

RSNA *News*



RSNA 2006 Meeting Preview and Restaurant Guide

Also Inside:

- Interventional Radiologists Urged to Recruit More Patients for CORAL Study
- Omniscient Body View Possible with Flythrough Technique
- Digital Mammography Saves Technologist, Costs Physician Time
- In-Demand Radiologists Enticed with Incentives

**Final Advance Registration for RSNA 2006
November 10**

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Awards Honor RSNA as Remarkable and Influential

NAMED one of nine “remarkable” associations by the American Society of Association Executives (ASAE), RSNA is also on *RT Image* magazine’s 2006 list of the 25 most influential radiology associations.

Also named by ASAE after a multi-year, nationwide study were AARP and the American College of Cardiology, American Dental Association, Associated General Contractors of America, Girl Scouts of the USA, National Association of Counties, Ohio Society of Certified Public Accountants and Society for Human Resource Management.

The “Measures of Success Project” is the subject of ASAE’s new book, *7*

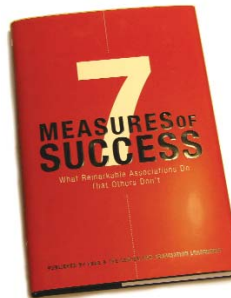
Measures of Success: What Remarkable Associations Do that Others Don’t.

All nine associations excelled in each of these success measures detailed in the book: customer service culture, alignment of products and services with mission, data-driven strategies, dialogue and engagement, CEO as a broker of ideas, organizational adaptability and alliance building.

More information about the book is available at www.asaecenter.org/bookstore.

Also included on *RT Image* magazine’s 2006 list of the 25 most influen-

tial associations, hospitals, vendors and radiology professionals were the American College of Radiology (ACR) and Society for Imaging Informatics in Medicine and Steven M. Larson, M.D., nuclear medicine chief at Sloan-Kettering Institute and a member of the RSNA *News* editorial board. A brief biography of RSNA was included with the distinction in the magazine’s Sept. 11 issue. To view *RT Image* online, go to www.rt-image.com.



RadiologyInfo™ Expands Patient Information Tools

RadiologyInfo.org, the patient information Web site sponsored by RSNA and ACR, has added new content to help radiologists and other medical professionals provide quality care to patients.

New entries added to the site describe thyroid scan and uptake, radioiodine (I^{131}) therapy, transjugular intrahepatic portosystemic shunt (TIPS), brachytherapy, breast MR, breast ultrasound, MR-guided breast biopsy and galactography.

A new homepage icon—What Does A Radiologist Do?—links patients to information detailing the key role radiologists play in their overall healthcare.

For the latest flyers, procedure handouts, exam requisition templates and more, visit *RadiologyInfo.org* and click on the Downloads for Physicians link.

RADIOLOGYINFO.ORG
The radiology information resource for patients
La fuente de información sobre radiología para pacientes

International Visiting Professor Teams Announced

The RSNA Board of Directors has announced four teams of International Visiting Professors (IVP) for 2007. The professors and their destinations are:

Algeria – June 2007

Maria Boechat, M.D., University of California, Los Angeles
Anil Khosla, M.D., Washington University and VA Medical Center

Eli Tshibwabwa, M.D., McMaster University

Honduras – July 2007

James Abrahams, M.D., Yale University
Maria Schmidt, M.D., Plano, Texas
Anina Wilkes, M.D., Thomas Jefferson University

Uganda – October 2007

Vikram Dogra, M.D., University of Rochester
Brian Mullan, M.D., University of Iowa
Sharlene A. Teefey, M.D., Mallinckrodt Institute of Radiology

A team will also visit Mexico in cooperation with the Mexican Federation of Radiology and Imaging (FMRI). The date and names of the professors will be announced later.

Each volunteer radiologist will spend 10-14 days in his or her designated country, lecturing at a national radiology meeting and visiting with local radiology residents. The IVP program is administered by the RSNA Committee on International Relations and Education (CIRE). RSNA provides each host institution syllabi, CD-ROMs and other educational materials.

For more information about the IVP program, go to RSNA.org/international/CIRE/ivpp.cfm.

RADIATION SAFETY

Question of the Month

Q A mammography fellow asks, “Can I prove that mammography causes breast cancer by reviewing the records of 1,000 women who have had annual mammograms for a decade?”

[Answer on page 12.]

NIH Grants Fund High-Tech Research Equipment

THE National Center for Research Resources (NCRR) at the National Institutes of Health (NIH) recently awarded 14 high-end instrumentation (HEI) grants to fund cutting-edge equipment required for advanced biomedical research. Included in the \$22 million was funding to purchase MR imaging systems for cancer, cardiovascular and metabolic disorder research at the University of Pennsylvania and a new PET/SPECT/CT scanner

for cancer research at Beth Israel Deaconess Medical Center.

Also financed were a high field-strength, small-animal MR imager for breast cancer and carotid artery disease research at the University of Utah and a 7-Tesla human MR system for the study of diabetes, epilepsy, psychiatric disease and learning disorders at Yale University.

A full list of grants can be viewed at www.nih.gov/news/pr/aug2006/ncrr-15.htm.



MEDICAL IMAGING COMPANY NEWS

Nighthawk One of 500 Fastest Growing Businesses

■ NightHawk Radiology Services, of Coeur d'Alene, Idaho, has been named to *Inc.* magazine's list of the 500 fastest-growing private businesses in the country. NightHawk ranks 43 on the list, with a growth rate of 1,272 percent from 2002 through 2005. The 5-year-old company arranges for U.S.-trained physicians stationed domestically and abroad to read radiologic reports 24 hours a day, seven days a week.

PEOPLE IN THE NEWS



Anne G. Osborn, M.D.



Guozhen Li, M.D.

AOSR Presents Gold Medals

Anne G. Osborn, M.D., and Guozhen Li, M.D., have received the gold medal of the Asian Oceanian Society of Radiology (AOSR).

A distinguished professor of radiology at the University of Utah School of Medicine, where she holds the William H. and Patricia W. Child Presidential Endowed Chair in Radiology, Dr. Osborn will receive the RSNA gold medal at RSNA 2006. She serves the RSNA Research & Education (R&E) Foundation Board of Trustees as a liaison for fund development.

Dr. Li, of Beijing, is a pioneering radiology researcher and educator. The "Guozhen Li Scholarship Fund" she founded has assisted young radiologists in postgraduate training since 1995. RSNA made her an honorary member in 1998.

Hricak Among Beclere Award Recipients

RSNA Board Liaison for Publications and Communications Hedvig Hricak, M.D., Ph.D., was among five physicians to recently receive the Beclere medal from the International Society of Radiology (ISR). Named for pioneering French radiologist Antoine Beclere, the medal recognizes individuals who have contributed to international radiology.

Dr. Hricak, of New York, also delivered a lecture honoring Beclere at ISR's 24th International Congress of Radiology, held last month in Cape Town, South Africa. Dr. Hricak is diagnostic radiology chair at the Memorial Sloan-Kettering Cancer Center.

ISR also presented Beclere medals to:

Guy Frija, M.D., of Paris, who also delivered a lecture honoring Walther Fuchs, a Swiss radiologist and former ISR secretary-general. Dr. Frija is secretary-general of the European Association of Radiology.

George Klempfner, M.D., of Melbourne, Australia, retiring ISR past-president.

Lilian Leong, M.D., M.B.A., of Hong Kong, a past-president of the Asian and Oceanian Society of Radiology.

Cesar S. Pedrosa, M.D., of Madrid, Spain, a prominent educator and principal author of a leading radiology textbook.



Hedvig Hricak, M.D., Ph.D.

Radiologists are Among Top Golfer-Doctors in U.S.

FIVE radiologists are among the Top 100 Golfer-Doctors in America, as ranked by *Golf Digest* in its August issue. Joseph Andriole, M.D., and Philip Zambos, M.D., tied for 11th place, while Terrell Coffield, M.D., Thomas

Win, M.D., and Stan Smazal, M.D., came in at 23, 28 and 39, respectively.

To be considered, doctors required a current United States Golf Association Handicap Index of 6.0 or better.

The ranking was part of a *Golf Digest*

feature aimed at raising golfers' awareness of healthcare and disease prevention. Doug Hanzel, M.D., a pulmonary specialist from Savannah, Ga., topped the list.

Pressman Named to Medicare Committee

Barry D. Pressman, M.D., chair of the S. Mark Taper Foundation Imaging Center and chief of the neuroradiology and head and neck radiology section at Cedars-Sinai Medical Center, has been appointed to the 2007 Medicare Coverage Advisory Committee (MCAC). The MCAC reviews clinical and scientific issues and advises the Center for Medicare & Medicaid Services on whether medical items and services are reasonable and necessary under Medicare law.

Dr. Pressman is also a member of the Board of Chancellors of the American College of Radiology. He will serve a two-year term on the MCAC.

Braff is New Chair at Vermont

Steven Braff, M.D., has been named chair of the Department of Radiology at the University of Vermont and physician leader of radiology at Fletcher Allen Health Care in Burlington, Vt. Dr. Braff had been interim department chair and physician leader since 2004.



Steven Braff, M.D.

IN MEMORIAM:

Erik Lindgren, M.D.

Neuroradiology pioneer **Erik Lindgren, M.D.**, died Dec. 21, 2005 at the age of 100.

After studying medicine at the Karolinska Institute in Stockholm, Dr. Lindgren spent his entire professional life in the Department of Radiology at Seraphimer Hospital. Dr. Lindgren presented groundbreaking work on carotid and vertebral angiography, gas myelography and pneumoencephalography.

Later named professor of Roentgen Diagnostics with Neuroradiology at the Karolinska Institute, Dr. Lindgren also was credited with turning Seraphimer Hospital into what the *American Journal of Neuroradiology* called a "Mecca of neuroradiology." He also helped educate many leading 20th-century neuroradiologists.

Dr. Lindgren was editor of *Acta Radiologica* for 31 years and served as president of Symposium Neuroradiologicum. A founder, first president and honorary member of the Swedish Society of Neuroradiology, Dr. Lindgren also was named an honorary member of RSNA, the American Society of Neuroradiology, the European Society of Neuroradiology and the neuroradiology societies of Italy and Scandinavia.



Erik Lindgren, M.D.

Image courtesy of the American Journal of Neuroradiology



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Quality and Quantity: New Measures for Radiology's Next Era

EACH YEAR'S RSNA annual meeting gives me cause to reflect on where I am in my radiology career and how my roles have shifted throughout the years. This year, I'm struck also at how the specialty is also shifting, from an era of predominantly qualitative anatomic imaging and interpretation to a quantitative one.

With its profound patient care implications, this shift compels our profession to examine new obligations in training and certification.

Examples of the quantitative evolution are numerous and extraordinary. Sixty-four slice CT scanners generate huge volumes of image data. The 10 mm-slice-thickness, 30-slice lung CT has morphed into a sub-mm, 480-slice CT scan. As Dr. Wesley Turner of GE Global Research once remarked, "Today we are looking for smaller and smaller

needles in larger and larger haystacks."

Imaging fits prominently into the growth of "personalized" medicine. Quantitative imaging biomarkers can assess treatment response in a number of diseases, and innovations such as FDG-PET, PET/MR and specifically targeted molecular imaging agents offer more possibilities. Quantitation has ramifications for interventional oncology as well, with tumor ablation refined by robotic precision, multi-parametric data streams that control the energy and trajectory of the effectors and automated determination of procedure endpoints.

Radiologists must also integrate their data with demographic, histologic, genetic and other relevant data through bioinformatics. Already under way is the National Cancer Institute's Cancer Bioinformatics Grid (caBIG), a rapidly

evolving public resource in which RSNA has played a critical role.

The current training model has built our present workforce but—though founded on sound imaging principles—it is essentially an apprenticeship built around image interpretation and pattern recognition and overwhelmingly qualitative in nature. As our profession ponders changes in training and certification, it is imperative to factor in the ongoing quantitative shift.

The pace of new technologies is brisk and the increasing demand for quantitation is inevitable. Either we meet the challenge, or others will.



Gary J. Becker, M.D.

My Turn

ONE RADIOLOGIST'S VIEW

■ Gary J. Becker, M.D., is 2006 RSNA Board Liaison for Science. A professor in the interventional section of the Department of Radiology at the University of Arizona School of Medicine, he is also a member of the Arizona Comprehensive Cancer Center and Sarver Heart Center. Dr. Becker is also associate executive director of the American Board of Radiology.

LETTER TO THE EDITOR

TO THE EDITOR:

I thank you for the interesting article on new algorithms for solving problems like the phase in x-ray crystallography or Sudoku ("Sudoku Stardom Follows Algorithm Discovery," *RSNA News*, June 2006) but I do have a few comments.

The statement, "it used to be that it was impossible for x-ray crystallography people to talk to computer science people," is not accurate. I am a radiologist and completed in 1969 a Ph.D. thesis on the crystallographic structure of purines that covered considerably the computer program systems for Fourier analyses that we used.

There have been earlier computer programs to automatically solve phase problems—a Nobel Prize in Chemistry was awarded in 1985 to Herbert A. Hauptman and Jerome Karle for "outstanding achievements in the development of direct methods for the determination of crystal structures."

HANS G. RINGERTZ, M.D., PH.D.

VISITING PROFESSOR

LUCILE PACKARD CHILDREN'S HOSPITAL AT STANFORD

DEPARTMENT OF RADIOLOGY, STANFORD UNIVERSITY MEDICAL CENTER

RESPONSE:

Modern computer programs used in x-ray crystallography rely heavily on the fast Fourier transform algorithm developed by computer scientists in the 1960s. However, it is fair to say that the interests of x-ray crystallographers and computer scientists have been, up to now, disjoint. This situation may change, however, with the recent application of phase retrieval inspired algorithms to the problems well known to computer scientists, such as 3-SAT and graph coloring.

I agree with Dr. Ringertz that phase retrieval algorithms have been around for a long time and apologize that this history was not included in the article. What has come to light recently is the fact that these algorithms are readily generalized to solve a much larger class of problems, with Sudoku being the one most familiar to the general public.

VEIT ELSER, PH.D.

PHYSICS PROFESSOR, CORNELL UNIVERSITY

Interventional Radiologists Urged to Recruit More Patients for CORAL Study

ALMOST halfway into its intended run, a major multidisciplinary study on renal artery interventions has only a fraction of the expected patient enrollment. As a result, one of the study's co-principal investigators is urging participating interventional radiologists to be more aggressive in their recruitment efforts.

Launched in late 2004, the Cardiovascular Outcomes in Renal Atherosclerotic Lesions (CORAL) trial was designed to determine if stenting atherosclerotic renal artery stenosis in patients with systolic hypertension reduces the incidence of cardiovascular and renal events. While there has been a significant increase in the number of stenting procedures, it is not known whether stents provide increased benefits over medication alone.

CORAL is the largest trial of its kind and is a collaboration of interventional radiologists and interventional cardiologists. The National Heart, Lung and Blood Institute provided \$28 million in funding for the 3-5½-year trial.

Timothy P. Murphy, M.D., an interventional radiologist at Rhode Island Hospital and Brown University Medical School in Providence, helped design the trial and is one of two principal investigators.

"Radiologists need to take a very proactive role in patient recruitment," said Dr. Murphy. He pointed out that the cardiologists who are taking part in CORAL have not only enrolled more patients, but they also have been lecturing on CORAL and have been going

out into their community to raise awareness among potential patients and referring physicians. "Radiologists need to do the same," he said.

Researchers had expected 1,000 randomized patients at this point in the study, but instead, there are 64.

RSNA News first announced the trial in the May 2004 issue. CORAL is expected to be a landmark study because it will "provide definitive answers for decades to come on how to manage patients with renal vascular disease," said Dr. Murphy.

"This is a huge opportunity to learn about patients with this disease and to maintain a role in research and patient care in peripheral arterial disease in general," he said.

Dr. Murphy also said that if radiologists don't take a more active role in this study, it may have implications regarding which specialty claims ownership of procedures, including renal artery stenting and possibly even all peripheral arterial interventions.

Timothy P. Murphy, M.D.

Radiologists need to take a very proactive role in patient recruitment.

CORAL Study Expands Worldwide

The CORAL study is under way in 86 sites in the United States and Canada, and recently expanded to Australia and New Zealand. Currently, cardiologists are performing the renal artery stent procedures at 58 sites, of which, 38 percent have enrolled patients. Mean-



■ For more information on the CORAL trial go to www.coralclinicaltrial.org.

while, radiologists are performing the stenting procedure at 27 sites, but only 15 percent have submitted randomized patients.

"Cardiology has been much more proactive than radiology and taken the study a lot more seriously," said Dr. Murphy, but added that with a more proactive approach by radiologists in North America and new radiology participants in Australia and New Zealand, the current imbalance may change.

Still, he warned that radiologists should not be complacent, "When the papers start coming out in the *New England Journal of Medicine* and the *Journal of the American Medical Association*, the people who performed the research are the people who will be getting the referrals."

Protocol May Be Stumbling Block

Dr. Murphy said he believes some radiologists haven't participated in CORAL

Continued on next page



(a) An anterior view of the abdominal aorta showing a severe renal artery stenosis on the right and moderate stenosis measuring 57% by diameter on the left. Patient was enrolled in the CORAL Study and randomized to medical therapy.



(b) Images from another CORAL patient randomized to stenting, following placement of bilateral renal artery stents.

Images courtesy of Timothy P. Murphy, M.D.

Continued from previous page

as effectively as cardiologists because they have spent too much time objecting to what he calls relatively minor aspects of the protocol. “Some interventional radiologists have been a lot more focused on the details and appear to have missed the forest for the trees,” explained Dr. Murphy.

One protocol detail that has raised some objections is the required use of distal embolic protection in the renal artery stent procedure—a practice not yet commonplace among radiologists. But,

Dr. Murphy pointed out, the interdisciplinary committee that designed the protocols tried to determine what would be state-of-the-art practice in the future. “When designing protocols, committee members have to go with what we think is best for the study,” he said.

Another protocol objection was the requirement that physicians perform contrast angiography prior to random-

ization. Dr. Murphy said recent CORAL protocol modifications allow the use of an MR angiography (MRA) or duplex ultrasound for randomization instead of angiography. The protocol updates also eliminated a controversial, time-consuming renal-artery pressure gradient requirement, although the need

for distal embolic protection has been preserved.

Still, Dr. Murphy called these protocol objections a “tempest in a teapot.”

“In the real world, there is no perfect study,” he said. “This is the study. It is what it is.”

John A. Kaufman, M.D., chief of vascular and interventional radiology at the Dotter Interventional Institute at the Oregon Health and Science University in Portland, agreed that CORAL is a very important trial and it is critical that radiologists be major participants.

“The CORAL protocol is rigorous, but I think that’s why it’s a good protocol,” said Dr. Kaufman. “It doesn’t

have a lot of loopholes in it.”

Dr. Kaufman speculated that the ways in which patients are referred to radiologists may be a hindrance to patient recruitment. “It’s only in the last three or four years that we have been developing our own referral patterns,” he said. “Radiologists don’t have large numbers of referrals of patients for renal vascular disease or hypertension evaluation.”

Expanding Referring Patterns

There is still time for radiologists to make a major contribution to this study, said Dr. Murphy. He suggested that radiology research coordinators use imaging centers to identify patients. That would involve getting waivers to review medical records and to review MRA, ultrasound and CTA examinations for patients who are not directly under their care, to find appropriate candidates and then contact their doctors to discuss the CORAL trial and encourage their patients’ enrollment in the study. □

The CORAL protocol is rigorous, but I think that’s why it’s a good protocol. It doesn’t have a lot of loopholes in it.

John A. Kaufman, M.D.

Omniscient Body View Possible with Flythrough Technique

DEVELOPERS of a new 3D flythrough imaging technique are excited about its potential to expand the uses for PET/CT.

For the first time, Stanford University researchers have fused positron emission tomography (PET) and 3D computed tomography (CT) images for a flythrough of the lungs and colon. Results of their study, which began in December 2004, were published in the July 2006 issue of the *Journal of Nuclear Medicine*.

While there has been much research in volumetric 3D imaging, it had never been applied to PET/CT fusion, said lead researcher Andrew Quon, M.D., an assistant professor of radiology and chief of clinical PET-CT at Stanford. Working closely with scientists at GE Medical Systems, he conducted the research along with Sandy Napel, Ph.D., Christopher F. Beaulieu, M.D., Ph.D., and Sanjiv Sam Gambhir, M.D., Ph.D., of the Stanford Molecular Imaging Program and Radiological Science Lab.

"3D fusion provides unique views of the body that internal organs may block," said Dr. Quon. "Our

new imaging and processing protocol can peel away the organs, highlight tumors and detect cancerous hot spots, providing an omniscient view of the body."

The authors cite a case in which their technique revealed a cancerous lesion that had not been detected by PET, CT or PET/CT.

A True Anatomical View

Dr. Quon said he looked at 3D CT images of the lungs and colon in previous studies, "But the problem with CT is that 2D or 3D images are not specific," he said. "Small and flat lesions can be difficult to see. But by fusing PET and 3D CT, we could render PET images into a 3D volume that was not previously described in the literature."

Dr. Quon theorized PET could light up polyps in a virtual colonoscopy to see which polyps to biopsy, thus further increasing the specificity of CT colonography. In CT colonography without PET, it can be difficult to identify flat lesions or distinguish polyps from stool in cases with less than perfect bowel cleansing.

In addition to enabling better cancer detection and characterization, the 3D PET/CT technique may also assist

in more effective presurgical planning. With bronchoscopies, Dr. Quon said he realized flythrough could be used to help surgeons prescreen specific sites they wish to biopsy.

With 3D CT virtual bronchoscopy, it can be difficult to identify lesions and their spatial

relationship to the patient's airway, Dr. Quon said. A PET/CT 3D rendering from a reconstruction technique, on the other hand, shows the CT anatomy as "transparent" while clearly showing FDG-PET activity in orange. "The CT has a transparent quality to it, to allow us to see behind the trachea to know where to stick a needle for a biopsy,"



Andrew Quon, M.D.
Stanford University

he said. "If the tumors aren't obvious, this imaging technique is very helpful."

A 3D rendering offers physicians a true anatomical view, Dr. Quon added. "They can previsualize the lay of the land before performing the procedure," he said. "Surgeons can use a laptop in the operating room to see the exact location of the problem areas before and during the procedure. It may give surgeons a clearer view of where to go."

Cardiac, Head and Neck Imaging Next Frontiers

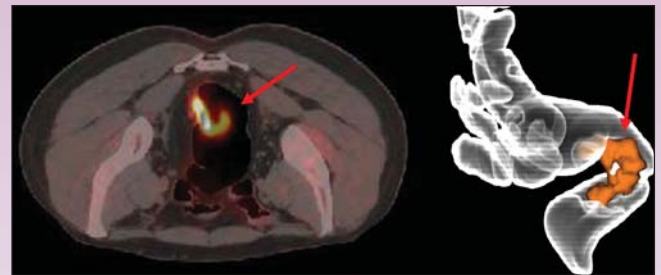
To date, radiologists at Stanford have used the technology on a small clinical sample. About 20 patients have had the chest rendering, but just four have had the colonography. "It's a less invasive procedure than a colonoscopy, but air still needs to be pumped into the colon and that still makes patients a little bit uncomfortable," Dr. Quon said.

Future work will include validation of this technique in more patients and

Continued on next page

Our new imaging and processing protocol can peel away the organs, highlight tumors and detect cancerous hot spots, providing an omniscient view of the body.

Andrew Quon, M.D.



Virtual colonoscopy using supine and prone PET/CT with air insufflation.

(left) PET/CT without air insufflation illustrating good image and lesion (arrow) coregistration. (right) 3D-rendered PET/CT colonography demonstrating lesion in its entirety.

3D-rendered PET/CT fly-around aiding spatial localization of metastatic lymph nodes.

Shown is abnormal ¹⁸F-FDG PET focus hidden behind left mainstem bronchus, as well as several additional perihilar ¹⁸F-FDG-avid lymph nodes. This image allowed clear spatial localization of lesion and guided mediastinoscopy biopsy.

Reprinted by permission of the Society of Nuclear Medicine from: Andrew Quon, Sandy Napel, Christopher F. Beaulieu, and Sanjiv Sam Gambhir. "Flying Through" and "Flying Around" a PET/CT Scan: Pilot Study and Development of 3D Integrated ¹⁸F-FDG PET/CT for Virtual Bronchoscopy and Colonoscopy. *J Nucl Med.* 2006;47:1081-1087. Figures 5 and 6.

Continued from previous page

further development of the 3D PET/CT software, he said.

One of the biggest potential applications for 3D PET/CT is cardiac imaging. "The fusion of the PET/CT image allows us to see the vasculature rendered in three dimensions. It shows how the blood is getting into the vessels and the heart," said Dr. Quon, adding that some medical groups in other parts of the world are already using the technique.

Stanford researchers, in addition to focusing on cardiac imaging and other

vasculature, are using 3D PET/CT to study the head and neck. They're also exploring the use of tracers other than FDG, such as more specific tracers to find breast cancer.

Predicting that the technology will become the standard in 3–5 years, Dr. Quon said he believes virtual CT angiography fused to 3D cardiac PET

is the most logical application of the technique. "You can use the 3D PET/CT technique to identify blockages in coronary arteries and see specific areas in the wall of the heart that are getting less blood flow and suffering from lack of oxygen," he said. □

■ To read the abstract for "Flying Through' and 'Flying Around' a PET/CT Scan: Pilot Study and Development of 3D Integrated ¹⁸F-FDG PET/CT for Virtual Bronchoscopy and Colonoscopy," go to jnm.snmjournals.org/cgi/content/short/47/7/1081.

■ Other images from the study are available on the Web site of lead author Andrew Quon, M.D.: mips.stanford.edu/research/quon/.

Molecular Imaging Zone Debuts at RSNA 2006

AT THIS YEAR'S RSNA annual meeting, molecular imaging exhibits and posters will be grouped together in an area of the Lakeside Learning Center called the Molecular Imaging Zone. Also displayed will be exhibits from federal agencies on their molecular imaging programs, as well as information about funded centers of excel-



lence in molecular imaging throughout the country. Representatives from various molecular imaging societies will also be on hand.

Though not located in the Molecular Imaging Zone, technical exhibitors with molecular imaging products will feature the Molecular Imaging Zone logo in their booths in the North and South buildings.

Molecular imaging also premieres as a subspecialty course area at RSNA 2006. Look for courses with the MI subspecialty code. To register for these or any other courses, go to rsna2006.rsna.org and click on Registration, Housing & Courses.



Digital Mammography Saves Technologist, Costs Physician Time

WHILE there's no doubt that mammography saves lives, a recent study looked at which version of the procedure saves time—and whose time is saved.

Researchers at Northwestern Memorial Hospital in Chicago found it takes technologists less time to acquire digital mammograms than it does to acquire conventional film. For radiologists, on the other hand, it takes more time to interpret a digital than a film mammogram.

"The techs love digital mammography because they don't have to process film and they can image more patients," said Eric Berns, Ph.D., assistant professor in the Department of Radiology at Northwestern University and lead author of the study. "Overall, radiologists, since they're slowed down a little bit, they're not as keen on wanting to read digital if they have film at their disposal. It's just more keystrokes at this time for reading digital."

For the study published in the July 2006 issue of the *American Journal of Roentgenology (AJR)*, Dr. Berns and colleagues compared acquisition and interpretation time for 100 digital and 100 screen film mammograms. The team found technologists spent an average 21.6 minutes acquiring screen film mammograms and 14.1 minutes for digital mammograms—a 35 percent time savings. Screen film mammography requires a technologist to leave the room, process the film and check the images before releasing the patient. Digital images are available immedi-

*It's just more
keystrokes at this time
for reading digital.*

Eric Berns, Ph.D.



Participants in the RSNA 2005 Digital Mammography Training and Self-Assessment workshop tested their accuracy in reading digital screening mammograms and gained experience with the features and functions of the latest digital mammography workstations.

ately to the person acquiring them.

For radiologists reading the exam data, the reverse was true. Radiologists took 57 percent longer to review a digital mammogram than a film—2.3 versus 1.4 minutes. Dr. Berns and colleagues found radiologists spend more time manipulating digital mammograms and that additional effort is needed to compare film to digital images.

"Film is presented, in most cases, pre-hung for radiologists on viewboxes," said Dr. Berns. "The previous image is above the current image, so they can compare this year to last year, for instance. This is the traditional way mammograms have been read in the film world.

Everything the radiologist needs to read the image is right there. The only other thing they may need, occasionally, is a magnifying glass."

Digital Offers Benefits and Drawbacks

Dr. Berns believes digital mammography's increased clarity and ability to manipulate images provide both benefits and drawbacks to the physicians. "They can do a lot more manipulation with a digital image to help pull out relevant information, whereas with film, the radiologist uses a magnifying glass as their primary tool," he said. "In digital they can zoom and pan and rotate, but because a digital image receptor has many more pixels than pixels on a review monitor, they need

Continued on next page

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to do more work to make sure they're seeing the image in full resolution."

The Northwestern team found it takes an average 15 keystrokes for a radiologist to complete his or her assessment of a digital mammogram, compared to just two for film images. That finding resonates with Stephen Feig, M.D., director of breast imaging at the University of California-Irvine Medical Center and professor of radiology at the UCI School of Medicine.

"With conventional mammography, you put the images up on the viewbox and it's very easy to arrange them to compare this year with last year's study and to compare the similar views of each breast from the current study and one breast to the other," said Dr. Feig. "With digital, comparing this year's to last year's study may take a bit longer. You also can't take a crayon and circle the digital image, as you can with film. You have to make an electronic circle. This takes longer too, putting notations on the image."

Efficiency, Quality Must Be Balanced

Drs. Feig and Berns agree there is pressure on mammography centers to

Summary of Reading Time Differences

Reviewers	Mean Interpretation Time		Percent Difference
	Screen-Film Mammography	Full-Field Digital Mammography	
Experienced Radiologists	1.2	2.0	64
Breast Imaging Fellows	1.8	2.6	51
All Readers Combined	1.4	2.3	57

AJR 2006;187:38-41. Reprinted with permission from the American Journal of Roentgenology.

increase the number of patients screened and that digital mammography is seen as one way to achieve the goal. But, said Dr. Berns, the emphasis on throughput must be balanced with the additional cost and workload for radiologists. "The radiologists are having to work longer on less efficient systems compared to what they were doing," he said. "So the radiologists are taking a step back in terms of efficiency and there isn't an instant solution."

Researchers exploring the problem said the pressure is now on the manufacturers of mammography workstations, who must listen to the needs of radiologists who specialize in women's imaging. "The vendors are working on improving their workstations and software, but for now, radiologists must use what is commercially available," said Dr. Berns. "For now, no matter

how efficient you get, you still have to do the necessary, usually manual keystrokes to read an image at full resolution to get through the case."

Dr. Feig believes radiologists are already being heard. "In the past five years there've been changes," he said. "Radiologists are attuned to which workstations are the most user-friendly, so I think there'll be a lot of competition among the companies to get user-friendly workstations." Radiologists didn't have that much input into the development of the initial workstations, he said, but now manufacturers are soliciting that necessary feedback. □

■ To read the abstract for "Digital and Screen-Film Mammography: Comparison of Image Acquisition and Interpretation Times," go to www.ajronline.org/cgi/content/abstract/187/1/38.

Other Studies Explore Mammography Compliance, MR Imaging Enhancement

SCREENING CENTERS can achieve a nearly perfect compliance rate for recall mammography for just 16 cents per patient, according to a new study from the University of Michigan.

Of 4,025 patients who were called back for another mammogram, 3,977, or 99.5 percent, returned for a diagnostic study after an average of two phone calls. The remaining 48 patients received an average of six phone calls and a registered letter, and 28 women from this group returned for additional screening. One of those 48 patients ultimately had a biopsy that

revealed breast cancer.

Study results were presented at the annual meeting of the American Roentgen Ray Society in May. Breaking down the costs of clerical time and benefits, the team found each call averaged 3.65 minutes and cost \$1.03 per case. Factoring in the cost of registered mail, the price of the recall project was \$4,581.84, or 16 cents per screening patient recalled.

Researchers in Florida and Germany, meanwhile, are piloting a unique software platform utilizing computational clinical imaging techniques to analyze and display serial-time MRI,

which is showing great promise in early breast cancer detection.

The FDA-approved techniques were developed under the direction of Heinz-Otto Peitgen, Ph.D., at MeVis, The Center for Diagnostic Systems and Visualization at the University of Bremen, Germany. Dr. Peitgen, who is also a faculty member in the Department of Mathematical Sciences at Florida Atlantic University, said he was able to use the mathematical concept of fractals—large, irregular geometric patterns made up of infinitely smaller, but identical, irregular patterns—because ducts within human breast tissue have fractal

properties.

Used in conjunction with MR imaging on a group of patients with breast cancer, the team's software revealed that more than 30 percent had additional tumors in the same breast. In almost 10 percent of the patients, the new method detected tumors in the opposite breast. Since the lesions were not previously found using mammography or ultrasound, patients had a change in their treatment course in 25 percent of cases in the study, published in the March 2005 issue of the *American Journal of Roentgenology*.

In-Demand Radiologists Enticed with Incentives

RADIOLOGISTS are still highly sought after nationwide, with organizations using a blend of incentives to entice candidates, according to statistics released by a national healthcare search and consulting firm.

According to Irving, Texas-based Merritt, Hawkins, & Associates®, radiology was the third most frequent physician search the firm conducted between March 31, 2005 and April 1, 2006. Of the 2,840 physician and certified registered nurse anesthetist (CRNA) searches conducted by the firm in all 50 states, 237 were for radiologists—a 9 percent increase over the previous year.

These findings come as no surprise to three instructors who taught sessions at an RSNA-sponsored radiology business strategies seminar last year.

“There’s no question there’s a demand,” said David C. Levin, M.D., professor emeritus of radiology at Thomas Jefferson University, who led a session titled “What to Do About the Radiology Manpower Crises.”

“It might not be as acute as it was 2 years ago, but there’s still a very significant shortage,” said Dr. Levin.

Radiologist Shortage Inevitable

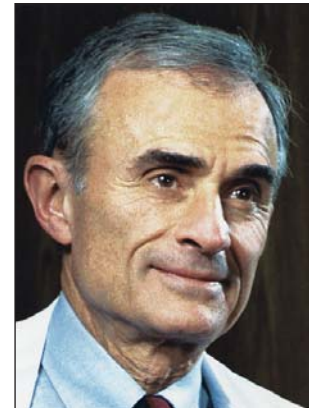
Pablo R. Ros, M.D., M.P.H., said a shortage is inevitable as the number of exams per year—estimated to be 500 million by 2010—continues to increase. The complexity of exams also is increasing, he said, with CT, MR



Jonathan W. Berlin, M.D., M.B.A.
Evanston Northwestern Healthcare



Pablo R. Ros, M.D., M.P.H.
Harvard Medical School



David C. Levin, M.D.
Thomas Jefferson University

imaging, positron emission tomography (PET) and CT replacing plain films. Dr. Ros is a professor of radiology at Harvard Medical School, executive vice-chair and associate radiologist-in-chief at Brigham and Women’s Hospital and

Practices that formerly had no difficulties in recruiting may find that they need to utilize new marketing techniques to attract high-quality candidates.

Jonathan W. Berlin, M.D., M.B.A.

radiology division chief at the Dana Farber Cancer Institute. He taught “Motivation and Compensation in Radiology” at the seminar.

The inevitable—and not altogether undesirable—result of the shortage is that radiology practices are being forced to better manage their finances and recruiting strategies, said Jonathan W. Berlin, M.D., M.B.A., a radiologist at Evanston Northwestern Healthcare and associate professor of radiology at Northwestern University’s Feinberg School of Medicine.

“Practices that formerly had no difficulties in recruiting may find that they need to utilize new marketing techniques to attract high-quality candi-

dates,” said Dr. Berlin, who taught “Negotiation Strategies: How to Be a Better Negotiator.”

The Merritt Hawkins report showed organizations are enticing candidates by combining salaries with bonuses, income guarantees and other incentives. The average salary offered to recruited radiologists was \$351,000, representing a 1 percent decrease from the year before, but a 12 percent increase since 2002.

Salary and Benefits Not the Only Incentives

An appealing salary and benefit package is obviously important, said Dr. Levin, but he added that employers can sweeten the deal in other ways as well. Of utmost importance, he said, is managing the office workload with such tactics as employing radiologist assistants and having a reliable picture archiving and communication system (PACS).

“A good PACS allows a practice to move images around,” said Dr. Levin. “If you have a radiologist at a remote site where the workload isn’t so high,

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and you have a good PACS, that person can call up and read images that were done somewhere else and make the whole practice more efficient.”

Using nighthawk services can also have the net effect of attracting new candidates, he said. “If a practice can provide the radiologist with nights free—or at least nights free to some extent—with nighthawk coverage, that can help,” he said.

Dr. Ros said that to recruit quality candidates, institutions such as his must guarantee not only salary raises but also bonuses for a number of years, in addition to an attractive recruitment bonus and special tools such as low-interest mortgages. In other cases, he said, departments will also include college tuition remission and child and elderly care funds.

“Radiology recruitment is tough,” said Dr. Ros. “Even academic departments are routinely using headhunting firms, something unheard of a few years ago.”

While it might seem obvious, Dr. Berlin said employers also shouldn’t forget to capitalize on their specific unique attributes, such as a desirable geographic location, top notch equipment and lifestyle factors.

One RSNA member, who recently searched nationwide for a new position, said the findings in the Merritt Hawkins report were more consistent with her experience in rural areas, which likely attracted fewer candidates than large cities. A practice in a relatively small Midwestern town offered a salary well above the average cited by Merritt Hawkins as well as a guarantee of becoming a partner in 6 months, she said, whereas organizations in large cities offered far less generous packages.

According to Merritt Hawkins, internal medicine was the most frequent physician search, followed by family practice. After radiology, rounding out the top 15 searches were orthopedic surgery, cardiology, general surgery, hospitalist, OB/GYN, gastroenterology, emergency medicine, urology, anesthesiology, psychiatry, neurology and otolaryngology.

An incentive package of salary plus bonus was offered in 53 percent of all searches, with an income guarantee offered in 32 percent.

Shortage Causes, Implications Vary

The strong demand for radiologists and other specialists can have a variety of causes, including a fixed-supply of U.S.-trained physicians, changing practice styles, population aging and technological innovation, the firm reported. With these factors at work, the firm projected, the physician shortage will last at least another decade.

Addressing the shortage in the long term, said Dr. Berlin, means finding ways to increase the number of new practitioners being trained. In the meanwhile, said Dr. Levin, radiologists must be proactive about protecting their reputation.

“If radiologists can’t handle the workload, it gives the whole field a black eye,” he said. “People will say, ‘Radiologists don’t schedule patients quickly enough.’ Ideally we would have enough radiologists to handle the workload efficiently and quickly, so when a patient or a referring physician

calls up to schedule a case, we say ‘Yes, we can see your patient tomorrow.’ The patient comes in, gets the study done and a report gets issued promptly.”

The shortage also has implications for radiologists retaining control over the procedures they’re most qualified to do, Dr. Levin said.

“It’s not a good situation for organized radiology to have this kind of a shortage, because some radiologists who are overburdened might say to themselves, ‘Well, I can’t handle the workload, so I’ll give away some of this work to the vascular surgeons, or the cardiologists or the urologists or the OB/GYNs,’” he said. “That’s one way we can lose our turf battles.” □

Top 15 Physician Searches by Medical Specialty

	2005-06	2004-05	2003-04
Internal Medicine	274	188	124
Family Practice	257	166	165
Radiology	237	218	202
Orthopedic Surgery	207	210	210
Cardiology	174	231	181
General Surgery	165	116	112
Hospitalist	112	62	82
OB/GYN	111	83	103
Gastroenterology	105	94	105
Emergency Medicine	91	47	42
Urology	75	59	94
Anesthesiology	70	64	98
Psychiatry	69	80	54
Neurology	69	56	60
Otolaryngology	57	54	52

Income Offered to Radiologists

	LOW	AVERAGE	HIGH
2005-06	\$240,000	\$351,000	\$500,000
2004-05	\$250,000	\$355,000	\$500,000
2003-04	\$240,000	\$336,000	\$450,000

Source: Merritt, Hawkins & Associates® 2006 Review of Physician Recruitment Incentives

RADIATION SAFETY

Answer

[Question on page 1.]

A The effective dose is about 2 mSv per exam, with a corresponding cancer induction risk of 0.02% (BEIR-VII). Detecting this as an increase over “natural” cancer risk would require cohorts of tens of millions of women.

Q&A courtesy of AAPM.

RSNA 2006 Meeting Preview

Radiology's Progressive Side on Display at RSNA 2006

The latest developments in fusion, perfusion/diffusion, multi-planar and dual energy imaging techniques are among the scientific topics to be presented at RSNA 2006, representing the very latest in cutting-edge research from investigators worldwide.

"The scientific program will be spectacular this year due to the high quality of submitted abstracts and the continued development and evolution of our specialty," said Gerald D. Dodd III, M.D., chair of the RSNA Scientific Program Committee and professor and chair of the Department of Radiology at the University of Texas Health Science Center at San Antonio.

Attendees can also look forward to learning about the latest multislice CT and the explosion of cardiac CT, as well as the development of new applications for computer-aided diagnosis (CAD) and the great potential of new molecular imaging techniques. The ever-expanding roles of interventional radiology and radiation oncology are also on the agenda, Dr. Dodd said.

"My hat is off to the many researchers for submitting their great work to RSNA, and to the Scientific Program Committee for crafting a terrific program," he said.

Members of the RSNA Scientific Program Committee and its 17 subcommittees reviewed more than 6,000 abstracts submitted for scientific paper or scientific poster presentation. Over the summer, committee members accepted for presentation 1,633 papers and 638 posters. Separate committees accepted 1,425 abstracts for education exhibits.



2006 RSNA SCIENTIFIC PROGRAM COMMITTEE

(front row, from left) John R. Mayo, M.D., Maryellen L. Giger, Ph.D., Stuart E. Mirvis, M.D., Gerald D. Dodd III, M.D., Donald P. Frush, M.D., Chul S. Ha., M.D., Umar Mahmood, M.D., Ph.D., Marcia C. Javitt, M.D. (back row, from left): David S. Mendelson, M.D., Andrew D.A. Maidment, Ph.D., David A. Rubin, M.D., Mitchell E. Tublin, M.D., Robert M. Quencer, M.D., Erik K. Paulson, M.D., Howard P. Forman, M.D., Paul R. Julsrud, M.D. (not pictured) Valerie P. Jackson, M.D., Matthew A. Mauro, M.D., Jack A. Ziffer, M.D., Ph.D.

Molecular Imaging

Molecular imaging makes its debut as a subspecialty area at RSNA 2006. Interesting topics for the inaugural outing are optical imaging, cell tracking, especially using MR imaging, and the development of new targeted imaging agents, said Subcommittee Chair Umar Mahmood, M.D., Ph.D.

Also noteworthy, said Dr. Mahmood, is the use of molecular imaging to assess drug dosing and efficacy and optimizing iron oxide contrast in images to make nanoparticles—used extensively for molecular targeting—appear bright, rather than dark as they do in more traditional methods of detection.

Breast Imaging

Major trends in breast imaging evident in the scientific presentations include digital mammography, tomosynthesis and breast MR, including MR spec-



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92nd Scientific Assembly and
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November 26–December 1, 2006
McCormick Place, Chicago

troscopy, said Subcommittee Chair Valerie P. Jackson, M.D.

Other interesting topics include the cost-effectiveness of digital versus film mammography for screening and the use of bilateral MR imaging for the presurgical evaluation of patients with known breast cancer, she said.

Cardiac Imaging

The cardiac imaging subspecialty continues to see a resurgence of interest, said

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Subcommittee Chair Paul R. Julsrud, M.D., with new developments such as non-cardiac findings in cardiac CT, multislice CT for congenital heart disease, and MR angiography in left atrial/pulmonary venous ablation.

The quantity and variety of cardiac imaging abstracts—in such areas as using CT for cardiac evaluation and reporting extra-cardiac findings detected during cardiac imaging—are proof that cardiac imaging is being recognized as an increasingly important area of radiology, said Dr. Julsrud.

Chest Radiology

The latest findings in lung cancer screening and the impact of spiral CT on patient care are among the highlights this year in chest radiology, said John R. Mayo, M.D., subcommittee chair. Other interesting topics include the impact of CT angiography on the workup for pul-

Scientific presentations in the newest subspecialty area at RSNA 2006, molecular imaging, include optimizing iron oxide contrast in images to make nanoparticles appear bright, rather than dark as they do in more traditional methods of detection.

monary embolism, and outcome measures response to chronic obstructive pulmonary disease (COPD).

Emergency Radiology

Noteworthy topics such as disaster planning in the emergency department, increased utilization of CT in the trauma setting and the increased use of multiplanar reconstructions in the evaluation of the chest and abdomen are among the research to be presented this year in the

emergency radiology sections, said Stuart E. Mirvis, M.D., subcommittee chair.

Gastrointestinal Radiology

The more than 900 abstracts submitted in this area are evidence that gastrointestinal radiology is generating a lot of research activity, said Subcommittee Chair Erik K. Paulson, M.D.

He noted a continued proliferation of submissions dealing with CT and MR colongraphy, MR perfusion and diffusion imaging of the abdomen and pelvis, as well as the increasing emergence of dual energy CT applications.

Genitourinary Radiology

Studies that link molecular imaging to morphology are a particularly interesting trend in genitourinary radiology, said Subcommittee Chair Marcia C. Javitt, M.D. Other trends, she said, include the early use of diffusion-weighted imaging for tissue characterization and the ever-increasing use of minimally invasive therapies.

Other interesting topics, said Dr. Javitt, include stem cell treatment of urinary stress incontinence and a limited prostate “lumpectomy” to treat prostate cancer while preserving sexual function and minimizing treatment cost.

Health Services Policy & Research

A great deal of research in the area of health services policy focuses on the cost effectiveness of cardiac and vascular imaging technologies, according to Howard P. Forman, M.D., subcommittee chair.

An increased interest in teleradiology to expand health services is also evident, he said, along with a focus on the effects



At the June meeting of the Scientific Program Committee in Chicago, Committee Chair Gerald D. Dodd III, M.D. (left), listens to representatives of the subspecialty subcommittees discuss the abstracts they reviewed. Board Liaison for Science Gary J. Becker, M.D., and Board Liaison-designate for Science Sarah S. Donaldson, M.D., also heard the reports and offered feedback on what should be presented at RSNA 2006.

It's going to be a great meeting. There are many interesting studies.

John R. Mayo, M.D.

of self-referral on outpatient imaging utilization, particularly apt in light of recent reductions in Medicare reimbursement rates for these procedures.

Musculoskeletal Radiology

Faster acquisition of MR images of the knee and the use of MR imaging to study the loss of body fat from different anatomical areas through diet and exercise are among the newer developments in the area of musculoskeletal radiology, said Subcommittee Chair David A. Rubin, M.D.

Other research, Dr. Rubin said, looks at such questions as how MRI machines could be configured to allow imaging of the spine with patients sitting instead of lying on their backs.

Neuroradiology/Head & Neck

Science in neuroradiology and head and neck radiology emphasizes functional MR imaging (fMRI) and also reflects an increased interest in acute stroke workup using CT scanning, and MR evaluation of carotid atherosclerotic plaques, according to Subcommittee Chair Robert M. Quencer, M.D.

Other hot topic areas, said Dr. Quencer, include fMRI studies focusing on the effects of violent video games and chronic cocaine use on the brain.

Nuclear Medicine

New developments in diagnosis and therapy involving radionuclides and radiopharmaceuticals will be presented.



Maryellen L. Giger, Ph.D. (*right center*), chair of the Physics and Basic Science Subcommittee, discusses trends in that area during the June meeting of the Scientific Program Committee. Also pictured (*from left*) are Paul R. Julsrud, M.D., Umar Mahmood, M.D., Andrew D.A. Maidment, Ph.D., and Marcia C. Javitt, M.D., who gave updates on cardiac radiology, molecular imaging and genitourinary radiology, respectively.

Pediatric Radiology

Themes this year in pediatric radiology include radiation dose assessment and control, applications of 64-slice CT, cardiac CT and fMRI, said Donald P. Frush, M.D., subcommittee chair.

Other topics, he said, include new imaging technology for investigating child abuse, such as the unique information that whole-body MR imaging can provide with respect to soft tissue injury.

Physics and Basic Science

In the area of physics and basic science, areas of growth are CT hardware, reconstruction algorithms and dosimetry, including advances in breast tomosynthesis and breast CT, said Subcommittee Chair Maryellen L. Giger, Ph.D.

Also, research in computer-aided diagnosis continues to advance, with applications moving beyond breast and lung nodules to include abdominal, liver, central

In the physics and basic science subspecialty, computer-aided diagnosis applications are moving beyond breast and lung nodules to include abdominal, liver, central nervous system, carotid and pulmonary embolism imaging.

nervous system, and carotid and pulmonary embolism imaging, Dr. Giger said.

Radiation Oncology & Radiobiology

Subcommittee Chair Chul S. Ha, M.D., said he is particularly excited about the increasing number of abstracts submitted involving image-guided radiation therapy. Allowing real-time tracking of a tumor during treatment, image-guided

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therapy can minimize radiation damage to adjacent normal structures.

This type of innovation, said Dr. Ha, requires very close collaboration among radiation oncologists, diagnostic radiologists and medical physicists. "RSNA is a very good forum for this kind of collaboration and research," he said.

Radiology Informatics

Interesting developments in radiology informatics include new lexicons, said Subcommittee Chair David S. Mendelson M.D. The study of workflow—both within radiology and as the specialty fits into to the health system as a whole—is also a noteworthy trend, he said.

The RSNA annual meeting is a very good forum for collaboration.

Chul S. Ha, M.D.

Ultrasound

Gene transfer work, genitourinary contrast agents and cutting-edge developments in melanoma imaging are part of the science to be presented in ultrasound, said Mitchell E. Tublin, M.D., subcommittee chair.

Also among the topics is real-time CT/US fusion imaging for guiding percutaneous ablations of small malignancies of the liver, kidneys and adrenals.

Vascular & Interventional Radiology

Scientific developments in vascular and interventional radiology focus on improving image quality with faster and more detailed CT and MR angiography, said

Brochures Make Subspecialty Content Easy to Find

Available at RSNA 2006 and online at rsna2006.rsna.org are brochures that organize components of the annual meeting by subject and correspond to radiologic subspecialties. Brochures are available in:

- Breast/Mammography
- Cardiac Radiology
- Chest Radiology
- Computed Tomography
- Education/Research Statistics
- Emergency Radiology
- Gastrointestinal Radiology
- Genitourinary Radiology/Obstetric and Gynecologic Radiology
- Neuroradiology/Head and Neck Radiology
- Health Policy/Management/Quality Assurance and Quality Improvement/Professionalism
- Informatics
- Nuclear Medicine/Molecular Imaging
- Musculoskeletal Radiology
- Magnetic Resonance Imaging
- Radiation Oncology/Oncologic Imaging
- Pediatric Radiology
- Physics and Basic Science
- Ultrasound
- Vascular and/or Interventional Radiology



Subcommittee Chair Matthew A. Mauro, M.D. Significant trends include the increasing replacement of conventional angiography by CT and MR angiography for diagnosis of arterial and venous disease and the rapid pace of advancements in interventional oncology.

Specific abstracts for the presentations of the science described here are available in the online *RSNA Meeting Program* at rsna2006.rsna.org.

Continuing Medical Education Credit at RSNA 2005

102,329

total CME credits

11,463

individuals received CME credit

9

average number of CME credits per person

61

most number of CME credits per person

New at RSNA 2006

RSNA Services

RSNA Services consolidates many of the amenities previously located throughout McCormick Place. Located on Level 3 of the Lakeside Center, RSNA Services offers assistance and information for membership, journals, education products and services, job postings and the R&E Foundation.

Registration

Register onsite, if necessary. Registration rates are \$100 more onsite. The registration desk is also a distribution point for the *RSNA Meeting Program* and official meeting bag, available to holders of blue, red or green badge ticket stubs.

Membership

Explore the benefits of RSNA membership and apply for or renew membership.

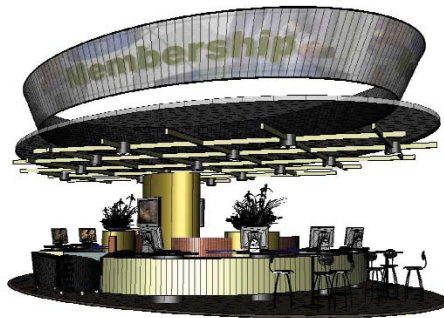
Career Connection

See demonstrations and receive one-on-one assistance in using RSNA's online job center, Career Connection (RSNA.org/career). Career Connection allows individuals to search for available positions and submit résumés, while practices can post job opportunities and search for potential candidates.

Education Store

Purchase refresher courses on CD-ROM, syllabi, *RSNA Meeting Programs* and *RadioGraphics* special issues in the Education Store. Additional copies of the 2006 *RSNA Meeting Program* are also available to RSNA members for \$10 each and to others for \$45 each. Store person-

MEMBERSHIP



nel will be available to answer questions about all of RSNA's education products and services.

RadiologyInfo™, RSNA.org, American Board of Radiology

Learn the features of the RSNA Web site and discover the information available on *RadiologyInfo.org*, the patient information Web site sponsored by RSNA and the American College of Radiology (ACR) and learn about the online offerings of the RSNA Education Center, including what RSNA is doing to help members meet maintenance of certification (MOC) requirements.

Also in this area, talk to representatives from the American Board of Radiology about the MOC program and pick up an enrollment form.

RSNA Services

Lakeside Center Ballroom—Level 3

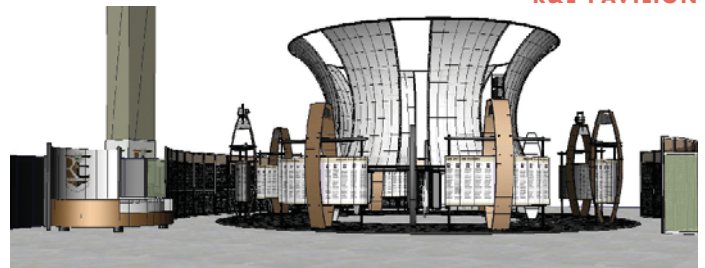
Hours of Operation

Saturday	12:00 p.m. – 6:00 p.m.
Sunday	7:00 a.m. – 6:00 p.m.
Mon. – Thurs.	7:30 a.m. – 6:00 p.m.
Friday	7:30 a.m. – 1:00 p.m.

EDUCATION STORE



R&E PAVILION



Radiology and RadioGraphics

Take a guided tour of *Radiology* and *RadioGraphics* online, including journal subscription activation and quick and easy literature searches.

Satellite Location

RSNA membership, journals, education and Career Connection services also will be available in RSNA booth 1100 in Hall A of the South Building. Hours for the satellite location are the same as those for the technical exhibits.

RSNA Research & Education Foundation Pavilion

Learn about the activities of the RSNA Research & Education Foundation and the RSNA Department of Research at the Foundation's pavilion near RSNA Services. A lounge is available for RSNA Research & Education Foundation donors of \$50 or more and donations will be accepted onsite.

Continued on next page

Lakeside Learning Center

This year RSNA is pleased to introduce the Lakeside Learning Center (formerly referred to as Hall D) where education exhibits, scientific posters and informatics (formerly known as *infoRAD*®) demonstrations are clustered according to subspecialty as “spokes” in two giant wheels.

A map of the Lakeside Learning Center, showing the various subspecialty areas, will be included in the *RSNA Meeting Guide*.

On the perimeter of the Lakeside Learning Center will be the new Molecular Imaging Zone, special informatics demonstrations and hands-on workshops offered by vendors of computer-based products. For more information about informatics demonstrations and hands-on workshops, see page 28.

Education Exhibits

This year, 1,428 education exhibits cover 17 subspecialties. Education exhibits allow attendees to review the diagnosis

of a specific condition using either a single-modality or multimodality approach, identify the state-of-the-art imaging and methods of treatment of various pathologic conditions and assess new research on applications of various imaging and therapeutic modalities.

Backboard-panel, poster-style exhibits make up the subspecialty spokes in the Lakeside Learning Center. Electronic education exhibits can be viewed on computers at the outer end of

each subspecialty spoke, in lounge areas known as communities. Communities also allow for group viewing of scientific posters and/or electronic education exhibits, except during the lunch period.

Scientific Posters

This year's 638 posters allow attendees to evaluate the most current research, identify current and future scientific and

Lakeside Learning Center

Hours of operation

Sunday	8:00 a.m. – 6:00 p.m.
Mon. – Thurs.	7:00 a.m. – 10:00 p.m.
Friday	7:00 a.m. – 12:45 p.m.

technologic developments, modify academic and clinical practices and identify and practice research methods.

All scientific posters are presented electronically and can also be viewed on computers in the communities.

Molecular Imaging Zone

All molecular imaging exhibits and posters are grouped together in an area of the Lakeside Learning Center called the Molecular Imaging Zone. Attendees will also find exhibits from federal agencies on their molecular imaging programs, as well as information about funded centers of excellence in molecular imaging located nationwide. Molecular imaging societies, including SNM and Society for Molecular Imaging, will also be on hand.

Though not located in the Molecular Imaging Zone, technical exhibitors with molecular imaging products will feature

the Molecular Imaging Zone logo at their booths in the North and South buildings.

CME Credit

AMA PRA Category 1 Credit™ and Category A CE credit for technologists are available for many activities in the Lakeside Learning Center. On Sunday from 12:30 p.m. to 1:30 p.m. and Monday through Thursday from 12:15 to 1:15 p.m., education exhibit and scientific poster authors are scheduled to be available for discussion or to give presentations. Following the discussion or presentation, any attendee desiring credit must deposit an attendance voucher with the author.

Cases of the Day

AMA PRA Category 1 Credit is also available for correctly diagnosing any of the Case of the Day exhibits located in the Lakeside Learning Center. Each day, Sunday through Thursday, 14 new cases are featured. Attendees can submit a diagnosis electronically in the Internet or WiFi zones at McCormick Place. Each correct diagnosis earns 0.5 AMA PRA Category 1 Credit. Revealed cases remain on display for continued self-study.

Late Night Shuttle Bus

For those who wish to study education exhibits and scientific posters in the evening, shuttle bus service between hotels in the RSNA hotel block and the Lakeside Center shuttle gates is scheduled Monday through Thursday from 7:00 p.m. until 10:00 p.m.. Limited food service is also available from area vending machines during the evening, Monday through Thursday.



Richard L. Baron, M.D.
Chair, RSNA Education Exhibits Committee



Molecular Imaging Zone

Series Courses

New for RSNA 2006, series courses combine state-of-the-art lectures on clinical care and basic science with scientific paper sessions on emerging therapies and technologies. Series courses will be offered in emergency radiology, interventional oncology and pediatric radiology.

The courses also were designed with a “take home” strategy, meaning attendees can expect to receive information they can apply immediately in their practices. In addition, by having refresher course instructors available to comment when new science is presented, these courses provide the opportunity for dynamic discussion and healthy debate.

The series course for pediatric radiology runs Sunday through Tuesday and the interventional oncology series runs Wednesday through Friday. Attendees may register for one, two or all three days in these series. The half-day emergency radiology course requires attendance on Tuesday morning.

Series courses are indicated by two-letter acronyms in the RSNA 2006 course schedule: VE for emergency radiology, VI for interventional oncology and VP for pediatric radiology. To register, go to rsna2006.rsna.org and click on Registration, Housing & Courses.

ABR MOC Exams

For the convenience of attendees at RSNA 2006, the American Board of Radiology (ABR) is offering maintenance of certification (MOC) exams during the meeting.



Held Tuesday, November 28, from 6:15 p.m. to 10:15 p.m., exams will be available in neuroradiology, vascular/interventional radiology, pediatric radiology and radiation oncology.

Diplomates with certificates expiring in 2004, 2005, 2006, 2007 and 2008 are eligible. To register, download a form at www.theabr.org/Images/MOCEXAMReg-Form.pdf and submit it to the ABR, indicating RSNA and November 28 as the choices for location and date.

Official Meeting Bag

For the first time, RSNA is offering annual meeting professional attendees a durable official meeting bag. The bag is designed for everyday use after the meeting is over. Disposable plastic bags will also be available.

To obtain an official meeting bag and a complimentary copy of the *RSNA Meeting Program*, present a blue, red or green badge ticket stub at one of the distribution centers in the Grand Concourse



or Lakeside Center, Level 3. Those who requested the Meeting Program in advance must bring their copy to the meeting.

Available for pickup at any of the help desks in the Grand Concourse or Lakeside Center, Level 3, is a reusable badge lanyard with the RSNA and RSNA Research & Education logos.

RSNA 2006 Gold Medalists

RSNA will award three individuals its Gold Medal—RSNA's highest honor—at the 92nd Scientific Assembly and Annual Meeting. They are George R. Leopold, M.D., of La Jolla, Calif., Anne G. Osborn, M.D., of Salt Lake City and Jerry P. Petasnick, M.D., of Chicago.

George R. Leopold, M.D., is a champion of sonography whose achievements have earned him critical acclaim from his colleagues.

2006 RSNA President Robert R. Hattery, M.D., said his personal and academic association with Dr. Leopold began more than 30 years ago, when the two went head-to-head during a presentation on ultrasound versus CT of the pancreas. "I was intimidated," Dr. Hattery said. "But he was a gracious professional and became a mentor to me and many others over the years."

Recognition from peers is the highest accolade one can receive, said Dr. Leopold. "When such praise comes from the world's largest and most prestigious radiologic organization, it is especially treasured," he said.

Dr. Leopold spent two years in the U.S. Air Force upon receiving his B.S. degree from Pennsylvania State University and his M.D. degree from the University of Pittsburgh, where he also completed his radiology residency. He then took a job as assistant clinical professor at the University of California, San Diego (UCSD) under the tutelage of his mentor, Elliott Lasser, M.D. He was promoted to profes-

sor of radiology in 1976 and named Department of Radiology chair in 1985.

Some of his finest hours in the past 15 years at UCSD have been spent conducting a 26-week class for first-year radiology residents. "Each year they seem to get brighter and brighter and, as a result, I learn more and more," he said.



George R. Leopold, M.D.

Dr. Leopold has received gold medals from the American Roentgen Ray Society (ARRS), American College of Radiology (ACR) and Association of University Radiologists (AUR) and the Walter B. Cannon Medal from the Society of Gastrointestinal Radiologists (SGR). In 2003, the Los Angeles Radiological Society (LARS) named its annual Spring Diagnostic Ultrasound Conference lecture for him, in recognition of his leadership in developing the conference.

An RSNA member since 1974 and RSNA Second Vice-President from 1979 to 1981, Dr. Leopold delivered a Diamond Jubilee lecture—"Seeing with Sound"—as part of the Society's 75th anniversary celebration at RSNA 1989. He has also served in many capacities with ACR, ABR, SGR, ARRS, the American Institute of Ultrasound in Medicine and the San Diego Radiological Society.

Dr. Leopold, along with W. Michael Asher, M.D., wrote *Fundamentals of Abdominal and Pelvic Sonography*, one of the very earliest texts in the field. He has also authored and co-authored extensively and is recognized worldwide for his academic achievements.

Anne G. Osborn, M.D., is a pioneering radiologist whose accomplishments include serving as the first female president of the American Society of Neuroradiology (ASNR) and co-creating the first comprehensive point-of-care electronic imaging reference system.



Anne G. Osborn, M.D.

Dr. Hattery said Dr. Osborn is bright, well-organized and intensely focused on what she believes. "She is respected and highly motivated to serve our specialty," he said. "I always want her on my side, because she is committed."

An RSNA member since 1978, Dr. Osborn said radiologists have ridden the crest of new imaging technology, advancing patient care through improved diagnosis and innovative treatment. "After 30 years of teaching, writing and practicing clinical neuroradiology, I still feel a sense of joy and eager anticipation each and every day," she said.

Now a university distinguished professor of radiology at the University of Utah School of Medicine, where she holds the William H. and Patricia W. Child Presidential Endowed Chair in Radiology, Dr. Osborn completed her medical degree and diagnostic radiology residency at Stanford University. She began her academic neuroradiology career as a James Picker Advanced Imaging Fellow in Radiology at the University of Utah.

Dr. Osborn and two of her medical students won the Magna Cum Laude Scientific Exhibit award at RSNA 1987 for their precedent-setting computer inter-

The RSNA gold medal is presented to individuals who have rendered exemplary service to the science of radiology and who have received unanimous approval by the Board of Directors. RSNA has presented 165 gold medals since 1919.

active teaching program in neuroradiology. Hoping to introduce radiologists to computer-based education, RSNA invited Dr. Osborn and colleagues to develop a new exhibit format called “interactive computer video.” Nearly 1,000 radiologists participated in the program the following year, which marked the beginnings of *infoRAD*® (now known as informatics) as a permanent part of the annual meeting.

Known especially for developing one of the first radiology texts created specifically for personal digital assistants (PDAs), Dr. Osborn is also respected by her peers for contributions to the literature and as editor-in-chief of the *Yearbook of Diagnostic Radiology*.

Dr. Osborn was elected ASNR president in 1988, as first vice-president of RSNA in 2000 and has served as chair of the RSNA Committee on International Relations and Education. She currently sits on the RSNA Research & Education (R&E) Foundation Board of Trustees as a liaison for fund development.

Dr. Osborn has received the Marie Curie Award from the American Association for Women Radiologists, the gold medals of the Chicago Radiological Society, ASNR and the Asian Oceanian Society of

Radiology and the Bécélère medal of the International Society of Radiology.

Jerry P. Petasnick, M.D., is a former RSNA president who continues to shape the future of radiology by working with residents and helping raise research funding.



Jerry P. Petasnick, M.D.

“Dr. Petasnick is innovative, creative and a tireless worker,” said Dr. Hattery. “He is strong leader and a man who can make difficult

decisions when necessary. I admire him.”

“The Gold Medal is the most prestigious award that I have received,” said Dr. Petasnick. “My commitment to RSNA and to the training of residents and students has filled a significant portion of my professional life and has allowed me to give back to radiology those things that have influenced my career.”

Dr. Petasnick received his bachelor’s degree, as well as his master’s degree in pharmacology and medical degree, from the University of Wisconsin. After completing his residency and serving as attending physician at the University of Chicago, Dr. Petasnick began a career in 1970 at Rush-Presbyterian-St. Luke’s Medical Center that continues to this day. Serving as director of general radiology and then promoted to chair of the Department of Diagnostic Radiology in 1988, Dr. Petasnick has also contributed significantly to the body of knowledge in diagnostic radiology.

Retiring from the chair position in 2001, Dr. Petasnick immediately was appointed director of the residency program at Rush. An RSNA member since 1971 and president in 2001, Dr. Petasnick also

served on the scientific and technical exhibits committees and educational council. He was Board chairman in 1999 and chair of the R&E Foundation Board in 2004. He has also held numerous executive positions and committee appointments with the American College of Radiology, Illinois Radiological Society and Chicago Radiological Society, which presented him with its distinguished service award in 2000.

Introducing Dr. Petasnick before his presidential address at RSNA 2001, then-RSNA First Vice-President Glenn Forbes, M.D., called him “a renaissance radiologist—clinician, educator, researcher, administrator, family man, friend to many and tireless, devoted worker for organized radiology.”

In his presidential address, Dr. Petasnick emphasized the importance of generating radiology research funding and announced the founding of the RSNA President’s Circle—an R&E giving program recognizing gifts of \$1,500 or more per year.

“Radiology reinvents itself every five to 10 years, said Dr. Petasnick. “I saw the introduction of modalities like ultrasound, CT and MR. There is always something new to do. Our specialty is continuously changing.”

For expanded versions of the biographies of Drs. Leopold, Osborn and Petasnick, see the *RSNA Meeting Program* or go online to rsna2006.rsna.org and click on Meeting Program in the left-hand column.

RSNA 2006 Honorary Members

Honorary Membership in RSNA is presented for significant achievements in the field of radiology. At RSNA 2006, Honorary Membership will be given to Andy Adam, M.B.B.S., of London, Hitoshi Katayama, M.D., of Tokyo and Kofoworola Oluwatoyin Soyebi, M.B.Ch.B., of Lagos, Nigeria.

Andy Adam, M.B.B.S., is a distinguished interventional radiologist known for his work in promoting the subspecialty worldwide.

“Those of you who know Dr. Adam, know you cannot escape his charm, enthusiasm, depth of knowledge and character,” said 2006 RSNA President Robert R. Hattery, M.D. “You will also marvel at his vision of the future.”

Dr. Adam said receiving RSNA Honorary Membership is a huge honor and tremendous pleasure. “It really means more to me than words can express,” he said.

Upon completing training at the University of London’s Middlesex Hospital Medical School, Dr. Adam spent four years in internal medicine, cardiology and oncology. He then trained in radiology at the Royal Postgraduate Medical School, obtaining the Fellowship of the Royal College of Radiologists. Dr. Adam is also a fellow of the Royal College of Physicians and was awarded Fellowship of the Royal College of Surgeons for clinical and academic distinction, making him one of just a few physicians to hold the fellowship of three English Royal Colleges.

In 1992, he was appointed to the first

professorial chair of interventional radiology in Europe, at Guy’s and St. Thomas’ Medical School at the University of London. He remains in that position today.

An RSNA member since 1993, Dr. Adam has been president of the Cardiovascular and Interventional Radiological Society of Europe, International Society for Minimally Invasive Therapy, the British Society of Interventional Radiology, International Society of Hepatobiliary and Pancreatic Radiology and British Institute of Radiology. He has been awarded the gold medal of the British Society of Interventional Radiology and the medal of the Russian Academy of Medical Sciences.

Currently board chair of the European Congress of Radiology (ECR), as 2006 president he helped merge ECR with the European Association of Radiology to create the European Society of Radiology (ESR).

Hitoshi Katayama, M.D., is an internationally recognized authority on the safe and appropriate use of high osmolar contrast media.

Dr. Hattery said Dr. Katayama’s research had a significant impact on his professional life. “Dr. Katayama has my personal congratulations and thanks from many patients who have benefited from his work,” he said.

Receiving the RSNA honorary membership is a joyous event, said Dr. Katayama, adding, “I promise you I will



Andy Adam, M.B.B.S.



Hitoshi Katayama, M.D.

RSNA honorary membership recognizes outstanding contributors to medicine and its allied sciences. Nominated by the RSNA president, candidates are then elected by the Board of Directors. RSNA has awarded 91 honorary memberships since 1970.

devote my remaining energy to present and future radiology.”

Now the director of the Daito College of Medical Technology in Tokyo, Dr. Katayama is perhaps best known to some as an author of what has come to be called the “Katayama Report.” This pivotal large-scale study, published in *Radiology* in 1990, concluded that non-ionic contrast media significantly reduced the frequency of severe and potentially life-threatening adverse drug reactions.

A graduate of the Kyushu University School of Medicine in Fukuoka, Japan, Dr. Katayama helped his family work in rice paddy fields during high school. “I believe this was a very good experience for me, to become a hard working fellow,” he said.

After working as a research associate in the Department of Radiology at the Atomic Bomb Casualty Commission in Hiroshima, Japan, Dr. Katayama spent several years as a professor and lecturer at his alma mater. He eventually served as a professor, chair of the Department of Radiology and presi-

dent of Juntendo University for more than 25 years.

An RSNA member since 1984, Dr. Katayama has served as president of the Japanese Radiological Society and 8th Asian Oceanian Congress of Radiology and currently serves on the board of directors of the Japan-North America Medical Exchange Foundation. He has received gold medals from the Asian Oceanian Society of Radiology and honorary membership from ECR.

Kofoworola Oluwatoyin Soyebi, M.B.Ch.B., has used her personal passion for learning to make a public impact on the field of radiology in her native Nigeria.

“Those who know and have worked with Dr. Soyebi quickly recognize her energy, articulate expression of ideas, can-do attitude, and commitment to our specialty and her patients,” said Dr. Hattery.



Kofoworola Oluwatoyin Soyebi, M.B.Ch.B.

Dr. Soyebi said RSNA has fanned the smoldering embers of her professional life into exciting flames. “With this honorary membership, all I can say is that God will enable me to do this great Society proud,” she said.

Upon Dr. Soyebi’s graduation from the Mayflower Secondary School in Ikenne, Nigeria, the school founder and principal—well-known Nigerian social critic and educator Tai Solarin—wrote in a letter of reference about her independence and dedication: “She was too preoccupied with her academic realm to find time to gossip and chirp with the other girls. She packed her hours with work, be the work academic or physical.”

Obtaining her medical training at Obafemi Awolowo University in Ile-Ife, Nigeria, Dr. Soyebi began her radiology career as a registrar in the Department of Radiodiagnosis at the Lagos University Teaching

Hospital. Now a consultant radiologist at the hospital, she is involved in all radiographic investigations, co-directs the ultrasound unit and trains residents.

An RSNA member since 2004, she is also a member of the Nigerian Medical Association and Medical Women’s Association of Nigeria, as well as other national and international societies.

Dr. Soyebi was one of the first six Africans to benefit from the RSNA Teach the Teachers Ultrasound Initiative in Africa, which resulted in an ultrasound research and education center at the medical college. Dr. Soyebi is a program coordinator at the center, which has trained more than 100 doctors in various aspects of ultrasonography since 2003.

For expanded versions of the biographies of Drs. Adam, Katayama and Soyebi, see the *RSNA Meeting Program* or go online to rsna2006.rsna.org and click on Meeting Program in the left-hand column.



Plenary Sessions

Considered the highlights of the RSNA annual meeting, plenary sessions are open to all registrants. Some of these sessions require separate registration (+) and/or an additional fee (*).

SATURDAY

10:00 a.m. – 12:00 p.m.

RSNA Personal Financial Seminar +*

- *Protecting Assets Against Creditor Claims, Including Malpractice Claims*

Presenter: Barry Rubenstein, B.S., J.D., L.L.M.

12:00 – 2:00 p.m.

AAPM/RSNA Physics Tutorial for Residents

- *Physics of Dual-Modality Imaging*

Moderator: Mahadevappa Mahesh, Ph.D.

1:30 – 5:00 p.m.

RSNA Personal Financial Seminar +*

- *Effective Investment Strategies*

Presenter: J. Michael Moody, M.B.A.

1:00 – 5:00 p.m.

NIH Grantsmanship Workshop +*

Facilitator: Lee Rosen, Ph.D.

2:15 – 4:15 p.m.

AAPM/RSNA Tutorial on Equipment Selection

- *Digital Mammography*

Moderators: Kalpana M. Kanal, Ph.D., and Randell L. Kruger, Ph.D.

SUNDAY

8:30 – 10:15 a.m.

President's Address

- *Strengthening Professionalism*

Robert R. Hattery, M.D., RSNA President

- Dedication of *RSNA Meeting Program* to Milton Elkin, M.D.

- Presentation of Special Presidential Award to Josef A. Lissner, M.D.

- Announcement of Outstanding Research and Outstanding Educator Awards

Opening Session

- *What Sets Us Apart? Quality as a Differentiator*

Moderator: Gerald D. Dodd III, M.D.

- *The Business Case for Quality*

Lecturer: Stephen J. Swensen, M.D.

- *Doing Well by Doing Good: Clinical Quality in the New Medical Profession*

Lecturer: Brent C. James, M.D.

4:00 – 4:10 p.m.

Report of the RSNA Research & Education Foundation

Peggy J. Fritzsche, M.D., Chair, R&E Foundation Board of Trustees

4:10 – 5:45 p.m.

Image Interpretation Session

Moderator: Anne C. Roberts, M.D.

Panelists: Andy Adam, M.B.B.S., Christine B. Chung, M.D., Robert H. Cleveland, M.D., Ella A. Kazerooni, M.D., Robert D. Zimmerman, M.D.

Webcast Available! (Information will be included in the November issue of *RSNA News*.)

MONDAY

8:30 – 11:30 a.m.

Associated Sciences Symposium

- *The Art and Science of Radiology Planning and Design*

Moderator: Morris A. Stein

1:30 – 2:45 p.m.

Eugene P. Pendergrass New Horizons Lecture

- *Image-Guided Cancer Treatment: The Science and Vision of an Emerging Field*

J. William Charboneau, M.D.

(A lecture preview will be included in the November issue of *RSNA News*.)

Presentation of Honorary Memberships

- Andy Adam, M.B.B.S., London
- Hitoshi Katayama, M.D., Tokyo
- Kofoworola Oluwatoyin Soyebi, M.B.Ch.B., Lagos, Nigeria

(See pages 22–23 for honoree biographies)

1:30 – 2:45 p.m.

RSNA/AAPM Basic Physics Lecture for the Radiologic Technologist

- *Picture Archiving and Communication Systems—Questions and Answers*

Speakers: Beth A. Schueler, Ph.D., Steve G. Langer, Ph.D., Kenneth A. Fetterly, Ph.D.

1:30 – 5:45 p.m.

Physics Symposium

- *Brachytherapy Refresher*

Course Director: Bruce R. Thomadsen, Ph.D.

4:30 – 6:00 p.m.

Special Focus Sessions

- *CT Screening for Lung Cancer: Is it Worth It?*
- *Hepatic Tumor Therapy: What Treatment Is Appropriate—Ablation, Intraarterial Therapy, or Surgery?*
- *Cardiac CT: The Essential Diagnosis*
- *Pediatric Diagnosis: Battle of the Stars*
- *Self-Referral, Global Outsourcing, and the Demise of Academic Radiology: Is it the Beginning of the End?*
- *New Directions in Breast Imaging: Where Are We Headed?*
- *High-Field-Strength (1.5- and 3-T) MR Imaging of Cartilage*
- *Uterine Leiomyomas: Embolization vs. Focused Ultrasound Surgery*
- *Noninvasive Spinal Angiography: MR Angiography vs. CT Angiography*
- *Computer-aided Detection: Friend or Foe?*

TUESDAY

10:10 – 10:20 a.m.

RSNA Business Session

1:30 – 2:45 p.m.

Annual Oration in Diagnostic Radiology

- *Cardiac Imaging—A Second Chance*

Kerry M. Link, M.D.

(A lecture preview will be included in the November issue of *RSNA News*.)

Presentation of Gold Medals

- George R. Leopold, M.D., San Diego
- Anne G. Osborn, M.D., Salt Lake City
- Jerry P. Petasnick, M.D., Chicago

(See pages 20–21 for honoree biographies)

WEDNESDAY

1:30 – 2:45 p.m.

Annual Oration in Radiation Oncology

- *Looking Beyond Anatomic-Based Treatment in Radiation Oncology*

Theodore S. Lawrence, M.D.

(A lecture preview will be included in the November issue of *RSNA News*.)

4:30 – 6:00 p.m.

Oncodiagnosis Panel and Special Focus Sessions

- *Oncodiagnosis Panel: Multidisciplinary Assessment and Therapy of Gynecologic Cancer*
- *Multimodality Imaging: Fused Hardware or Software Fusion?*
- *Virtual Colonoscopy: 2D, 3D, CAD or Gad—What's Best?*
- *Thyroid Sonography and Biopsy: A Procedure Run Amok?*
- *Breast Imaging: Battle of the Stars*
- *Imaging-guided Intervention: The Operating Room of the Future*
- *Topics in MR Safety*
- *Pediatric Appendicitis: Sonography or CT?*
- *Creating 3D Images: Clinicians or Technologists?*
- *Dining with Doctors: The Only Industry in Which Being Nice to Your Customer Can Land You in Jail* (In Conjunction with the National Electrical Manufacturers Association and the American College of Radiology)
- *Angiomatous Lesions: From Head to Toe* (In Conjunction with the Armed Forces Institute of Pathology)

THURSDAY

10:10 – 10:20 a.m.

RSNA Business Session

1:30 – 1:40 p.m.

Inauguration of the 2007 RSNA Board of Directors

1:40 – 1:50 p.m.

Introduction of 2007 AAPM Officers and Council Chairs

1:30 – 2:45 p.m.

RSNA/AAPM Symposium

- *High-Field-Strength MR Imaging: Beyond 3 T*

Moderator: Andrew D.A. Maidment, Ph.D.

3:00 – 4:00 p.m.

Special Focus Sessions

- *Breast MR Imaging: When Is it Appropriate?*
- *Is Multidetector CT the New Standard for Evaluation of the Postoperative Musculoskeletal System?*
- *Cancer Detection: Evaluation of Whole-Body MR Imaging vs. CT and PET/CT*
- *CT: The Physical Examination of the Emergency Department—Right or Wrong?*
- *Cancer: Early Predictors of Tumor Response*
- *Speech Recognition Dictation: Can You Make it Work for You?*
- *Wait, Wait—Don't Tell Me! Neuroradiology Edition*
- *Natural Disaster Preparedness: Lessons from Hurricane Katrina*

FRIDAY

12:45 – 3:15 p.m.

Friday Imaging Symposium

- *Imaging and Interventions in the Aging Patient*

Moderator: Harry K. Genant, M.D.

Associated Sciences Program



Jordan B. Renner, M.D.
Chair, RSNA Associated
Sciences Committee

The Associated Sciences Consortium will hold its symposium on Monday morning, with refresher courses on Monday, Tuesday and Wednesday. The consortium comprises 10 associations representing the various disciplines that function within the radiology department.

SYMPOSIUM

Monday, November 27

(8:30 – 11:30 a.m.)

The Art and Science of Radiology Planning and Design

Moderator: Morris A. Stein

The 2006 symposium will explore four overarching trends that significantly determine how imaging project design and implementation will be impacted.

A. New Technology: Trends and Science That Impact Building Planning, Design and Construction in any Radiology Setting

Morris A. Stein

B. New Places: Directions and Patterns for Imaging Outside the Traditional Imaging Department

Bill Rostenberg

C. New Work: How Changes in Practice, Expectations and Work Flow Relate to Facility Design

Steven C. Horii, M.D.

D. New Environments: The Relationship of Design to Patient Satisfaction and Staff Performance

Panel Presentation and Discussion

REFRESHER COURSES

Monday – November 27

- Fusion Imaging: Technical & Clinical Highlights

- Optimizing Image Acquisition and Display in Digital Radiography

Tuesday – November 28

- Compliance Continuum for Radiologists
- Policies and Procedures: The Key to Imaging Compliance
- Development of the Radiologist Assistant: An Education and Certification Update
- The Treasure Hunt: Keys to Unlocking Radiology Reimbursement

Wednesday – November 29

- Joint Commission on Accreditation of Healthcare Organizations National Patient Safety Goals
- Controversies in Screening: Breast, Cardiac, Chest, and Virtual Colonoscopy

Scientific Paper Sessions



Gerald D. Dodd III, M.D.
Chair, RSNA Scientific
Program Committee

RSNA 2006 will feature more than 1,600 scientific papers in 17 subspecialties:

- Breast Imaging
- Cardiac
- Chest
- Emergency Radiology
- Gastrointestinal
- Genitourinary
- Health Services, Policy, and Research
- **NEW!** Molecular Imaging
- Musculoskeletal
- Neuroradiology/Head and Neck

- Nuclear Medicine
- Pediatrics
- Physics
- Radiation Oncology and Radiobiology
- Radiology Informatics
- Ultrasound
- Vascular and Interventional

Scientific paper sessions will be held during nine designated time slots during the week. Seating is on a space-available basis. Those attending a scientific paper session will be able to evaluate the most current research, identify current and future scientific and technologic developments, modify academic and clinical

practices and identify and practice research methods.

AMA PRA Category 1 Credit™ and Category A CE credit for technologists are available.

Integrated Science and Practice

Subspecialties will also offer Integrated Science and Practice (ISP) sessions combining education and science in the same session. ISP sessions start with an invited lecturer, followed by abstract presenters. Some will conclude with a panel discussion of the subject.

Refresher Courses

RSNA 2006 offers more than 300 refresher courses on traditional and cutting-edge topics.

Refresher Courses are conducted in a multiple- or single-instructor lecture format.

Advanced registration is recommended for all refresher courses. If a particular course is full, attendees may check the availability of stand-by seating at the classroom location prior to the beginning of the course.

For more information or to register for courses, go to rsna2006.rsna.org and click on Registration, Housing & Courses.

NEW!

Radiologist Assistants Program

Four new refresher courses at RSNA 2006 are designed to meet the educational needs of the radiologist assistant as defined by the American Registry of Radiologic Technologists (ARRT®). Topics are abdominal imaging, pediatric imaging, practice standards and ethical issues, and career advancement through clinical portfolio development.

Case-based Review Courses and SAMs

Single-day, case-based review courses feature an audience-response system (ARS) to assist with self-assessment. Added to the topics this year is MR imaging, offered along with neuroradiology, pediatric radiology, interventional radiology and radiation oncology.

Self-assessment modules (SAMs) will be available for the case-based review course in radiation oncology, as well as a variety of refresher courses on topics including lung disease, sports imaging, head and neck cancer, obstetric and gynecologic ultrasound, PET-PET/CT,



Robert A. Novelline, M.D.
Chair, RSNA Refresher Course Committee

molecular imaging, pediatric spinal disorders and optimizing radiation dose in body CT. You must register in advance for case-based courses and SAMs.

You can register

online at rsna2006.rsna.org, or RSNA members can go to the refresher course ticket desk at RSNA 2006 and ask for a SAM ticket. SAMs are free for RSNA members. Non-members pay \$50 per SAM.

More detailed information about RSNA 2006 is available at rsna2006.rsna.org.

At the beginning of the case-based course, you can turn in your SAM ticket for an ARS keypad. You must enter your badge number. A hard copy of your pre-test and post-test scores, a comparison of your scores to the rest of the class, and a list of references and additional

resources will be provided at the end of the course.

Essentials of Radiology Courses

This two-day series of eight refresher courses is designed especially for general radiologists, residents and subspecialists who want to review other areas of radiology. This year's topics are body MR, chest, musculoskeletal, spine, cardiac, head and neck, brain and trauma imaging. Attendees may register for individual courses or the whole series.

2006 Categorical Course in Diagnostic Radiology

- *Genitourinary*

Director: Parvati Ramchandani, M.D.

2006 Categorical Course in Diagnostic Radiology Physics

- *From Invisible to the Visible—The Science and Practice of X-Ray Imaging and Radiation Dose Optimization*

Co-Directors: Donald P. Frush, M.D., and Walter Huda, Ph.D.

AMA PRA Category 1 Credit™ and Category A CE credit for technologists are available.

At RSNA 2006, medical informatics demonstrations will be integrated with the rest of the education exhibits and scientific posters in Lakeside Learning Center. Formerly known as infoRAD®, these demonstrations used to be housed in their own special area of Hall D.

Informatics demonstrations that apply to many subspecialties will have a “spoke” within the big wheel layout, while informatics used only in a particular subspe-

cialty will be grouped with that clinical area. In addition, special informatics presentations and classes will take place on the perimeter of the Lakeside Learning Center:

IHE®

The Integrating the Healthcare Enterprise initiative (IHE®) will demonstrate its Cross-enterprise Document Sharing for

Imaging (XDS-I) and Teaching File and Clinical Trial Export (TCE) integration profiles.

NCI caBIG Imaging Workspace

See demonstrations of projects launched in the past year by the National Cancer Institute's (NCI) Cancer Biomedical Informatics Grid (caBIG). Involving a broad spectrum of the imaging community, these projects aim to lower the barrier to participation by radiologists in clinical trials, develop controlled vocabularies and ontologies and more. Other collaborative clinical research projects will also be showcased.

Informatics, PACS Workstation and Web classrooms

Courses in the Informatics Classroom include tutorials on purchasing and integrating IHE-compatible radiology systems. MIRC courses will give an



Lakeside Learning Center

Hours of operation

Sunday	8:00 a.m. – 6:00 p.m.
Mon. – Thurs.	7:00 a.m. – 10:00 p.m.
Friday	7:00 a.m. – 12:45 p.m.

overview of RSNA's research and education resource, while separate RadLex courses for developers and radiologists will offer technical and clinical overviews of this expanding uniform terminology in radiology.

In *Practical Informatics for the Practicing Radiologist*, offered in the Informatics Classroom, RSNA teams up with the Society for Imaging Informatics in Medicine to offer sound advice for designing or redesigning filmless imaging departments.

Four basic and two advanced hands-on refresher courses will be held in the PACS Workstation classroom. In the Web classroom, eight refresher courses are scheduled, including *Getting Started with PowerPoint: Building a Basic Slide* and *Getting Images into Your PC*. Among 16 additional hands-on courses offered in the Web classroom is *The Radiologist and the Internet: Continuous Learning While You Work*.

To register for these or any other courses, go to rsna2006.rsna.org and click on Registration, Housing & Courses.



RSNA 2006 will showcase a broad spectrum of medical informatics developments in a variety of demonstrations, exhibits, courses and workshops.



David E. Avrin, M.D., Ph.D.
Chair, RSNA Radiology Informatics Committee

Technical Exhibits

Technical Exhibits at the RSNA annual meeting comprise the world's largest medical exhibition. More than 700 leading manufacturers, suppliers and developers of medical information and technology showcase an impressive array of radiology products and services.



Dennis Kay, M.D.
Chair, RSNA Technical Exhibits Committee

A comprehensive, up-to-the-minute list of the exhibitors, their products and services is available at RSNA.org/showcase.

A detailed floor plan of the exhibits area, along with exhibiting company names and contact information, will be available in the *RSNA Meeting Guide*.

Technical Exhibit Hours

Halls A & B

South and North Buildings

Sunday–Wednesday 10:00 a.m. – 5:00 p.m.

Thursday 10:00 a.m. – 2:00 p.m.



Chicago Welcomes Meeting Attendees

Through Chicago's "We're Glad You're Here" program, Mayor Richard M. Daley and the Chicago Convention and Tourism Bureau (CCTB) plan a citywide welcome for attendees and exhibitors at the RSNA 92nd Scientific Assembly and Annual Meeting. The welcome includes:

- Complimentary afternoon coffee and bottled water Monday through Wednesday in the Cyber Oases.
- Attractions in Advance calendar highlighting special events and attractions in Chicago during the meeting.

- RSNA and Chicago's "We're Glad You're Here" banners posted in about 150 locations including O'Hare International Airport and on streets including South Michigan Avenue, Fort Dearborn Drive, Martin Luther King Drive, Columbus Drive, North Water Street and Stetson Drive.



- Welcome Centers available at O'Hare and Midway Airports for information about the City and RSNA.

- Ambassador Meet and Greet program at Terminals One and Three at O'Hare Airport to direct attendees to Welcome Centers.
- Welcome signs displayed throughout O'Hare, at retail outlets, restaurants, cultural attractions and on taxicabs and shuttle buses.

For more information on CCTB and the City of Chicago, go to www.meetinchicago.com/rsna.

RSNA R&E Foundation Announces 2006 Grant Recipients

On display at the RSNA Research & Education Foundation Pavilion at RSNA 2006 will be more information, including abstracts, about the 2006 grant recipients listed below. These researchers and educators are focusing their energy and talents to move radiology and patient care into the next era.

Research Scholar Grant

Patrick J. Bolan, Ph.D.

Eastman Kodak/RSNA Research Scholar Grant
Radiology, University of Minnesota, Minneapolis

Monitoring Chemotherapy Response in Metastatic Liver Lesions with Quantitative 1H MRS

Bonnie N. Joe, M.D., Ph.D.

Berlex Laboratories/RSNA Research Scholar Grant
Radiology, University of California, San Francisco

Non-Invasive Evaluation of Fetal Lung Maturity by MR Spectroscopy: Development and Assessment of Ex Vivo and In Vivo Techniques

Michael D. Kuo, M.D.

Bracco Diagnostics, Inc./RSNA Research Scholar Grant
Radiology, University of California, San Diego

Assessing Global Gene Expression Programs of Cancer using Non-Invasive Imaging

Ashok Panigrahy, M.D.

GE Healthcare/RSNA Research Scholar Grant
Radiology, Children's Hospital Los Angeles

Quantitative Proton MR Spectroscopy of Perinatal White Matter Injury: Correlation with Neurodevelopmental Outcome, Axonal Injury and Cytokine Inflammation

Scott B. Reeder, M.D., Ph.D.

Agfa/RSNA Research Scholar Grant
Radiology, University of Wisconsin, Madison

Quantification of Hepatic Steatosis with Magnetic Resonance Imaging

Research Fellow Grant

Despina Kontos, Ph.D.

Agfa/RSNA Research Fellow Grant
Radiology, University of Pennsylvania, Philadelphia

Analysis of Parenchymal Patterns of Breast Tomosynthesis Images

Karen Gomes Ordovas, M.D.

GE Healthcare/RSNA Research Fellow Grant
Radiology, University of California, San Francisco

MRI Assessment of Right Ventricular Function After Repair of Tetralogy of Fallot

Antonio Carlos A. Westphalen, M.D.

Siemens Medical Solutions/RSNA Research Fellow Grant
Radiology, University of California, San Francisco

MR Spectroscopic Imaging after External Beam Radiation Therapy of Prostate Cancer

Research Resident Grant

Muneeb Ahmed, M.D.

Tyco Healthcare/Mallinckrodt/RSNA Research Resident Grant
Radiology, Beth Israel Deaconess Medical Center, Boston

Computer Simulation and Mathematical Modeling of Tissue Characteristics in RF Thermal Ablation with Ex Vivo Phantom and Large Animal In Vivo Correlation

John J. Battiston Jr., M.D., Ph.D.

President's Circle/RSNA Research Resident Grant
Radiology, University of Virginia, Charlottesville

Automated Detection and Classification of Ventilation Defects as Depicted by Hyperpolarized Helium-3 Magnetic Resonance Imaging of Asthmatic Lungs

K. Kenneth Chao, M.D.

Cook Incorporated/Cesare Gianturco/RSNA Research Resident Grant
Radiation Oncology, William Beaumont Hospital, Royal Oak, Mich.

Evaluation of Setup Reproducibility for Image-Guided Stereotactic Body Radiotherapy (IG-SBRT) in the Treatment of Early Stage Lung Cancer

Roberto Diaz, M.D., Ph.D.

Philips Medical Systems, Healthcare Informatics/RSNA Research Resident Grant
Radiation Oncology, Vanderbilt University Medical Center, Nashville
Pharmacodynamic Assessment of Receptor Tyrosine Kinase Inhibitors in Malignant Gliomas

Jay F. Dorsey, M.D., Ph.D., M.S.Ch.E.

Hitachi Medical Systems/RSNA Research Resident Grant
Radiation Oncology, Hospital of the University of Pennsylvania, Philadelphia

Synergistic Activity of Taxol, Radiation, and TRAIL in Therapy of Glioblastoma Multiforme with Mutant p53 Genes

Scott R. Floyd, M.D., Ph.D.

Toshiba America Medical Systems, Inc./RSNA Research Resident Grant
Radiation Oncology, Harvard Radiation Oncology Program, Boston

High Through-Put Microscopy Based RNAi screen for Modifiers of the DNA Damage Response to Ionizing Radiation

David Michael Kawanakoa Mattson Jr., M.D.

Varian Medical Systems/RSNA Research Resident Grant
Radiation Oncology, University of Iowa Hospitals and Clinics, Iowa City

The Use of 2-deoxy-D-glucose in the Treatment of Head and Neck Cancers

Christopher Douglas Willey, M.D., Ph.D.

Siemens Medical Solutions/RSNA Research Resident Grant
Radiation Oncology, Vanderbilt University Medical Center, Nashville
The Role of Membrane Derived Second Messengers and Bmx/Etk in Response to Radiation Treatment of Lung Cancer

Charles L. Perkins, Ph.D., M.D.

RSNA Research Resident Grant
Radiation Oncology, Emory University School of Medicine, Atlanta
Eukaryotic DNA Damage-Processing Pathways: Mechanisms of Response to Anticancer Therapies and Applications for Predicting Response to Therapy

Phuoc T. Tran, M.D., Ph.D.

RSNA Research Resident Grant
Radiation Oncology, Stanford University Medical Center

Investigations on the Mechanism of Myc-Dependent Inhibition of DNA Double Strand Break Repair

Research Seed Grant

Donna Blankenbaker, M.D.

Toshiba America Medical Systems, Inc./RSNA Research Seed Grant
Radiology, University of Wisconsin-Madison

The Effect of Spinal Fusion on the Water Content and Mobility of the Adjacent Intervertebral Disks ("Junctional Disks") Measured with Quantitative MR and Dynamic CT

Volunteers Needed to Evaluate Grant Applications

In a process similar to the one used by the National Institutes of Health (NIH), the RSNA R&E Foundation relies on study sections to evaluate and score grant applications. Members of the research and education study sections have expertise in diagnostic and interventional radiology, molecular imaging, radiation oncology, medical physics and radiologic education. For more information on volunteering, please contact Scott Walter, M.S., senior manager of grant administration, at 1-630-571-7816 or swalter@rsna.org.

Andrea S. Doria, M.D., M.Sc., Ph.D.

Fujifilm Medical Systems USA/RSNA Research Seed Grant Diagnostic Imaging, The Hospital for Sick Children, Toronto
Functional MR Imaging for Early Detection and Physiologic Characterization of Inflammatory Arthritis in a Rabbit Model

Daniel Kim, Ph.D.

E-Z-EM, Inc./RSNA Research Seed Grant Radiology, New York University
Comprehensive Quantification of Regional Myocardial Function Using Displacement-Encoded MRI

Soumya Mitra, Ph.D.

Berlex Laboratories/RSNA Research Seed Grant Imaging Sciences, University of Rochester
Optical Molecular Imaging of Fluorescent Proteins to Investigate Microscopic Scale Biological Processes

Kenji Suzuki, Ph.D.

Philips Medical Systems/RSNA Research Seed Grant Radiology, University of Chicago
Development and Evaluation of Computer-Aided Detection of Polyps in CT Colonography on False Negative Cases in Large Multicenter Clinical Trial

Research Medical Student Grant

Vishal K. Agarwal, B.S.

Canon USA, Inc./RSNA Research Medical Student Grant Radiology, David Geffen School of Medicine at the University of California, Los Angeles
Assessment of Surgical Hip Dislocations

Oleg Leontiev, B.S.

RSNA Research Medical Student Grant Radiology, University of California, San Diego
Imaging Cerebral Oxygen Consumption in HIV-Associated Dementia

Grant Programs Restructured, Online Submission Available

The R&E Foundation has restructured its grant programs to simplify the application process, provide greater funding opportunity for the research-oriented clinician and balance research and education initiatives. Posters (shown at right) outlining the new programs were mailed to program directors and department chairs in September.

Starting in November, applicants can build their applications online for automatic submission when grant application deadlines (January 10 for education, January 15 for research) are reached.

Details are available at the R&E Foundation Pavilion at RSNA 2006 or at RSNA.org/foundation.



Mihran Naljayan, B.S.

RSNA Research Medical Student Grant Radiology, Louisiana State University, Shreveport
Defect on Myocardial Perfusion Imaging: A Soft Tissue Artifact or a True Perfusion Defect? Practical Parameters to Improve Interpretation Accuracy

Jonathan Park, B.A.

Philips Medical Systems/RSNA Research Medical Student Grant Radiology, Northwestern University, Chicago

MRI-Guided Angioplasty of Renal Artery Stenosis

Bharat Samy, B.A.

Philips Medical Systems/RSNA Research Medical Student Grant Radiology, Massachusetts General Hospital, Harvard Medical School, Boston

Association of CT Angiographic Patterns of CAD to Traditional Risk Prediction Instruments

Kiarash Vahidi, B.S.

Fujifilm Medical Systems USA/RSNA Research Medical Student Grant Radiology, University of California, San Francisco

Non-Invasive Evaluation of Fetal Lung Maturity by MR Spectroscopy: Development and Assessment of Ex Vivo and In Vivo Techniques

Amy M. White, B.S.

Philips Medical Systems/RSNA Research Medical Student Grant Radiology, Georgetown University, Washington

Uterine Artery Embolization: The Role of Postembolization Abdominal Aortography and Associated Patient Radiation Exposure

Fellowship Training Grant

Jens Vogel-Claussen, M.D.

Philips Medical Systems/RSNA Fellowship Training Grant Radiology and Radiological Science, Johns Hopkins University, Baltimore

Cardiovascular Imaging Fellowship Program

Jacobo Kirsch, M.D.

GE Healthcare/RSNA Fellowship Training Grant Radiology, Mayo Clinic, Rochester
Cardiovascular Imaging Fellowship Program

Parham Pezeshk, M.D.

RSNA Fellowship Training Grant Radiology, Harvard Medical School – Brigham & Women's Hospital, Boston
Radiologic Informatics Fellowship Program

Education Grants

Judith K. Amorosa, M.D.

GE Healthcare/RSNA World Wide Web-Based Educational Program Grant

Radiology, University of Medicine and Dentistry of New Jersey, Robert Wood Johnson Medical School, New Brunswick

Developing a Radiology Clerkship Companion for Medical Students, Stage II

Barry B. Goldberg, M.D.

RSNA International Radiology Education Program Grant to Teach the Teachers from Emerging Nations Radiology, Thomas Jefferson University, Philadelphia

“Teaching the Teachers” Initiative for Ultrasound Training in Latin America (Caribbean, Central and South America)

Beverly P. Wood M.D., M.S.Ed., Ph.D., and Win May M.D., Med.Sc., Ph.D.

RSNA/AUR/APDR/SCARD Radiology Educational Research Development Grant

Radiology & Pediatrics, University of California, Keck School of Medicine, Los Angeles

Teaching and Assessing Interpersonal Communication Skills for Radiology Residents

Sponsored by the Radiological Society of North America

RSNA will present two informative and comprehensive financial seminars prior to RSNA 2006

**McCormick
Place,
Chicago
11/25/2006**

10:00 a.m. – 12:00 p.m.

Protecting Assets from Creditor Claims, Including Malpractice Claims

Includes textbook written specifically for the course!

**Presented by
Barry Rubenstein,
BS, JD, LL.M**

In today's tort claim environment, a practitioner's exposure to potential malpractice and creditor claims in excess of insurance coverage has dramatically increased. This vital course addresses in essential detail how to minimize, even avoid, that exposure and protect hard-earned assets from creditor attack. Included in this seminar are comprehensive illustrations to help physicians decide when and how to use asset protection techniques, as well as distinguish the advantages, disadvantages, benefits and risks of numerous strategies, including well-designed tools such as:

- Family Limited Partnership
- Trusts
- Residential Real Property
- IRAs and 401(k) Plans
- Life Insurance

**Register
Online!
RSNA.org/register**

1:30 p.m. – 5:00 p.m.

Effective Investment Strategies

Includes textbook written specifically for the course!

**Presented by
J. Michael Moody,
MBA**

If you are baffled by continuing chaos in the stock market and the dizzying array of investment alternatives, or if you are struggling with the uncertainty of your own longevity and the returns you have earned in your lifetime, this acclaimed investment education course will provide you with the tools necessary to achieve your investing goals. There is absolutely no sales pitch.

Fast-paced and interactive, this practical and unbiased course compares and contrasts the advantages, disadvantages, benefits and risks of numerous investments, investing strategies and vital issues. Topics include:

- Why Money Managers Don't Want You to Know About Index Funds
- Strategies to Protect Profits and Lower Risk in Volatile Markets
- Selecting Mutual Funds Suited to Your Needs—Not Wall Street's
- Online Trading: Appreciate Its Benefits But Watch for the Pitfalls
- Exchange Traded Funds: Are They Superior to Index Funds?

RSNA Education



Research & Education Foundation Donors

THE Board of Trustees of the RSNA Research & Education Foundation and its recipients of research and education grant support gratefully acknowledge the contributions made to the Foundation **July 25 – August 18, 2006.**

The Foundation is now recognizing donors for their cumulative giving. These donors will

be recognized for achieving giving milestones through the Foundation's Visionary Donor Program. A complete roster of Visionary Donors will be listed in the 2006 RSNA Annual Report.

For more information on Foundation activities, go to RSNA.org/foundation.

PLATINUM VISIONARY DONORS (\$25,000 CUMULATIVE)

Judy M. & William A. Murphy Jr., M.D.

SILVER VISIONARY DONORS (\$10,000 CUMULATIVE)

Ada & Hector T.G. Ma, M.D.

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\$1,000 – \$4,999

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 RSNA
In memory of James J. McCort, M.D.

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In memory James J. McCort, M.D.
 Lloyd D. Wagner, M.D.

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 Judith K. Amorosa, M.D. & Louis F. Amorosa, M.D.
In memory of Klara and Lorant Korek
 Sandra & Klonie L. Berend, M.D.
 Mary P. Braeuning, M.D.

Yoon O. Chang, M.D.
 Sonya L. & Heratch O. Doumanian, M.D.
 Jacqueline & Anthony N. Hein, M.D.
 Richard M. Heller, M.D.
 Guenter W. Kauffmann, M.D., Ph.D.
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 Richard S. Young, M.D.

\$1 – \$199

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In memory of James J. McCort, M.D.
 Gilbert J. Daniel, M.D.
 Stephen D. DeFriez, D.O.
 Mary & Raymond L. Del Fava, M.D.
 Laura L. Richard B. Gunderman, M.D., Ph.D.
 Pupinder S. Jaswal, M.D.

VISIONARIES IN PRACTICE PROGRAM

St. Paul Radiology *St. Paul, Minn.*



\$10,000
Bronze Level

Casper Medical Imaging *Casper, Wyo.*



\$7,922

EXHIBITOR'S CIRCLE PROGRAM

MedBuild

\$1,000
Bronze Level

U-Systems, Inc.

\$1,000
Bronze Level

RIS Concepts, Inc.



\$1,000
Bronze Level

Xoran Technologies, Inc.



\$1,000
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In memory of James J. McCort, M.D.
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 Caryl K. & Edward R. May, M.D.
 Mary Anne & C. Douglas Maynard, M.D.
In memory of Edward C. Nagy
 Su-Ann Ng, M.D.
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 Albert V. Porambo, M.D.
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Albert A. Rayle Jr., M.D.
 William D. Reed, M.D.
 Dean J. Rodman, M.D.
 Luca Saba, M.D.
 Jason M. Stoane, M.D.
In memory of Jack Haller, M.D.
 Philip Thomason, M.D.
 Jeffrey H. West, M.D.

Silver Visionary Recognized

Hector T.G. Ma, M.D. (center), receives recognition from RSNA R&E Foundation Board of Trustees Chair Peggy J. Fritzsche, M.D., for his \$10,000 contribution in support of the Foundation's Silver Anniversary campaign.

Also gathered for Dr. Ma's recognition at the RSNA booth at the 2006 Asian Oceanian Congress of Radiology (AOCR) were (from left): **William G. Bradley Jr., M.D., Ph.D., R&E Foundation Fund Development Committee Chair; Anne G. Osborn, M.D., R&E Foundation Board of Trustees liaison for fund development; Theresa C. McLoud, M.D., 2006 RSNA Board of Directors chair; Hedvig Hricak, M.D., Ph.D., 2006 RSNA Board liaison for publications and communications; Lilian Leong, M.D., M.B.A., AOCR president; and Beverly Huckman, R&E Foundation Trustee.**



Journal Highlights

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

Quantitative MR Imaging in Alzheimer Disease

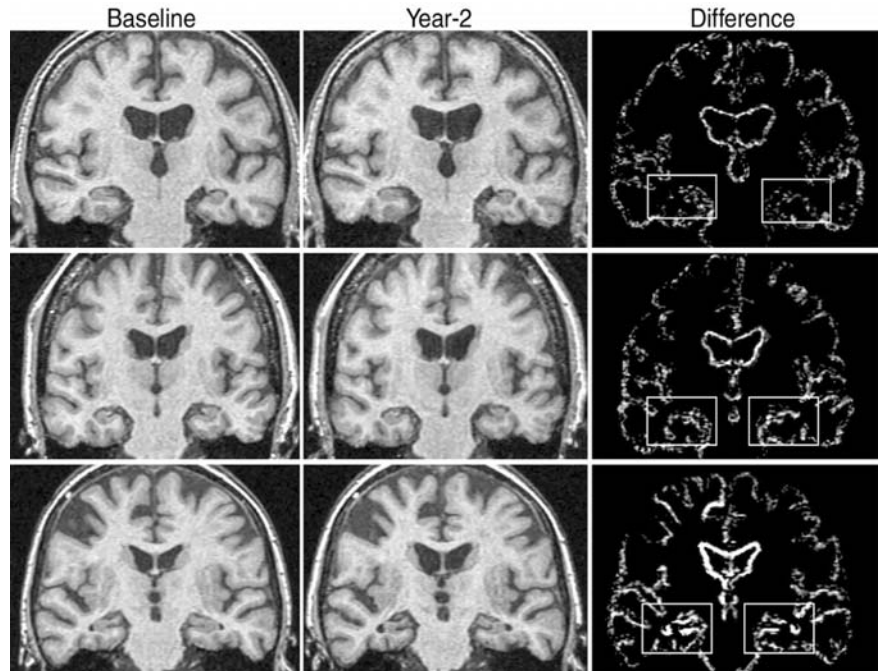
MULTIMODAL MR imaging has emerged as critical in the search for a noninvasive and objective early Alzheimer disease (AD) diagnosis that supports efforts toward disease prevention and the modification of disease progression.

In a review

Radiology

article in the October issue of *Radiology* (RSNA.org/radiologyjnl), authors Anita Ramani, Ph.D., Jens H. Jensen, Ph.D., and Joseph A. Helpert, Ph.D., note that new quantitative MR imaging methods are being developed that exploit known pathogenic mechanisms exclusive to AD. Looking at the role of current MR applications utilizing quantitative parametric approaches—including volumetry, diffusion, magnetization transfer and nuclear MR relaxation times—in the differential diagnosis of AD, the authors note:

- Volumetric studies of the AD brain using MR imaging have been motivated by findings that brain atrophy occurs first in the hippocampal formation and associated entorhinal cortex before progressing elsewhere
- Diffusion-based MR techniques have been used to achieve in vivo estimates of AD-related structural changes, and greater accuracy is likely with higher field strengths and improvements in gradient coils and postprocessing techniques
- T1-weighted MR images are useful for assessing the topographic distribution of cortical and subcortical atrophy



Coronal unenhanced baseline (left) and coregistered year 2 follow-up (middle) T1-weighted MR images and normalized difference displayed with narrower 20 percent signal intensity window to enable visualization of brain tissue loss within the boundary region (right). Rectangles are location of the medial temporal lobe (MTL) region. Coronal sections through foot of the hippocampus are shown for three representative study participants. **Top:** Images in a 72-year-old man who remained healthy at year 6.4 after baseline; annual MTL atrophy rate was 0.2 percent. **Middle:** Images in a 70-year-old woman who remained healthy at year 2 and declined to mild cognitive impairment by year 6; annual MTL atrophy rate was 0.8 percent. **Bottom:** Images in a 77-year-old man with normal findings at baseline who declined to AD by year 2; annual MTL atrophy rate was 1.3 percent.

(*Radiology* 2006;241:26-44) © RSNA, 2006. All rights reserved. Printed with permission.

“In AD, biochemical changes precede macroscopic structural abnormalities,” the authors write. “Quantitative parametric MR imaging may, therefore, be more sensitive than conventional MR imaging in the early stages of the pathologic process and may augment the specificity with which MR-visible abnormalities can be defined.”

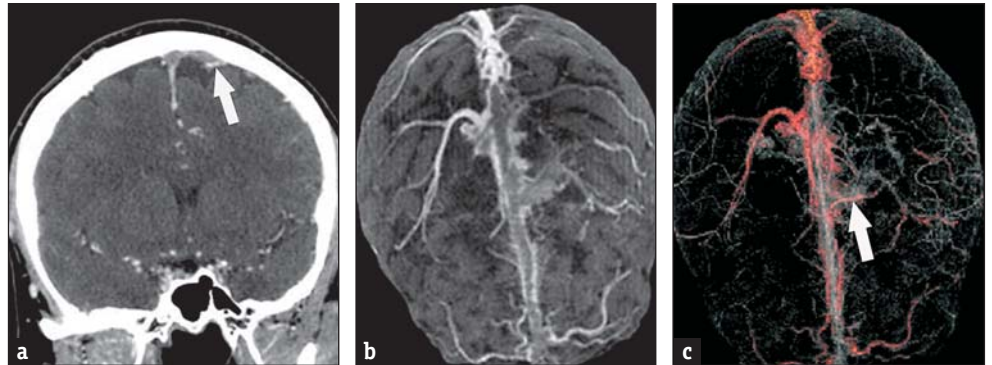
Cerebral Venous Thrombosis and Multidetector CT Angiography: Tips and Tricks

OWING to its vascular detail and ease of interpretation, CT venography can provide a rapid and reliable diagnosis of cerebral venous thrombosis.

In an **RadioGraphics** article in the October special issue of *RadioGraphics* (RSNA.org/radiographics), a monograph issue on neuroradiology, Mathieu H. Rodallec, M.D., of the Department of Radiology at Fondation Hôpital Saint-Joseph in Paris, and colleagues describe the use of CT venography to diagnose cerebral venous thrombosis, emphasizing different methods of postprocessing CT data and the typical advantages and pitfalls of these methods.

Noting CT venography can immediately follow unenhanced CT in patients with suspicion of cerebral venous thrombosis, to speed diagnosis, Dr. Rodallec and colleagues:

- Present the pathophysiology, clinical diagnosis and treatment of cerebral venous thrombosis
- Discuss technical aspects of CT venography with a focus on data acquisition and postprocessing



Thrombosis of the superior sagittal sinus in a 31-year-old woman.

(a) Coronal reformatted 2D maximum intensity projection CT image shows the empty delta sign in the superior sagittal sinus with enlargement and a vascular defect of the adjacent cortical vein. Note the small collateral vein (arrow) under the enlarged thrombosed cortical vein. (b) Three-dimensional integral image from CT venography (superior view) shows thrombosis of the anterior part of the superior sagittal sinus with extension to the left frontoparietal cortical veins. (c) Three-dimensional volume-rendered image from CT venography with an inferior cut (same projection as in b) shows the collateral pathways along the superior sagittal sinus and under the enlarged thrombosed cortical vein (arrow).

(*RadioGraphics* 2006;26 Special Issue:5-18) © RSNA, 2006. All rights reserved. Printed with permission.

- Describe normal anatomy and typical variants that should not be confused with cerebral venous thrombosis
- Present imaging findings of cerebral venous thrombosis with CT venography
- Compare multisection CT to other imaging modalities in the diagnosis of cerebral venous thrombosis.

“CT venography should be strongly recommended when cerebral venous

thrombosis is suspected, particularly in situations in which MR imaging has inconclusive results, is not available, or is contraindicated,” Dr. Rodallec and colleagues write. “In patients with unenhanced CT findings suggestive of venous thrombosis, CT venography can be performed without delay to confirm the diagnosis and to start appropriate therapy immediately.”

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

RadioGraphics Editorials Detail RSNA 2006 Exhibits, Posters and Informatics

Available free online is the full text of two editorials appearing in the September-October issue of *RadioGraphics*, detailing changes in how education exhibits, scientific posters and informatics demonstrations will be presented at RSNA 2006.

“Electronic Education Exhibits and Scientific Posters: A Brief Review of an Evolving Feature of the Annual Meeting,” by Kerry M. Link, M.D., is available at radiographics.rsnaajnl.org/cgi/content/full/26/5/1263.

“Informatics at RSNA 2006: Major Informatics Initiatives in a Fresh Learning Environment,” by Adam E. Flanders, M.D., is available at radiographics.rsnaajnl.org/cgi/content/full/26/5/1259.



Radiology in Public Focus

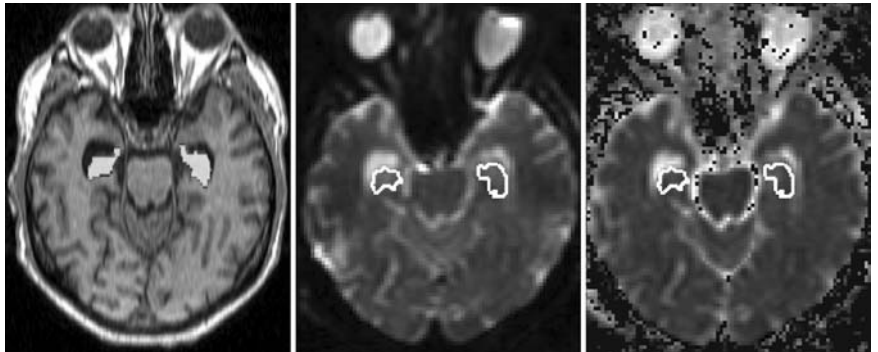
Press releases have been sent to the medical news media for the following articles appearing in the October issue of *Radiology* (RSNA.org/radiologyjnl):

Mild Cognitive Impairment: Apparent Diffusion Coefficient in Regional Gray Matter and White Matter Structures

A NEW WAY of mapping the apparent diffusion coefficient (ADC) of various brain areas could have implications for discriminating between normal aging and mild cognitive impairment (MCI) that may lead to Alzheimer disease (AD).

Kimberly M. Ray, M.D., of the University of California, Irvine, and colleagues demonstrated that the ADC of various medial temporal lobe structures and the gray and white matter of different brain lobes can be determined with mapping techniques and a region of interest (ROI) obtained from 3D high-spatial-resolution anatomic images.

Dr. Ray and colleagues performed MR imaging in 13 patients with MCI and 13 control subjects. They found that the ADC trace value in the patients with MCI was significantly elevated in



Hippocampus region of interest (ROI) traced on transverse anatomic MR image (left), mapped ROI onto reference echo-planar image (middle), and apparent diffusion coefficient (ADC) trace map (right) from one patient with mild cognitive impairment (MCI). Reference image ($b = 0 \text{ sec/mm}^2$) was acquired with a multi-section two-dimensional echo-planar imaging sequence (6300/100). ADC map was calculated by using the diffusion-weighted image ($b = 1000 \text{ sec/mm}^2$) relative to the reference image.

(Radiology 2006;241:197-205) © RSNA, 2006. All rights reserved. Printed with permission.

the hippocampus, temporal lobe gray matter and corpus callosum. ADC trace value of the hippocampus was also negatively correlated with the patients' performance scores on memory tests.

"The technique may provide an efficient method for assessing regional changes not limited by placement of a

small ROI," the team writes. "In combination with other MR-based techniques, such as hippocampal volumetry and hydrogen MR spectroscopy, our technique ... may provide additional information to possibly help predict conversion of MCI to AD."

Performance Benchmarks for Screening Mammography

A six-year study of mammography outcomes from more than 800 radiologists at almost 200 mammographic facilities has revealed that while a majority of radiologists surpassed published performance recommendations, the recall rate for almost half of radiologists was higher than the recommended rate.

Robert D. Rosenberg, M.D., of the University of New Mexico Health Sciences Center, and colleagues obtained data from six Breast Cancer Surveillance Consortium (BCSC) registries located across the country. Such a sur-

vey was necessary, they write, because there is a lack of generalizable literature concerning the actual performance of radiologists in the U.S. and therefore a limited knowledge of optimal and achievable performance targets.

The demographic makeup of the population living in the six BCSC sites is comparable to that of the U.S. as a whole. Analyzing more than 2.5 million screening mammographic studies from 1.1 million women, the team determined the mean performance outcomes for the middle 50 percent of radiologists.

"Our study findings indicate the range of performance benchmarks for screening mammography performed by community radiologists in the U.S. and should be useful as comparative data for individual radiologists and for establishment of outcome guidelines," Dr. Rosenberg and colleagues write. *(Radiology 2006;241:55-66)*

Fracture Risk (FRISK) Score: Geelong Osteoporosis Study

Researchers in Australia have developed a fracture risk (FRISK) score they say successfully predicted 75 percent of fractures two years after baseline.

Margaret Joy Henry, B.Sc., Ph.D., of the Department of Clinical and Biomedical Sciences at the University of Melbourne, and colleagues created the FRISK score by analyzing bone mineral density (BMD) of the hip and spine, frequency of falls, number of previous fractures and body weight. The researchers compared 231 women aged 60 years or older who had sustained a low-trauma fracture of the hip, spine, humerus or distal forearm with 448 women who had not sustained a fracture during the same period.

Applying the FRISK score in a longitudinal study of 600 women, Dr. Henry and colleagues found that, after adjustment for BMD, fracture risk was elevated by frequent falls, increases in weight, or previous fracture.

“The results of our study suggest that an overall assessment of fracture risk ... can predict future fracture with good sensitivity and specificity,” the researchers write. “We believe the FRISK score presented in this study can be of assistance in making treatment decisions.”

Media Coverage of Radiology

AUGUST media coverage of research from the 2005 RSNA meeting and journals reached an audience of 827 million people worldwide.

Radiology press releases detailed a study by Raul N. Uppot, M.D., on the effects of obesity when performing diagnostic imaging exams (*Radiology* 2006; 240:435-439) and another by Wolfgang Mlekusch, M.D., on carotid artery stenting leading to a reduction in vascular depression symptoms (*Radiology* 2006; 240:508-514).

Media coverage included television placements with *NBC Nightly News* with Brian Williams and *The Tonight Show* with Jay Leno. Stories also appeared in *USA Today*, *Los*

Angeles Times, *The Washington Post*, *Rocky Mountain News* of Denver, *St. Louis Post-Dispatch*, *The Blade* of Toledo, Ohio, *The*

Chicago Sun-Times, *The Daily Herald* of Suburban Chicago, *The Vancouver (British Columbia) Sun*, *The Globe and Mail* of Toronto and *The Daily Mirror* of London.

Stories also appeared in *SEED* magazine and on the online outlets *Red Herring*, BBC News Online, *MSNBC.com*, *CBSNews.com*, *CNN.com*, Yahoo! News, *Forbes.com*, Reuters UK, Web MD, *DrKoop.com* and *Canada.com*.

Additional RSNA media coverage appeared in *The Indianapolis Star* and *The Grand Rapids (Michigan) Press* and on *About.com*.



EDUCATION RESEARCH

Program and Grant Announcements

NIH Grantsmanship Workshop

November 25, 1-5 p.m. • McCormick Place, Chicago

Held before the annual meeting, this workshop covers grantsmanship techniques including writing, concept development, submission and the NIH review process. Attendees will also experience a mock study section. Facilitated by Lee Rosen, Ph.D., of the NIH Center for Scientific Review, the workshop also will feature speakers who can address basic applications as well as K grants and the overall NIH grant application experience. Registration is available by visiting rsna2006.rsna.org and clicking on Registration, Housing & Courses.

IHE® Educational Conference POSTPONED

The Integrating the Healthcare Enterprise (IHE®) educational conference scheduled for January 2007 has been postponed. Please watch future issues of *RSNA News* for more information.

The IHE Connectathon will be held as scheduled January 15-19, 2007 in Chicago. For more information, go to www.ihe.net/events/connectathon07.



Working For You

RSNA Committees

THIS MONTH *RSNA News* begins a series highlighting the work of RSNA's many volunteer committees. Approximately 70 committees and subcommittees comprising more than 800 RSNA members fulfill critical obligations for the Society such as implementing research programs, providing editorial guidance for publications and developing fundraising initiatives.

Scientific Program Committee

THE Scientific Program Committee is responsible for reviewing and selecting all scientific papers prof-
ferred for the RSNA annual meeting and for organizing special symposia. Currently chaired by Gerald D. Dodd III, M.D., the committee includes 17 sub-
committees that focus on the various subspecialties represented at the meeting. Reviewing more than 6,000 abstracts submitted from all over the world for paper and poster presentation, these volunteers ensure that annual meeting attendees are exposed to the most cutting-edge devel-

opments in radiology.

"During May, the more than 130 distinguished members of the Scientific Program Committee read and grade every abstract submitted for consideration," said Dr. Dodd. "It's an enormous task and we are fortunate to

have a great group of bright and dedicated members on the committee."

The Scientific Program Committee also determines the content of and people participating in several of the plenary sessions and special focus sessions at the annual meet-



Gerald D. Dodd III, M.D.

ing and makes recommendations to the RSNA Board of Directors regarding certain award programs.

More information about the Scientific Program Committee, including current members and the 2005 committee chair

report, can be found at RSNA.org/About/whoswho/committees/sci_program.cfm. To learn about all committees and opportunities to volunteer, go to RSNA.org/About/volunteer.cfm.

Working for you
COMMITTEE PROFILE



2006 Faculty Development Workshop

The RSNA 2006 Faculty Development Workshop, held July 28 in Oak Brook, Ill., focused on self-assessment modules (SAMs). Led by Jannette Collins, M.D., M.Ed., the hands-on workshop also addressed the audience-response system used in refresher and categorical courses. Dr. Collins also discussed case-based teaching. In addition, participants sharpened their teaching skills with breakout sessions on writing multiple-choice questions.



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

News about RSNA 2006

Final Advance Registration

THE FINAL advance registration deadline for RSNA 2006 is **November 10**. North Americans who register in advance will have their registration materials mailed to them prior to the meeting. International attendees, whose registration forms are received by **October 27**, will have their registration materials mailed to them. If registered after Octo-

ber 27, international documents will be available for pick-up onsite at Professional Registration in the Lakeside Center Ballroom, Desk A.

Fees

Registration fees are \$100 higher onsite for most registration categories.

Housing

The deadline to make and change housing reservations through RSNA is **November 6**. After that date, contact hotels directly. For more specific information, go to rsna2006.rsna.org and click on Registration, Housing & Courses in the left-hand column.

United Airlines Discount

United.com offers RSNA attendees a 10 percent discount on select United Airlines, United Express and TED qualifying flights. Use the electronic certificate number 553SB to make your discounted airline reservation online at *United.com*. If you prefer, call United (1-800-521-4041) or your personal travel agent and mention the United discount ID number 553SB to be eligible for the discounted fares.

Travel Restrictions and Safety

If traveling by air, please stay up-to-date on airport security measures by visiting the U.S. Department of Homeland Security at www.dhs.gov/dhspublic/display?theme=20&content=3096.



92nd Scientific Assembly and Annual Meeting
November 26–December 1, 2006
McCormick Place, Chicago

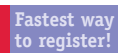
Registration Fees

BY 11/10 ONSITE

\$0	\$100	RSNA Member, AAPM Member
\$0	\$0	Member Presenter
\$0	\$0	RSNA Member-in-Training, RSNA Student Member and Technical Student
\$0	\$0	Non-Member Presenter
\$120	\$220	Non-Member Resident/Trainee
\$120	\$220	Radiology Support Personnel
\$570	\$670	Non-Member Radiologist, Physicist or Physician
\$570	\$670	Hospital Executive, Research and Development Personnel, Healthcare Consultant, Industry Personnel
\$300	\$300	One-day registration to view only the Technical Exhibits area

4 Ways to Register in Advance

1 Internet

Go to RSNA.org/register. Use your member ID# from the *RSNA News* label  or meeting flyer sent to you. If you have questions, send an e-mail to rsna@itsmeetings.com.

2 Fax (24 hours)

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

3 Telephone (Mon.–Fri.,

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

4 Mail

ITS/RSNA 2006
108 Wilmot Rd.,
Suite 400
Deerfield, IL 60015-5124
USA

Onsite Registration

Those who register in advance can wear their badges at the McCormick Place Convention Center and proceed directly into exhibit halls and classrooms. Those who need to register onsite should proceed to Professional Registration in the Lakeside Center Ballroom.

Hours of Operation

Saturday (November 25) 12:00 p.m. – 6:00 p.m.
Sunday – Thursday (November 26–30) 7:00 a.m. – 5:00 p.m.
Friday (December 1) 7:30 a.m. – 12:00 p.m.

For more information about registering for RSNA 2006, visit rsna2006.rsna.org, e-mail reginfo@rsna.org, or call 1-800-381-6660 x7862.

Navigating RSNA 2006

To make the most out of the annual meeting, you should be familiar with some of the publications, procedures and features of RSNA 2006.

Name Badge

You must wear your name badge at McCormick Place to attend RSNA courses or events or enter the exhibit halls. The bar code on the name badge may be scanned upon entry and exit of the exhibit halls. Data accumulated from the scanning process will be used only by RSNA to determine exhibit hall activity.

Pocket Guide

The RSNA 2006 *Pocket Guide* is an important, easy-to-use reference guide for the annual meeting. It includes two main sections:

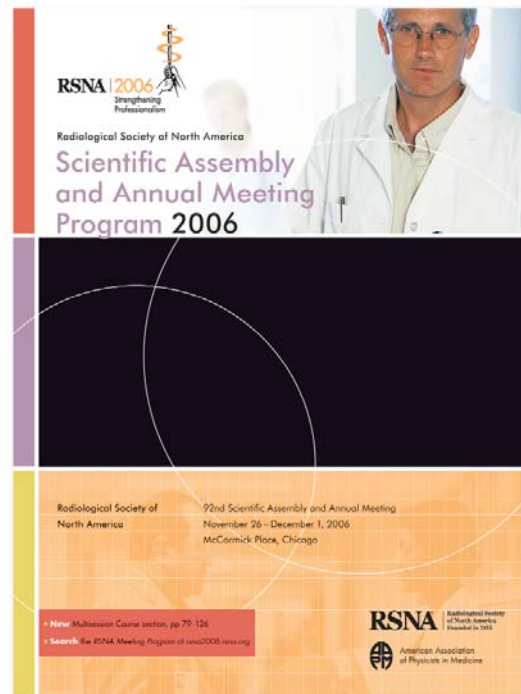
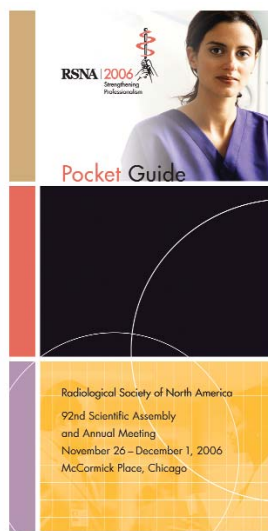
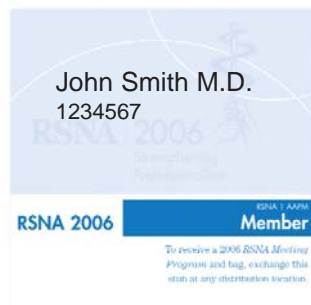
Overview of the RSNA Scientific Assembly and Annual Meeting

- Complete A-Z listing of everything available to attendees
- Room assignments for the scientific sessions, refresher courses 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, cost and boarding information
- Complete Metra Train System schedule outlining station locations, times and drop-off destinations
- Parking lot locations, hours and fees

Transportation information is also available online at rsna2006.rsna.org by clicking on Transportation in the left-hand column.



RSNA Meeting Program and Official Meeting Bag

One complimentary copy of the *RSNA Meeting Program* and one RSNA 2006 official meeting bag is available with the presentation of a blue, red or green badge ticket stub at either Program Distribution Location. Additional copies of the *RSNA Meeting Program* will be available to RSNA members at the Education Stores for \$10 each. New

copies are available for \$45 each to holders of badges in colors other than blue, red or green.

The *RSNA Meeting Program* is also available at rsna2006.rsna.org. The online version makes it quick and easy to search and customize a schedule for RSNA 2006. The program will be available online in early October and remain online after the meeting.

Meeting Guide

The RSNA 2006 *Meeting Guide* features floor maps of McCormick Place, various program and transportation schedules and a comprehensive listing of the technical exhibitors, including contact information and booth number for each. The *Meeting Guide* will be available in bins adjacent to the *Daily Bulletin*.

Transportation

RSNA offers shuttle bus service to and from McCormick Place. A dedicated bus lane makes the trip quick and easy, even during rush hours. Routes servicing 35 hotels in the RSNA block use the dedicated lane.



A free Metra Train System pass will be included with the annual meeting registration materials. Metra trains run from two downtown Chicago stations (Randolph Street and Van Buren Street) to the McCormick Place Station. The trip is approximately seven minutes.

For more information about shuttle bus service and Metra, including arrival and departure schedules, go to rsna2006.rsna.org and click on Transportation in the left-hand column.

One-Day Badge

A one-day badge is available to view the technical exhibits area only. The badge can be purchased onsite on the day of use for \$300 at Exhibitor Registration, Grand Concourse, Level 3. Attendance for more than one day requires a full conference purchase at Professional Registration, Lakeside Center Ballroom.

Services for International Attendees

- **Certificate of Attendance** – Attendees can use the computers in the Internet zones to print a personalized certificate of attendance.
- **Foreign Currency Exchange Services** – Exchange foreign currency, cash foreign or U.S. denomination traveler's checks or purchase phone cards at the Business Center located on the Grand Concourse – Level 2.5
- **Interpretation Services** – International attendees can find answers to their conference questions at the Help Centers and at Professional Registration. Assistance in Chinese, Dutch, French, German, Italian, Japanese, and Spanish will be available.

- **Travel** – ESA Voyages, the official international travel provider of RSNA 2006, will be available at the Help Center (Grand Concourse, Level 3) and at Professional Registration to assist with travel-related inquiries.

Important Dates for RSNA 2006

- Oct. 27** International deadline to have full-conference badge and tickets mailed in advance
- Nov. 6** Final housing reservation deadline
- Nov. 10** Advance registration deadline
- Nov. 26–Dec. 1** RSNA 92nd Scientific Assembly and Annual Meeting

Each physician can earn up to **85 AMA PRA Category 1 Credits** at RSNA 2006

Daily Bulletin
Meeting Guide
YOUR GUIDE TO MCCORMICK PLACE DURING RSNA 2006

Includes: Exhibitor List, Page B, Monthly Exhibitor Schedule

Exhibitor List:

- Level 1:**
 - 101-110: General Exhibitors
 - 111-120: General Exhibitors
 - 121-130: General Exhibitors
 - 131-140: General Exhibitors
 - 141-150: General Exhibitors
 - 151-160: General Exhibitors
 - 161-170: General Exhibitors
 - 171-180: General Exhibitors
 - 181-190: General Exhibitors
 - 191-200: General Exhibitors
- Level 2:**
 - 201-210: General Exhibitors
 - 211-220: General Exhibitors
 - 221-230: General Exhibitors
 - 231-240: General Exhibitors
 - 241-250: General Exhibitors
 - 251-260: General Exhibitors
 - 261-270: General Exhibitors
 - 271-280: General Exhibitors
 - 281-290: General Exhibitors
 - 291-300: General Exhibitors
- Level 3:**
 - 301-310: General Exhibitors
 - 311-320: General Exhibitors
 - 321-330: General Exhibitors
 - 331-340: General Exhibitors
 - 341-350: General Exhibitors
 - 351-360: General Exhibitors
 - 361-370: General Exhibitors
 - 371-380: General Exhibitors
 - 381-390: General Exhibitors
 - 391-400: General Exhibitors
- Level 4:**
 - 401-410: General Exhibitors
 - 411-420: General Exhibitors
 - 421-430: General Exhibitors
 - 431-440: General Exhibitors
 - 441-450: General Exhibitors
 - 451-460: General Exhibitors
 - 461-470: General Exhibitors
 - 471-480: General Exhibitors
 - 481-490: General Exhibitors
 - 491-500: General Exhibitors

Daily Bulletin
SUNDAY

How Many Slices are Enough When It Comes to CT?
Development in CT technology suggests one of the fastest growing sectors of medical imaging.

Physicians in High Health Professions
The American Medical Association (AMA) has announced that it will be launching a new initiative to support the development of high health professions.

Physicians' Address: Radiologists, Radiation Oncologists Should Form Stronger Bonds
The American Society of Radiologists (ASR) and the American Society of Radiation Oncology (ASTRO) have announced that they will be forming a new partnership.

Top of the Day
Radiology news and information, including medical equipment, in this special daily bulletin.

Daily Bulletin

The *Daily Bulletin* is the official newspaper of the RSNA annual meeting. It features overnight news from the meeting and new products and services from some of the technical exhibitors. The *Daily Bulletin* can be found in bins throughout McCormick Place. The entire *Daily Bulletin* will also be available online at RSNA.org/bulletin.

Exhibitor News

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 and 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 the alternate information directly to the exhibitor at the point of contact. They may also visit either Help Center at McCormick Place to change registration and ExpoCard detail.



Latest Exhibitor List Online

Plan your participation at RSNA 2006 early with a searchable database of RSNA 2006 technical exhibitors available at RSNA.org/showcase. Updated weekly, the database includes a list of the technical exhibitors, booth numbers and company information as well as an interactive floor plan.

Technical Exhibit Hours

Sunday – Wednesday
(November 26–29) 10:00 a.m. – 5:00 p.m.
Thursday, November 30 . . . 10:00 a.m. – 2:00 p.m.



Cyber Oases Available in Technical Exhibit Halls

Attendees can use the computers in the Cyber Oases to access e-mail, meeting messages and the Internet. Oases will be located in the South Building at booth 2277 and in the North Building at booth 8368. Complimentary coffee and bottled water from the Chicago Convention and Tourism Bureau will be available at the Cyber Oases from 2:00 p.m. to 4:00 p.m., Sunday, November 26 through Wednesday, November 29.

New Product Announcements in Daily Bulletin

Announcements in the New Products section of the *Daily Bulletin* highlight the very newest radiologic technology and services available. Different products will be featured in this section Sunday

through Thursday during the annual meeting. For the first time at RSNA 2006, a PDF of this section also will be available at RSNA.org/bulletin.

MEETING WATCH RSNA HIGHLIGHTS

REGISTER NOW!

RSNA Highlights: Clinical Issues for 2007

REGISTRATION continues for RSNA's new educational conference, RSNA Highlights: Clinical Issues for 2007. The conference will be held February 26–28, 2007, at the J.W. Marriott Desert Ridge Resort & Spa in Phoenix.

A concentrated educational package, the conference offers four refresher courses in each of these topic

areas—cardiac imaging, PET/CT, breast imaging and sports injuries. Also offered will be two hot topics courses, “Comprehensive Imaging for Acute Stroke Treatment” and “Optimal Techniques for Multidetector CT and MR of the Liver.” Access to select electronic education exhibits from



RSNA 2006 also will be available.

For more information about course content or to reserve a room or request a conference brochure, visit RSNA.org/highlightsconference.

Product News

NEW PRODUCT

Portable Digital System

Canon (www.usa.canon.com) has introduced the CXDI-50C, a portable digital radiography system for the emergency room and trauma, the intensive care unit, bedside exams and other applications. Proprietary LANMIT (Large Area New-MIS Sensor and TFT) detector technology is designed to deliver diagnostic images efficiently with minimal x-ray exposure to patients. The system consists of a Canon-designed Amorphous Silicon Flat Panel Detector and a cesium iodide scintillator, allowing for effective x-ray absorption and high signal-to-noise performance. The system weighs 10.6 pounds, with an imaging area of 14 x 17 inches.



FDA CLEARANCE

Monochrome Digital Mammography Display

The Totoku (www.totoku.com) ME551i2 display has been granted FDA approval for use in all digital mammography applications. A 21.3-inch, 5-megapixel, DICOM-compliant diagnostic display, the ME551i2 has an 11.9-bit grayscale palette and 750 cd/m² brightness. The display also includes a feature to achieve accurate luminance uniformity across the screen, reducing the luminance variance specification by more than 50 percent over that of an uncorrected panel, according to the company.



FDA CLEARANCE

More Efficient Stereotactic Radiosurgery Solution

THE FDA has given pre-market clearance to the Elekta AB (www.elekta.com) Leksell Gamma Knife® PERFEXION™, used for stereotactic radiosurgery. According to the company, PERFEXION offers potential increases in patient volume by offering a wider range of treatable anatomical structures. Also designed to make procedures safer and more efficient, PERFEXION has a control program able to sculpt accurate dose distribution and make collimator changes in seconds. Physicians may save 30 minutes to one hour per patient, the company said.

NEW PRODUCT

SPECT Pre-Clinical Imaging Camera

Gamma Medica-Ideas (www.gm-ideas.com) has introduced a new cadmium zinc telluride (CZT)-based SPECT camera for the company's FLEX Triumph™ pre-clinical imaging platform. CZT crystals improve the camera's signal-to-noise ratio so that when a gamma ray strikes the crystal, an electrical signal is produced and a digital image instantly generated, versus a longer process required by earlier generation gamma cameras. The detector material in the new camera can also be safely positioned directly adjacent to strong magnets, enabling the ultimate design of combined SPECT/MR imaging systems.



Discover the Benefits of RSNA Membership

More than 38,000 radiologists, radiation oncologists, medical physicists and allied scientists enjoy the benefits of RSNA membership. Full members in North America (\$340 annually) are entitled to all of these benefits.

RSNA®

To learn more about RSNA membership, contact the RSNA membership office at (1-877) RSNA-MEM (776-2636). Outside the U.S. and Canada, call (1-630) 571-7873 or send an e-mail to membership@rsna.org. You may also download an application at RSNA.org/mbrapp.

For more information, visit RSNA.org.

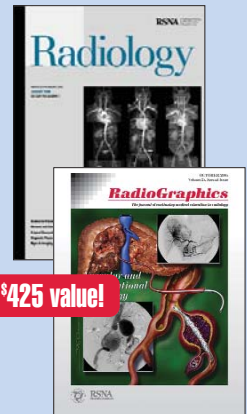
(Dues rate good through December 31, 2006)

FREE SUBSCRIPTIONS

to two leading radiology journals, *Radiology* and *RadioGraphics*, available in print and online

■ *Radiology* is the premier journal in the field, serving as the authoritative reference for the most current, clinically relevant and highest-quality radiology research.

■ *RadioGraphics* publishes the best in peer-reviewed educational material presented at the RSNA annual meeting.



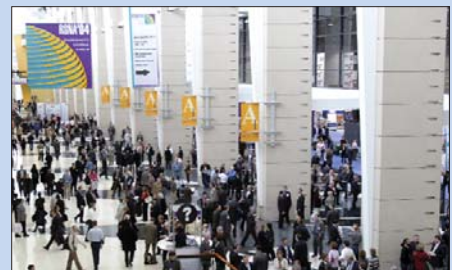
A \$425 value!

FREE ADMISSION*

to the world's largest medical meeting

*with advance registration

A \$570 value!



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for residents/fellows and medical students includes FREE online access to *Radiology* and *RadioGraphics*

FREE ACCESS TO CME CREDIT

in *RadioGraphics* and InteractED

RSNA
Education

FREE SUBSCRIPTION to

RSNA News, available in print and online

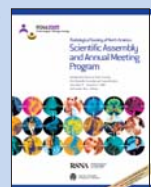
A \$20 value!



FREE COPY*

of the *RSNA Meeting Program*, the comprehensive guide to the RSNA annual meeting

*by request



DISCOUNT

on RSNA education materials

PUBLISHER PARTNERS

discounts on medical books

FREE ACCESS

to Community of Science Web site

RSNA.org

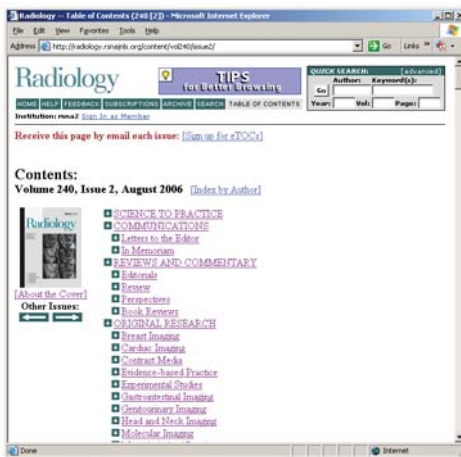
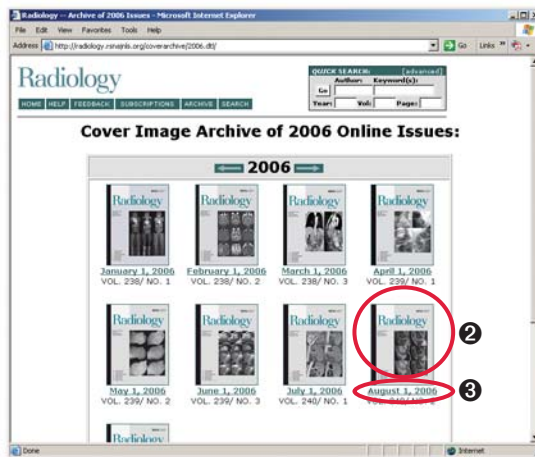
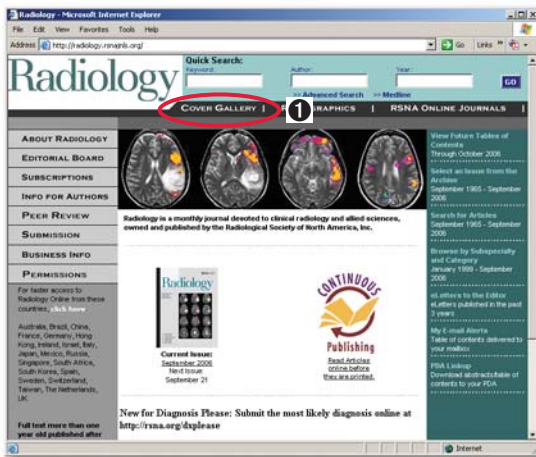
Radiology Cover Gallery

THE *Radiology* Cover Gallery is the latest development in the ongoing evolution of RSNA's 83-year-old peer-reviewed journal. RSNA began publishing images on the cover of *Radiology* for the first time in January 2006, as part of a redesign that also included adding color throughout the journal.

Radiology cover images showcase the kind of material published in the journal every

month. To access the Cover Gallery, go to radiology.rsnaajnl.org and click Cover Gallery at the top of the page ❶. To view an image, click on the cover ❷. Clicking on the date below the cover ❸ will take you to the Table of Contents for that issue ❹.

Clicking on the citation beneath the image ❺ will redirect you to the article in which the image appears.



connections Your online links to RSNA

- RSNA.org**
- Radiology Online**
RSNA.org/radiologyjnl
- Radiology Manuscript Central**
RSNA.org/radiologyjnl/submit
- Radiographics Online**
RSNA.org/radiographics
- NEW**
- Radiographics RGXPRESS**
RSNA.org/rgxpress
- RSNA News**
rsnanews.org
- Education Portal**
RSNA.org/education
- RSNA CME Credit Repository**
RSNA.org/cme
- CME Gateway**
CMEgateway.org
- RSNA Medical Imaging Resource Center**
RSNA.org/mirc
- RSNA Career Connection**
RSNA.org/career
- RadiologyInfo™**
RSNA-ACR patient information Web site
RadiologyInfo.org
- RSNA Press Releases**
RSNA.org/media
- My RSNA Profile & Benefits**
RSNA.org/memberservices
- RSNA Research & Education Foundation**
Make a Donation
RSNA.org/donate
- Community of Science**
RSNA.org/cos
- Membership Applications**
RSNA.org/mbrapp
- RSNA Membership Directory**
RSNA.org/directory
- Register for RSNA 2006**
RSNA.org/register
- RSNA 2006**
rsna2006.rsna.org
- RSNA Highlights: Clinical Issues for 2007**
RSNA.org/highlightsconference

Variety on the Menu at Chicago Restaurants During RSNA 2006

CHICAGO'S widely varied restaurants offer a respite after a full day of meetings, courses and walking through the extensive technical exhibition at RSNA 2006. Additional information about Chicago and its many attractions is available from the Chicago Convention and Tourism Bureau Web site at www.meetinchicago.com/rsna.

An extended restaurant list is available online at rsnanews.org.

437 RUSH

437 N. Rush; 1-312-222-0101

This Italian steakhouse, a block off Michigan Avenue, offers steak, lobster and regional fare in a classic setting. *Expensive*

676 RESTAURANT AND BAR

676 N. Michigan Ave.; 1-312-944-7676

This Omni Chicago Hotel restaurant boasts a view overlooking the Magnificent Mile and a moonscape mural on the ceiling. Menu highlights include flatbreads, a raw bar and "charcuterie," a selection of antipasti meats. *Expensive*

ALINEA

1723 N. Halsted St.; 1-312-867-0110

Unique food preparation, pairings and presentation highlight meals of 12-plus courses and several hours. Wine tasting progressions matched to each menu are recommended, as are reservations made well in advance. *Very Expensive*

AMBRIA

2300 N. Lincoln Park West; 1-773-472-5959

A favorite of visiting dignitaries and celebrities, this formal French masterpiece features dark wood-paneled walls and mountains of fresh flowers upstaged only by the food. Generous portions guarantee satisfied diners. *Very Expensive*

ARIA

200 N. Columbus Dr.; 1-312-444-9494

The Fairmont Hotel has recreated Aria as a Pan Asian restaurant, with an emphasis on seafood. A glass-enclosed private dining room adds to Aria's flair. *Expensive*

ARUN'S THAI RESTAURANT

4156 N. Kedzie; 1-773-539-1909

Personalized 12-course Thai dinner designed by the chef for each table, no menu. *Expensive*

AVEC

615 W. Randolph St.; 1-312-377-2002

At this restaurant popular enough to enforce a no-reservation policy, interesting vintages are paired rustic cheeses and in-house made sausages. Big meat dishes like pork shoulder share the menu with tapas such as fried sardines with ham. *Expensive*

AVENUE M

695 N. Milwaukee Ave.;

1-312-243-1133

The hip, bi-level lounge may be winning the popularity contest with the formal dining room at this colossal steakhouse. While lounge crowds sip colorful drinks and nosh on Kobe beef burgers, diners enjoy traditional steak, pasta and seafood. *Expensive*

AVENUES

108 E. Superior; 1-312-573-6754

This elegant, leather-accented restaurant in the Peninsula Hotel offers a view of Chicago's famous Water Tower along with European fish served in the French style. Some fish are boned tableside, adding an extra level of drama. *Very Expensive*

BALLO

445 N. Dearborn St.; 1-312-832-7700

This latest incarnation of the Chicago restaurant group Rosebud serves classic vats of homemade pasta and wood-fired true Italian pizzas. Vintage mafia flicks play on big screens, while throbbing music and a disco ball complete the scene. *Moderate*

BEN PAO

52 W. Illinois; 1-312-222-1888

The décor of this elegant Asian restaurant is dramatic—artistically lit black slate and red accents are juxtaposed with cascading water and still pools. Vegetarians will delight in the menu, which also features seafood, duck, beef and chicken. *Moderate*

BICE RESTAURANT

158 E. Ontario St.; 1-312-664-1474

This Chicago sister of the well-known Manhattan Bice, home of the power lunch, is also a see-and-be-seen restaurant. In art deco rooms painted in warm Tuscan colors, pastas compete with seafood and game in contemporary Italian presentations. *Expensive*

BIG BOWL

6 E. Cedar; 1-312-640-8888

60 E. Ohio; 1-312-951-1888

A casually elegant Asian restaurant with good vibes. A large, square bar fronts the dining room and an open kitchen occupies the back. *Moderate*

BLACKBIRD

619 W. Randolph; 1-312-715-0708

This trendy hot spot serves contem-

porary American cuisine with seasonal emphasis. *Expensive*

BLUE WATER GRILL

520 N. Dearborn St.; 1-312-777-1400

Steps from Michigan Avenue, this Manhattan transplant is all about fish with occasional beef offerings for the carnivores. Complete with a raw bar the shellfish platters, sushi rolls, and creative seafood entries are this New York-style eatery's mainstay. *Expensive*

BOKA

1729 N. Halsted St.; 1-312-337-6070

At BOKA, the theme under the unique fabric stretched ceiling is seafood. Start with seared Maine scallops with cauliflower puree, tartar of Atlantic salmon or the raw bar. Entrees include traditional steak, chicken and lamb along with pan-seared grouper. *Expensive*

BRASSERIE JO

59 W. Hubbard St.; 1-312-595-0800

Authentic French in every way, Brasserie Jo serves favorites such as steak frites, endive and blue cheese salad, escargot, steak béarnaise and six preparations of fish, all accompanied with wonderful wines. *Moderate*

BUTTER

130 S. Green St.; 1-312-666-9813

The new hot spot for trend-watching foodies, this West Loop restaurant features the self-described new American cuisine of famous restaurant alumnus Chef Ryan Poli. The bi-level, opulent room generates as many rave reviews as the chef. *Expensive*

CAFÉ BA-BA-REEBA!

2024 N. Halsted; 1-773-935-5000

At this festive DePaul hotspot, rhythmic Spanish music greets guests before the hosts do. Café Ba-Ba-Reeba! specializes in paella and sangria and tapas, small dishes of vegetables, seafood, cheese and Spanish sausages that are fun to share. *Inexpensive*

CAFÉ NORDSTROM

520 N. Michigan; 1-312-464-1515

This stylish cafeteria has revived many an exhausted shopper. Lunch spots are limited, so don't forget this oasis when visiting Nordstrom or the Shops at Nordstrom. *Inexpensive*

CALIFORNIA PIZZA KITCHEN

52 E. Ohio St.; 1-312-787-6075

Located two blocks from Michigan Avenue, and also on the 7th floor of Water Tower Place, this restaurant offers 29 individual-sized pizzas—some are traditional, others have fascinating ingredients such as caramelized pears and gorgonzola and even tandoori chicken. *Inexpensive*

CALITERRA

633 N. St. Clair; 1-312-274-4444

Located in the Wyndham Chicago Hotel, but with no outside signs, Caliterra is a hidden treasure where California meets Italy. Views include the city and the open kitchen, where activity revolves around Caliterra's woks, brick ovens and grills. *Expensive*

CAPE COD ROOM

140 E. Walton; 1-312-787-2200

The Cape Cod Room at the venerable Drake Hotel serves fresh seafood in a comfortable, cozy setting reminiscent of a seaside saloon. *Expensive*

CAPITAL GRILLE

633 N. St. Clair; 1-312-337-9400

One block from Michigan Avenue, the Capital Grille offers the best of steak house experiences. Ensclosed in the dark wood and leather interior, complete with oil paintings, waiters dressed in white aprons offer robust wines, oversize steaks and side orders as large as entrées. This is a restaurant for a hearty appetite. *Expensive*

CHARLIE TROTTER'S

816 W. Armitage; 1-773-248-6228

Reservations are scarce and a month's lead-time does not guarantee a table, but Charlie Trotter's is an experience that can't be duplicated. Choose between the grand menu and the vegetarian menu to begin the parade of imaginative dishes. *Very Expensive*

CARNIVAL

702 W. Fulton Market;

1-312-850-5005

The attention-grabbing décor, music and menu all contribute to a festive ambiance. Enjoy the ceviches along with harder fish and meat creations from Brazil, Colombia, Cuba and Puerto Rico. Request a table in the bi-level dining room. *Expensive*

CHEZ JOEL

1119 W. Taylor; 1-312-226-6479
This pretty French bistro is blossoming in the middle of Little Italy. *Moderate*

CHICAGO CHOP HOUSE

60 W. Ontario; 1-312-787-7100
This three-level restaurant features 1,400 photos of musicians, meat purveyors, city fathers, gangsters and every Chicago mayor. The first level is available to cigar, pipe and cigarette smokers; the second floor main dining room is cigarettes-only; the third-floor "Skybox" is nonsmoking. *Expensive*

CHINA GRILL

230 N. Michigan Ave.; 1-312-334-6700
A haven for trendy city-hoppers, the new Hard Rock Hotel gave new life to the neglected Carbide and Carbon Building. Stop by for a drink at Hard Rock's Base bar or dine at the China Grill, an Asian-influenced restaurant. *Expensive*

CHOCOLATE BAR AT THE PENINSULA HOTEL

108 E. Superior St.; 1-312-337-2888
Heaven on Earth for some and certainly not an experience to be duplicated, the Peninsula hotel offers a magnificent \$20 all-you-can-eat chocolate buffet on Friday and Saturday evenings—an absolutely perfect way to end the evening after dinner downtown. *Moderate*

CITÉ

Lake Point Tower, 505 N. Lake Shore Dr.; 1-312-644-4050
Situated on the rooftop of Lake Point Tower, Cité is for those who want to experience Chicago's sophisticated side. Cité offers French/Italian fare and is one of the few Chicago establishments to require jackets in both restaurant and bar. *Very Expensive*

COCO PAZZO

300 W. Hubbard; 1-312-836-0900
Tuscan cuisine served in a fabric-draped studio, complete with a beautiful bar. *Expensive*

CONNIE'S PIZZA

151 E. Wacker; 1-312-565-3661
2373 S. Archer Ave.; 1-312-326-3443
With a new location in downtown Chicago, this Windy City favorite serves serious pizza. *Inexpensive*

COPPERBLUE

Lake Point Tower, 505 N. Lake Shore Dr.; 1-312-527-1200
This jewel, hidden just east of Lake Shore Drive, is a small, elegant restaurant insulated from the clamor of nearby Navy Pier. An outstanding wine list and an experienced staff accompany the French-Mediterranean fare. *Very Expensive*

DECERO

814 W. Randolph St.; 1-312-455-8114
This lively restaurant on Randolph Street restaurant row offers regional

Mexican specialties in a stylized Roadhouse décor. The selection of creative tacos featuring braised duck and sautéed salmon is an excellent choice for sharing. *Moderate*

CUATRO

2030 S. Wabash Ave.; 1-312-842-8856
Hidden behind an 8-foot tall salt-water aquarium, Cuatro's kitchen pumps out dishes with an emphasis on seafood and preparations and spices derived from the Caribbean and Latin America. A Latin jazz Sunday brunch is popular with the locals. *Moderate*

CUSTOM HOUSE

500 S. Dearborn St.; 1-312-523-0200
This Printer's Row restaurant located in Hotel Blake is named for the Custom House Levee District, the former home of Chicago's bordellos, gambling parlors, and saloons. In addition to its main fare, steak, Custom House focuses on local farm-raised foods. *Expensive*

DAVID BURKE'S PRIMEHOUSE

616 N. Rush St.; 1-312-660-6000
At this ultramodern steakhouse, dry aged steaks are on view in a special temperature and humidity controlled salt cave. Enticing appetizers such as angry lobster and Kobe beef sashimi compete for attention against the main event—unreasonably large steaks. *Expensive*

DEVON SEAFOOD GRILL

39 E. Chicago Ave.; 1-312-440-8660
This Chicago newcomer offers Michigan Avenue shoppers a break from seemingly mandatory department store restaurant lunches and North Michigan Avenue hotel guests a break from hotel bars. A wrap-around bar is a local favorite for an after-work drink. *Moderate*

D'VINE RESTAURANT & WINE BAR

1950 W. North; 1-773-235-5700
Sleek wine bar serves a fusion of French, Asian and Mediterranean influenced dishes. *Expensive*

EVEREST

440 S. LaSalle; 1-312-663-8920
Enjoy Alsatian emphasis in French cuisine served on the 40th floor with a dramatic city view. This elegant restaurant competes with the best for sophisticated dining. *Very Expensive*

FOGO DE CHÃO

661 N. LaSalle St.; 1-312-932-9330
At this Brazilian "churrascaria"—all-you-can-eat meat carved tableside—waiters carry long skewers of chicken, filet mignon, leg of lamb, pork loin, pork ribs, rump steak and sausages. The fixed-price dinner also includes a 30-item salad bar. *Expensive*

FOLLIA

953 W. Fulton Ave.; 1-312-243-2888
Food and fashion unite at this charming Italian restaurant in the market district, which serves unpretentious, timeless Italian risottos, pastas and entrées cooked to order. The windows are decorated with mannequins wearing haute couture, available for purchase, designed by local college students. *Moderate*

FRANCESCA'S FORNO

1576 N. Milwaukee Ave.; 1-773-770-0184
At this triangular Wicker Park restaurant, floor-to-ceiling windows offer a great view of the busy six-point intersection that defines the neighborhood. Chicago's Francesca restaurants are known for delicious pasta and long waits for tables. *Very Expensive*

FRONTERA GRILL

445 N. Clark; 1-312-661-1434
Mexican food is taken to a new level in this festive restaurant five blocks from Michigan Avenue. *Moderate*

FULTON'S ON THE RIVER

315 N. LaSalle St.; 1-312-822-0100
Although Fulton's can please everyone—with seafood, steaks and sushi on the menu—this beautiful riverside restaurant has possibly the best oysters in the country. Carefully matched wines round out the river view restaurant's offerings. *Inexpensive*

GENE & GEORGETTI

500 N. Franklin; 1-312-527-3718
Thoroughly lacking in pretension, this classic steakhouse offers ungarished steaks served by waiters who appear to have worked there since its inception. This is authentic Chicago—expect to hear thick accents and perhaps catch sight of a local alderman. *Expensive*

GINO'S EAST OF CHICAGO

633 N. Wells; 1-312-943-1124
162 E. Superior St.; 1-312-266-3337
Considered a top 10 pizzeria in the nation, Gino's East provides the most authentic Chicago-pizza—a style that places the sauce on top, with ingredients and cheese underneath. Gino's slices weigh in at nearly 1/2 pound, so order your size carefully. *Inexpensive*

GIOCO

1312 S. Wabash Ave.; 1-312-939-3870
A big-portioned, contemporary Italian feast in a Prohibition-era speakeasy. In line with a trattoria, the menu offers tortellini, beef and octopus carpaccios, pizza, veal scaloppini, rabbit, mussels, and seafood. Conveniently close to McCormick Place and downtown hotels. *Moderate*

GRILLROOM CHOPHOUSE AND WINE BAR

33 W. Monroe; 1-312-960-0000
The specialty at this Loop/Theater District steakhouse is Wet-aged Certi-

fied Angus Beef, offered along with pasta, lamb and seafood. Location and the flexibility of the service make this restaurant a good choice for a pre-theater dinner or drink. *Expensive*

THE GRILL ON THE ALLEY

909 N. Michigan; 1-312-255-9009
The Westin Hotel's rendition of the famous Beverly Hills Grill on the Alley serves large steaks, prime rib and seafood in a clubby leather-bound atmosphere decorated with hundreds of pieces of art. A pianist plays nightly in the lounge. *Expensive*

GREEN ZEBRA

1460 W. Chicago Ave.; 1-312-243-7100
Vegetarians rarely have much choice when it comes to fine dining but Green Zebra has turned the tables, offering upscale vegetarian dishes in a fine dining setting. For non-vegetarians, chicken and fish are often on the menu. *Expensive*

HACKNEY'S PRINTERS ROW

733 S. Dearborn; 1-312-461-1116
This pub is located in one of the oldest buildings in the south Loop Printers Row, a neighborhood as famous and historic as the Hackneyburger. Try the popular deep-fried onion loaf with one of Hackney's many imported tap beers. *Inexpensive*

HEAT

1507 N. Sedgwick; 1-312-397-9818
The ultimate in fresh sushi and sashimi cut to order, sometimes from live fish swimming in the three salt-water tanks. *Expensive*

HEAVEN ON SEVEN ON RUSH

600 N. Michigan; 1-312-280-7774
Spicy Cajun and Creole dishes served in a stimulating room steps from Michigan Avenue, up a steep escalator. "Feed me" fixed price menus, dependent on the chef's whims, provide an unforgettable experience. Sunday features a New Orleans-style brunch. *Moderate*

HOUSE OF BLUES

329 N. Dearborn St.; 1-312-923-2000
At the House of Blues, even the restaurant hosts a blues stage seven nights a week. A great selection of Cajun food is a perfect fit with the hot and spicy décor. Make reservations for the unforgettable Sunday Gospel Brunch. *Expensive*

IL MUNO NEW YORK

1150 N. Dearborn St.; 1-312-440-8888
Creamy, garlicky dishes from Italy's Abruzzo region served in the beautiful rooms of the former Biggs Gold Coast mansion. The menu is priced well above other Italian eateries, but many diners swear Il Muno is the best they've experienced. *Very Expensive*

Continued on next page



Continued from previous page

JAPONAIS

600 W. Chicago Ave.; 1-312-822-9600
Combining industrial and chic decor in a converted industrial building, Japonais offers traditional Japanese sushi, smoked duck and, to finish, the Tokyo Tower—a huge helping of ice cream, sorbets and cookies. *Expensive*

JOE'S SEAFOOD, PRIME STEAK AND STONE CRAB

60 E. Grand; 1-312-379-5637
This Miami offshoot serves Florida stone crab claws with mustard sauce and steaks in a dining room decorated with vintage black and white photographs. *Expensive*

KEVIN

9 W. Hubbard; 1-312-595-0055
Kevin delivers an excellent fusion of Asian and French cuisine in a contemporary dining room with Asian influences such as Shoji screens, brick walls and hardwood floors. Located behind Nordstrom, approximately four blocks west of Michigan Avenue. *Expensive*

LANDMARK

1633 N. Halsted St.; 1-312-587-1600
Though Steppenwolf and Royal George patrons meet in the blue dining room to partake in contemporary American fare, the theater crowd isn't the mainstay of Landmark. The main bar features a mezzanine level catwalk and the downstairs houses a Moroccan style lounge. *Expensive*

LE BOUCHON

1958 N. Damen; 1-773-862-6600
Small, authentic French bistro located in the fashionable Bucktown neighborhood. *Moderate*

LE COLONIAL

937 N. Rush; 1-312-255-0088
Located in the heart of Chicago's Rush Street nightlife district, this French-Vietnamese masterpiece looks back in time to colonial Vietnam. Sugar cane wrapped shrimp, sea bass and filet mignon grace this sophisticated menu. *Expensive*

LE LAN

749 N. Clark St.; 1-312-280-9100
With Vietnamese spring rolls, foie gras flan, smoked squab, Vietnamese sea bass and poached lobster, this restaurant invokes thoughts of when French colonists first discovered their fare complements the Asian flavors of Vietnam like hand in glove. *Moderate*

LES NOMADES

222 E. Ontario; 1-312-649-9010
Flawless French food served in a downtown mansion with a picturesque entrance is so entrancing, it is occasionally used as the setting for movie scenes. *Very Expensive*

MARCHE

833 W. Randolph; 1-312-226-8399
Over-the-top décor makes this French restaurant a popular "see and be seen"

spot. Be prepared for loud techno music. *Expensive*

MAY STREET MARKET

1132 W. Grand Ave.; 1-312-421-5547
True farmer's market ingredients are used for the seasonal American dishes at May Street Market, a very earthy restaurant with stone walls, marble floors and copper bar. *Expensive*

MCCORMICK & SCHMICK'S

41 E. Chestnut St.; 1-312-397-9500
1 E. Wacker Dr.; 1-312-923-7226
This West Coast import is all about fish, offering what is probably the entire day's available catch in Chicago, along with token red meat items. Oysters are the house specialty. The dining rooms are clubby with dark wood paneling and dim lighting. *Moderate/Expensive*

MEIJI

623 W. Randolph St.; 1-312-887-9999
Try the tempura appetizer made with vegetables from the Japanese mountains or haru maki with three types of fish, crab and avocado. Patrons and chefs socialize in the sushi bar at this restaurant named for the Japanese Meiji period. *Moderate*

MEZTISO LATIN BISTRO & WINE BAR

710 N. Wells St.; 1-312-274-9500
This restaurant, with its 100-foot-long bar Spanish and Mexican heritage, focuses on. Try starting with the Spanish tapas, then move to the Mexican appetizers such as stuffed jalapeños and finish with a Mexican entrée such as carne asada. *Moderate*

MIZU YAKITORI AND SUSHI LOUNGE

315-317 W. North Ave.; 1-312-951-8880
Yakitori is similar to the Thai concept of satay (skewered meats), only smaller. Mizu offers small skewers of grilled meats, seafood or vegetables and a multitude of dipping options including soy sauces, hot mustard, pepper, salt and spices. *Moderate*

MORTON'S, THE STEAKHOUSE

1050 N. State St.; 1-312-266-4820
Located in the center of Chicago's nightlife area, this king of steakhouses is famous for its steak and lobster. *Expensive*

MK, THE RESTAURANT

868 N. Franklin; 1-312-482-9179
Creative contemporary dishes superbly offset by this stylish restaurant. Exposed bricks and beams reflect the building's past as a paint factory. *Expensive*

MON AMI GABI

2300 N. Lincoln Park West; 1-773-348-8886
Across the lobby from Ambria, Mon Ami is the less formal, more raucous French Bistro. Steak is served seven ways piled high with Mon Ami's delicious frites. The rolling wine cart with

wines by glass is both clever and convenient. *Moderate*

MOTO

945 W. Fulton Market Ave.; 1-312-491-0058
Tasting menus of seven or 10 very small courses are offered. Moto leans toward raw food, which, by chef Homaro Cantu's definition, is food that never sees temperatures above 108 degrees. Each course is presented with some inventive twist. *Very Expensive*

NAHA

500 N. Clark; 1-312-321-6242
This bright, minimalist restaurant is making a hit with its Mediterranean-influenced American offerings. *Expensive*

NICK'S FISHMARKET

51 S. Clark St.; 1-312-621-0200
This Loop favorite has fruit reductions and Asian accents to complement the exceptional seafood and fish. The service is outstanding. *Expensive*

NINE

440 W. Randolph St.; 1-312-575-9900
A good place to watch for celebrities and professional athletes, Nine also has one of the most remarked-upon decors in Chicago. There's a champagne and caviar bar serving beluga by the ounce. The upstairs Ghost bar serves a must-try specialty martini. *Expensive*

NOMI

800 N. Michigan; 1-312-239-4030
The most noteworthy design element in this minimalist French restaurant is the phenomenal view of North Michigan Avenue and Lake Michigan. *Very Expensive*

NORTH POND CAFÉ

2610 N. Cannon; 1-773-477-5845
Seasonal Midwestern and French dishes are served in a well executed arts-and-crafts-style restaurant. A former skaters' warming station, this popular restaurant is situated in the heart of Lincoln Park on a pristine lagoon and has a city skyline view. *Expensive*

ONE SIXTYBLUE

160 N. Loomis; 1-312-850-0303
Sophisticated contemporary cuisine served to a sophisticated clientele in a setting to match. *Expensive*

OPERA

1301 S. Wabash Ave.; 1-312-461-0161
"Hip-hop Asian" with clean flavors and dramatic presentations sum up Opera, where interesting sauces and thoughtful presentations make for a unique experience. The building formerly warehoused film reels, which left small, romantic niches cleverly filled with tables. *Expensive*

OSTERIA VIA STATO

620 N. State St.; 1-312-642-8450
Get the feeling of dining in Italy with

waiters swooping in with course after course. Select a main course from a chalkboard menu and let the kitchen decide the rest. Seconds are available on everything but entrées. *Expensive*

THE PALM

323 E. Wacker; 1-312-616-1000
Mammoth prime steaks, lobsters and drinks grace the tables at this popular steakhouse. The Palm's personality comes from having walls that are covered with portraits of patrons—the famous as well as the unknown—and cartoons. *Expensive*

PARK GRILL

11 N. Michigan Ave.; 1-312-521-7275
Chicago's answer to New York's Tavern on the Green and located in the heart of magnificent Millennium Park, Park Grill features floor-to-ceiling windows for a great view. The unpretentious menu includes a double-cut pork chop with port sauce. *Expensive*

PARLOR

1745 W. North Ave.; 1-773-782-9000
Upscale comfort food has been done before, but at Parlor the baked-potato soup, macaroni and cheese and meatloaf are somehow simultaneously traditional and trendy. The restaurant has a mostly American wine selection and offers Sunday brunch. *Moderate*

PENANG

2201 S. Wentworth; 1-312-326-6888
Top-notch Malaysian cuisine served in a simple, cheerful room. *Inexpensive/Moderate*

PETTERINO'S

150 N. Dearborn; 1-312-422-0150
Located in the southeast corner of the new Goodman Theatre building, Petterino's specializes in quality pre-theater steaks, chops, pastas and salads. The room and the food are both substantial at this comfortable, recognizable 1940s Loop-style restaurant. *Expensive*

PIZZERIA UNO AND PIZZERIA DUE

Pizzeria Due: 619 N. Wabash Ave.; 1-312-943-2400
Pizzeria Uno: 29 E. Ohio St.; 1-312-321-1000

Sixty years of Chicago pizza experience culminates in one great pizza tradition split between two downtown mansions, across the street from each other at the intersection of Ohio and Wabash. Chicagoans and tourists agree the pizza is worth the wait. *Inexpensive*

QUARTINO

626 N. State St.; 1-312-698-5000
The Italian small plate experience is the focus of Quartino, an old world-style Italian restaurant a couple blocks west of Michigan Avenue. In addition to the featured cured meats and cheeses, Quartino is also well known as a wine bar. *Inexpensive*

RHAPSODY

65 E. Adams; 1-312-786-9911
Conveniently tucked inside Symphony Center with an outside entrance on Adams Street, Rhapsody boasts a conservatory-style dining room accentuated with towering plants and filled with lovers of food, wine and the arts. *Expensive*

RITZ-CARLTON DINING ROOM

160 E. Pearson; 1-312-266-1000
Contemporary French masterpieces served in a comfortable elegant room. *Very Expensive*

RL RESTAURANT RALPH LAUREN

115 E. Chicago; 1-312-475-1100
In a restaurant consistent with Ralph Lauren's American-style clothing and home accessories, the menu is upscale American with Italian accents. The beef is from cattle carefully bred on the actual Lauren ranch. Do not miss the memorable desserts. *Expensive*

ROSEBUD

1500 W. Taylor; 1-312-942-1117
A memorable Italian meal served in a comfortable, upscale setting. *Moderate*

ROSEBUD STEAKHOUSE

192 E. Walton; 1-312-397-1000
Located behind the Drake hotel, Rosebud has won the hearts of Chicago steak enthusiasts including Mayor Daley and other local politicians. Excellent Italian preparations of chicken, lamb and seafood are also available. *Expensive*

ROY'S CHICAGO

720 N. State; 1-312-787-7599
Combining French and Asian cooking techniques, Hawaiian fusion cuisine includes hibachi-grilled salmon, blackened tuna and barbecued baby back ribs. The bar and a special section of the dining room offer a view of the exhibition kitchen. *Expensive*

RUMBA

351 W. Hubbard St.; 1-312-222-1226
This upscale Latin fusion restaurant offers a taste of Cuba, Puerto Rico and South American cuisine in a room reminiscent of the Tropicana nightclub. Thursday thru Sunday, late night guests can tango to live Latin music and occasionally see professional dance performances. *Expensive*

RUSSIAN TEA TIME

77 E. Adams; 1-312-360-0000
Not just a tea house as the name suggests, Russian Tea Time is a full-service restaurant run by natives of the former Soviet Republic of Uzbekistan. *Expensive*

SAL & CARVAO

739 N. Clark St.; 1-312-932-1100
At this popular River North destination offers waiters walk the room with skewers of roasted meats—filet mignon, lamb, beef ribs—to slice and

serve tableside after your feast at one of Chicago's largest salad bars. *Moderate*

SALTAUS

1350 W. Randolph St.; 1-312-455-1919
While the fact that it's housed in a former corned beef factory may be this restaurant's most fascinating detail, its menu is also appealing and interesting. Plenty of international influence is apparent on the American cuisine menu. *Expensive*

SCHWA

1466 N. Ashland Ave.; 1-773-252-1466
On the eight- and a ten-course tasting menus, ingredients are listed with no description of how they will be presented. Note that Schwa is BYOB and deserving of carefully selected wines not to be found in the nearby package store. *Very Expensive*

SEASONS RESTAURANT

120 E. Delaware; 1-312-649-2349
Seven stories above North Michigan Avenue, this restaurant in the Four Seasons Hotel positions its tables far enough apart to create intimacy usually not found in the city. Various tasting menus and wine selections accompany the a la carte menu. *Very Expensive*

SHANGHAI TERRACE

108 E. Superior St.; 1-312-573-6744
The Peninsula Hotel's Asian restaurant sparkles with silver and red lacquer. The fried rice tastes just like the Hong Kong version, and more ambitious offerings such as wok-fried lobster and Cantonese-style steamed fish also are on the menu. *Expensive*

SHAW'S CRAB HOUSE

21 E. Hubbard; 1-312-527-2722
Many of the Atlantic, Gulf and Pacific coast seafood suppliers who stock this restaurant daily are pictured on the walls of the Blue Crab Lounge, a New Orleans-themed oyster bar with old blues and torch recordings on the sound system. *Expensive*

SMITH & WOLLENSKY

318 N. State; 1-312-670-9900
Scattered among the Americana art decorating the walls is a fair assortment of sports-related collectables. Serving extremely large steaks, this New York import offers an excellent view of the Chicago River, Wacker Drive office towers and State Street Bridge. *Expensive*

SPIAGGIA

980 N. Michigan; 1-312-280-2750
Sophisticated Italian creations are appropriate for this breathtaking room, filled with those desiring to see and be seen. This is an extremely popular destination with white tablecloths, large windows and first-class service. *Very Expensive*

STARFISH

804 W. Randolph St.; 1-312-997-2433
The sushi and maki choices are as endless as the "oohs" and "aahs" that accompany them. Vibrant green walls and red-orange ceiling are a perfect contrast to the dark floors and dim lighting. Urban music matches the crowd. *Expensive*

SUSHISAMBA RIO

504 N. Wells St.; 1-312-595-2300
A New York transplant, SushiSamba Rio is trendy and flashy with. The beef maki roll is a must-try, and braised rabbit with chipotle mole is the answer to the question of how to fuse Japanese and South American flavors. *Expensive*

TAMARIND

614 S. Wabash Ave.; 1-312-379-0970
Chinese, Japanese, Thai and Vietnamese dishes grace the menu at this ambitious South Loop restaurant, where sushi, rolls and sashimi selections—as well as personalized stir-fry—are local favorites. *Inexpensive*

TASTE OF SIAM

600 S. Dearborn; 1-312-939-1179
Located in a converted warehouse in the Printers Row neighborhood, this is the spot for Thai cuisine in the south Loop. The menu is extensive, the food exotic but not too challenging, and the crowd is young and urban. *Inexpensive*

TIMO

464 N. Halsted St.; 1-312-226-4300
Timo's eclectic dining rooms with their array of colors and textures are interesting and romantic. Appetizers and side dishes on the Italian menu offer complex flavors to accentuate the restaurant's seafood and spit-roasted rabbit, lamb, chicken and pork. *Moderate*

TOPOLOBAMPO

445 N. Clark; 1-312-661-1434
Complex Mexican flavors abound in the upscale restaurant adjacent to its sister, Frontera Grill. *Expensive*

TRATTORIA NO. 10

10 N. Dearborn; 1-312-984-1718
This subterranean fixture in the Loop has it all. Pin lights add drama to a quiet dining room divided into intimate spaces by pillars and Italian-style archways. Chicagoans visit Trattoria No. 10 for the amazing pastas, risottos and ravioli dishes. *Expensive*

TRU

676 N. St. Clair; 1-312-202-0001
Considered one of the top restaurants in the city, Tru juxtaposes its flashy, contemporary dishes against a stunning white dining room. This exciting, trendy experience is one block off Michigan Avenue. *Very Expensive*

TSUKI

1441 W. Fullerton Ave.; 1-773-883-8722
Plan for a weekend night at Tsuki to catch the exotic specials flown in from Japan such as horse mackerel served in three sashimi styles—regular sashimi, thick-cut and chopped with red miso. The weeknight offerings are less exciting, but yellow tail cheek still graces the menu. This Lincoln Park sushi gem is a 15-minute taxi ride from downtown. *Inexpensive*

TUSCANY

1014 W. Taylor; 1-312-829-1990
Fashionable Northern Italian restaurant suitably situated on Taylor Street. *Expensive*

VERMILION

10 W. Hubbard St.; 1-312-527-4060
Veering far from the traditional path, Vermilion presents a Latin-Indian fusion menu that, however unusual in combination, surprisingly works well in most cases. The tapas-style menu includes roasted baby eggplants, fried plantain dumplings and various curries. *Expensive*

VIAND BAR AND KITCHEN

155 E. Ontario St.; 1-312-255-8505
Better suited to lunch than dinner, Viand is just one block off Michigan Avenue and offers a large selection of salads, main dishes and some very interesting sandwiches, such as the pastrami cured salmon and avocado and olive tapenade. *Expensive*

WAVE

644 N. Lake Shore Dr.; 1-312-255-4460
This Mediterranean restaurant specializing in seafood is appropriately situated on Lake Shore Drive. Sleek lines and vibrant colors contribute to Wave's ultimate chicness. *Expensive*

VIVO

838 W. Randolph; 1-312-733-3379
This chic restaurant offers creative Italian fare. *Expensive*

X/O

3441 N. Halsted St.; 1-773-348-9696
This trendy Lakeview restaurant is best described as global, with its Korean sweet potatoes, Vietnamese duck leg and pumpkin dumplings. An unusual offering, the 25-year-old cognac flight, is very popular. Plan on a 10-minute taxi ride. *Moderate*

ZEALOUS

419 W. Superior; 1-312-475-9112
Zealous boasts a two story glassed-in wine tower that can hold 6,000 wine bottles and a kitchen brilliantly combines different foods, textures and flavors. The multiple-course degustation menus are highly recommended. *Expensive*



Medical Meetings

November 2006 – April 2007

OCTOBER 29–NOVEMBER 4

Institute of Electrical and Electronics Engineers (IEEE), Nuclear Science Symposium and Medical Imaging Conference, Town and Country Resort & Convention Center, San Diego

• www.nss-mic.org/2006

NOVEMBER 5–9

American Society for Therapeutic Radiology and Oncology (ASTRO), 48th Annual Meeting, Pennsylvania Convention Center, Philadelphia • www.astro.org

NOVEMBER 11–13

International Society for Magnetic Resonance in Medicine (ISMRM), Data Processing for MR Spectroscopy and Imaging Workshop, Airlie Foundation & Conference Center, Warrenton, Va. • www.ismrm.org/workshops/data06/index.htm

NOVEMBER 13–15

The International Atomic Energy Agency, International Conference on Quality Assurance and New Techniques in Radiation Medicine, Vienna, Austria • www.iaea.org

NOVEMBER 15–18

Royal Australian and New Zealand College of Radiologists (RANZCR), Radiation Oncology 2006, Singapore • www.ranzcr.edu.au

NOVEMBER 26–DECEMBER 1

RSNA 2006, 92nd Scientific Assembly and Annual Meeting, McCormick Place, Chicago • rsna2006.rsna.org

DECEMBER 20–21

Egyptian Society of Women's Imaging & Health Care (ESWIH), Second Annual Meeting, New Kasr el Einy Teaching Hospital and Four Seasons Hotel Garden City, Cairo, Egypt • www.womensimaging.8m.com

JANUARY 4–7, 2007

Indian Radiological & Imaging Association (IRIA), 60th Annual Congress, Renaissance Hotel & Convention Center Powai Lake, Mumbai, India • www.iria2007.com

JANUARY 18–20, 2007

(ASTRO)/American Head and Neck Society (AHNS)/American Society of Clinical Oncology (ASCO), Multidisciplinary Head and Neck Cancer Symposium, Westin Mission Hills, Palm Springs, Calif. • www.astro.org

JANUARY 31–FEBRUARY 4, 2007

Sociedad Mexicana de Radiología e Imagen (SMRI), 41st Annual Radiology and Imaging Course, Hotel Sheraton Centro Histórico, Mexico City • www.smri.org.mx

FEBRUARY 11–15, 2007

ISMRM, MR Physics & Techniques for Clinicians Workshop, Fairmont Chateau Lake Louise, Alberta, Canada • www.ismrm.org/workshops/MRPhysics/index.htm

FEBRUARY 25–28, 2007

ISMRM, Non-Cartesian MR Imaging Workshop, Enchantment Resort, Sedona, Ariz. • www.ismrm.org/workshops/Non_Cartesian_MRI/index.htm

FEBRUARY 25–MARCH 1, 2007

Healthcare Information and Management Systems Society (HIMSS), Annual Conference and Exhibition, Ernest N. Morial Convention Center, New Orleans • www.himss07.org

FEBRUARY 26–28, 2007

RSNA Highlights: Clinical Issues for 2007, J.W. Marriott Desert Ridge Resort & Spa, Phoenix • RSNA.org/highlightsconference

MARCH 1–6, 2007

Society of Interventional Radiology (SIR), 32nd Annual Scientific Meeting, Seattle • www.sirmeeting.org

MARCH 9–13, 2007

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

MARCH 15–18, 2007

American Institute of Ultrasound in Medicine (AIUM), Annual Convention, Marriott Marquis, New York • www.aium.org

MARCH 25–28, 2007

ISMRM, Advances in High Field MR Workshop, Asilomar Conference Center, Pacific Grove, Calif. • www.ismrm.org/workshops/HighField/venue.htm

APRIL 5–7, 2007

ISMRM/Turkish Society of Magnetic Resonance (TSMR), International Cardiovascular MR Imaging Symposium, Maritim Pine Beach Resort, Antalya, Turkey • www.ismrm.org/workshops/turkey07.htm

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