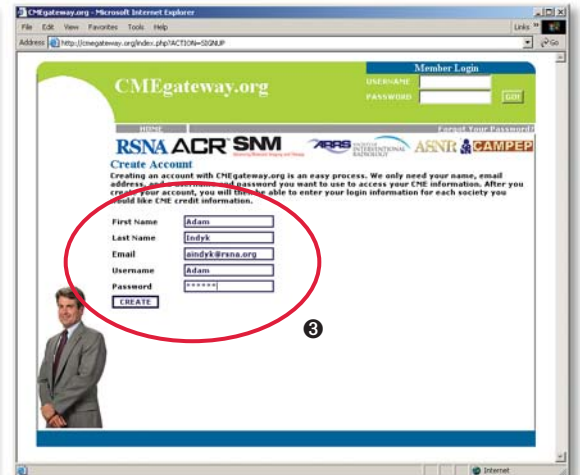
To use the CME Gateway, go to [www.CMEgateway.org](http://www.CMEgateway.org) ❶ and click Sign Up Now at the bottom of the page ❷.

Once you create an account with your name, e-mail address, username and password ❸, you can enter your login information for each society of which you are a member and from which you would like CME credit information.

For example, if you want to see your CME credits from RSNA, click the Orga-

nizations tab at the top of the page ❹. Check the box beside Radiological Society of North America ❺, enter your RSNA user name and password ❻ and then click Register ❼. This information must be entered only once per organization.

Once you are registered, you can click the Reports tab at the top of the page ❽ and set the start date and end date for the credits you would like to view and/or print as certificates.



## connections

Your online links to RSNA

**RSNA.org**

**Radiology Online**  
[RSNA.org/radiologyjnl](http://RSNA.org/radiologyjnl)

**Radiology Manuscript Central**  
[RSNA.org/radiologyjnl/submit](http://RSNA.org/radiologyjnl/submit)

**RadioGraphics Online**  
[RSNA.org/radiographics](http://RSNA.org/radiographics)

**RSNA News**  
[rsnanews.org](http://rsnanews.org)

**Education Portal**  
[RSNA.org/education](http://RSNA.org/education)

**RSNA CME Credit Repository**  
[RSNA.org/cme](http://RSNA.org/cme)

**CME Gateway**  
[CMEgateway.org](http://CMEgateway.org)

**InterOrganizational Research Council**  
[radresearch.org](http://radresearch.org)

**RSNA Medical Imaging Resource Center**  
[RSNA.org/mirc](http://RSNA.org/mirc)

**RSNA Career Connection**  
[RSNA.org/career](http://RSNA.org/career)

**RadiologyInfo™**  
RSNA-ACR patient information Web site  
[radiologyinfo.org](http://radiologyinfo.org)

**RSNA Press Releases**  
[RSNA.org/media](http://RSNA.org/media)

**My RSNA Profile & Benefits**  
[RSNA.org/memberservices](http://RSNA.org/memberservices)

**RSNA Research & Education Foundation**  
Make a Donation  
[RSNA.org/donate](http://RSNA.org/donate)

**Community of Science**  
[RSNA.org/cos](http://RSNA.org/cos)

**CQI Initiative**  
[RSNA.org/quality](http://RSNA.org/quality)

**Membership Applications**  
[RSNA.org/mbrapp](http://RSNA.org/mbrapp)

**RSNA Membership Directory**  
[RSNA.org/directory](http://RSNA.org/directory)

**Register for RSNA 2007**  
[RSNA.org/register](http://RSNA.org/register)

**RSNA 2007**  
[RSNA2007.RSNA.org](http://RSNA2007.RSNA.org)

**RSNA Highlights™ 2008**  
[RSNA.org/Highlights](http://RSNA.org/Highlights)

# Medical Meetings

## September – October 2007

**SEPTEMBER 7-8**

Academy of Molecular Imaging (AMI)/RSNA/SNM/Society for Molecular Imaging (SMI) Pre-Conference Symposium: Imaging in Molecular Medicine 2007, Rhode Island Convention Center, Providence

• [www.molecularimaging.org/2007jointconf/PreConference.php](http://www.molecularimaging.org/2007jointconf/PreConference.php)

**SEPTEMBER 8-11**

AMI/SMI, Joint Molecular Imaging Conference, Rhode Island Convention Center, Providence

• [www.molecularimaging.org/2007jointconf/](http://www.molecularimaging.org/2007jointconf/)

**SEPTEMBER 8-12**

Cardiovascular and Interventional Radiological Society of Europe (CIRSE), Annual Meeting and Postgraduate Course, Megaron Centre, Athens, Greece • [www.cirse.org](http://www.cirse.org)

**SEPTEMBER 10-11**

American Institute for Medical and Biological Engineering, Council of Societies 2nd Annual Federal Symposium, American Management Association Executive Conference Center, Washington

• [www.aimbe.org/fedsymposium](http://www.aimbe.org/fedsymposium)

**SEPTEMBER 12-16**

Society for Pediatric Radiology (SPR), 5th Symposium on Pediatric Cardiovascular MR, Cincinnati Children's Hospital Medical Center

• [www.pedrad.org](http://www.pedrad.org)

**SEPTEMBER 13-16**

Australasian Society for Ultrasound in Medicine (ASUM), 37th Annual Scientific Meeting, Cairns Convention Centre, Australia

• [www.asum.com.au](http://www.asum.com.au)

**SEPTEMBER 15-16**

Society of Computed Body Tomography & Magnetic Resonance (SCBT-MR), 4th Annual MDCT National Symposium, Westin Boston Waterfront Hotel • [www.scbtmr.org](http://www.scbtmr.org)

**SEPTEMBER 19-21**

Argentine Society of Radiology, 53rd Argentine Congress of Diagnostic Imaging and Radiation Therapy, Sheraton Hotel and Convention Center, Buenos Aires, Argentina • [www.sar.org.ar](http://www.sar.org.ar)

**SEPTEMBER 26-30**

American Society of Head and Neck Radiology (ASHNR), 41st Annual Meeting, The Fairmont Olympic Hotel, Seattle

• [www.ashnr.org](http://www.ashnr.org)

**OCTOBER 3-6**

American Society of Emergency Radiology (ASER), Annual Scientific Meeting and Postgraduate Course, Hyatt Regency La Jolla, San Diego • [www.erad.org](http://www.erad.org)

**OCTOBER 3-6**

Society of Chairmen of Academic Radiology Departments (SCARD), Fall Meeting, Fairmont Banff Springs, Alberta, Canada

**OCTOBER 4-7**

Royal Australian and New Zealand College of Radiologists (RANZCR), 58th Annual Scientific Meeting, Melbourne Exhibition and Convention Centre, Australia • [www.ranzcrasm.com/](http://www.ranzcrasm.com/)

**OCTOBER 4-9**

North American Society for Cardiac Imaging (NASCI), 35th Annual Meeting, JW Marriott Hotel, Washington

• [www.nasci.org](http://www.nasci.org)

**OCTOBER 10-11**

American Healthcare Radiology Administrators (AHRA), Imaging Center Administrators Conference, Westin Savannah Harbor Golf Resort and Spa, Georgia • [www.ahraonline.org](http://www.ahraonline.org)

**OCTOBER 10-13**

International Skeletal Society, 34th Radiology and Pathology Refresher Courses, InterContinental Hotel Budapest, Hungary

• [www.internationalskeletalsociety.com](http://www.internationalskeletalsociety.com)

**OCTOBER 11-13**

Brazilian College of Radiology, 36th Congress, Salvador da Bahia, Brazil • [www.radiologia2007.com.br](http://www.radiologia2007.com.br)

**OCTOBER 12-14**

Uruguay Society of Radiology and Imaging, 6th Congress, Montevideo, Uruguay • [www.sriu.org.uy](http://www.sriu.org.uy)

**OCTOBER 19-21**

Chinese Medical Association, 14th Annual Chinese Congress of Radiology, Nanjing, China • [www.chinaradiology.org](http://www.chinaradiology.org)

**NOVEMBER 25-30**

RSNA 2007, 93rd Scientific Assembly and Annual Meeting, McCormick Place, Chicago • [RSNA2007.RSNA.org](http://RSNA2007.RSNA.org)

**FEBRUARY 18-20, 2008**

RSNA Highlights™, Ritz-Carlton/JW Marriott Orlando, Grande Lakes, Florida • [RSNA.org/Highlights](http://RSNA.org/Highlights)

**RSNA**News

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