October 2009 ▪ Volume 19, Number 10

RSNA News

RSNA 2009 Meeting Preview and Restaurant Guide

Also Inside:

- 3D Mouse that Helps Radiologists "Feel" Images is Among Technological Promises
- PET Technique Could Aid in Targeted Breast Cancer Treatment
- MR Imaging Accurately Depicts Deep Endometriosis
- Radiology Architects Forecast the Facility of the Future

Final Advance Registration for RSNA 2009
November 6

October 2009

RSNA News

RSNA News
October 2009 • Volume 19, Number 10

Published monthly by the Radiological Society of North America, Inc., 820 Jorie Blvd., Oak Brook, IL 60523-2251. Printed in the USA.

POSTMASTER: Send address correction "changes" to: *RSNA News*, 820 Jorie Blvd., Oak Brook, IL 60523-2251.

Nonmember subscription rate is $20 per year; $10 of active members' dues is allocated to a subscription of *RSNA News*.

Letters to the Editor
E-mail: *rsnanews@rsna.org*
Fax: 1-630-571-7837
RSNA News
820 Jorie Blvd.
Oak Brook, IL 60523

Subscriptions
Phone: 1-888-600-0064
1-630-590-7770
E-mail: *subscribe@rsna.org*

Reprints and Permissions
Phone: 1-630-571-7831
Fax: 1-630-590-7724
E-mail: *permissions@rsna.org*

RSNA Membership
1-877-RSNA-MEM

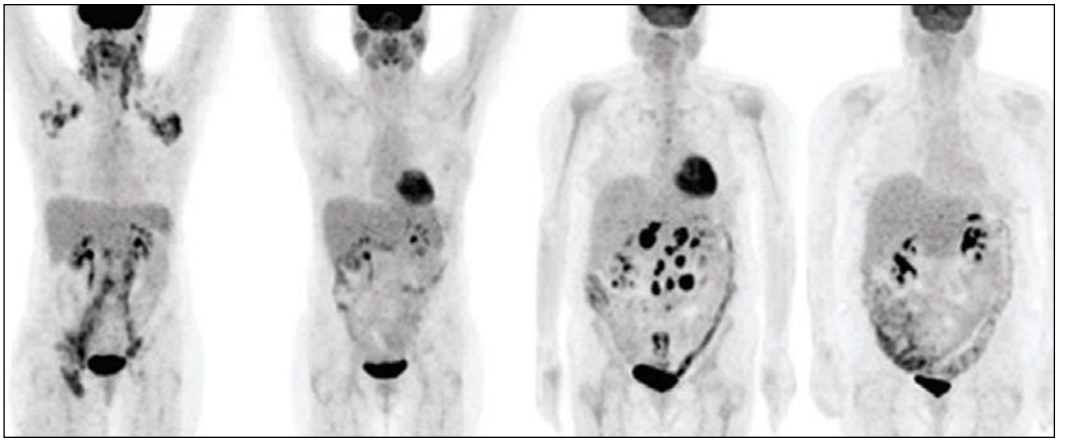
RSNA Named Among Top Innovators

RSNA has been named one of five Innovators of 2009 by *Association Meetings.* The magazine singled out association professionals, who, "even during this difficult economy, were able to look at their meetings with fresh eyes and find new ways to drive attendance, create a better educational environment and use the latest technologies to deliver a better experience for attendees and exhibitors at their conferences." RSNA Technical Exhibit Services Director Tom Shimala accepted the honor on behalf of RSNA.

The magazine touted RSNA's successful efforts to evenly distribute attendee traffic so that vendor booths received maximum exposure, as well as the addition of Bistro RSNA, which provides a convenient, high-quality dining option in each exhibit hall.

Read the full profile at *meetingsnet.com/tradeshows/am_innovators_080109.*

PET Series Named SNM Image of the Year



A PET image series illustrating nuclear medicine therapy response in patients with non-Hodgkin lymphoma has been named SNM's Image of the Year.

The series is two sets of before-and-after scans from two patients treated for non-Hodgkin lymphoma. One patient received iodine-131 tositumomab (Bexxar®); the other received yttrium-90 ibritumomab tiuxetan (Zevalin®). The PET images reveal that both patients showed no metabolically active non-Hodgkin lymphoma three months after treatment.

"This image is really remarkable because it shows two positive benefits of molecular imaging and nuclear medicine at the same time," said Henry N. Wagner Jr., SNM past-president and professor at The Johns Hopkins University Bloomberg School of Public Health in Baltimore, who annually selects the SNM Image of the Year from thousands presented at the society's annual meeting. "First, the PET scans demonstrate the power of radioimmunotherapy to fight advanced cases of non-Hodgkin lymphoma," said Wagner. "In addition, this is proof of how PET scans are indispensable tools for managing patient care and determining whether treatments are working as intended."

For more information, visit *snm.org.*

Restart of Canadian Reactor Planned for Early 2010

Shut down since late May due to a water leak, the National Research Universal (NRU) reactor at the Atomic Energy of Canada Limited (AECL) Chalk River Laboratory in Ontario is expected to restart in early 2010.

The NRU reactor provides half of the U.S. supply of the molybendum-99 radioisotope (Mo-99). About 80 percent of the 16 million nuclear medicine procedures performed annually in the U.S. use technetium-99m, made from the decay of Mo-99. AECL has signed a protocol agreement with the Canadian Nuclear Safety Commission to execute safe repairs and restart the reactor.

The shuttering of the 52-year-old reactor has compounded the global radioisotope shortage that could impede nuclear medicine procedures (see "Medical Isotope Shortage Threatens Patient Care," *RSNA News,* June 2009). Meanwhile, the High Flux Reactor in Petten, Netherlands, which unexpectedly shut down briefly in August, is scheduled for another planned maintenance shutdown in early 2010.

AECL continues to post status reports on NRU's repair. "The duration of the shutdown continues to be founded on the best evidence available, including the most up-to-date analysis of the heavy water leak site, vessel condition, repair strategies and critical path requirements for restart after an extended shutdown," according to a recent statement. Updates can be found at *nrucanada.ca.*

Image Gently Campaign Extends to Interventional Radiology

THE Alliance for Radiation Safety in Pediatric Imaging has launched the next phase of the Image Gently Campaign—*Step Lightly:* Safety in Pediatric Interventional Radiology. *Step Lightly* resources are designed to help providers use the lowest dose necessary to perform interventional procedures on children and maintain the quality of patient care.

The Image Gently Web site, *imagegently.org*, has been updated with new content supporting the *Step Lightly* message. Materials include:

- Downloadable presentation for use by providers to teach their staff methods to reduce dose and maintain quality. Radiologists are encouraged to give this talk locally.
- Downloadable checklist of dose reduction steps the team can review for each patient.
- Downloadable outline of steps the department can take to reduce dose and maintain quality.
- Patient brochure including answers for parents about interventional radiology procedures. Providers can use this as a guide to communicate with parents about their concerns and the benefits of interventional procedures to patients.

The Alliance for Radiation Safety in Pediatric Imaging also announces the new Alliance Organization Online Workroom, available at *imagegently.org.* The site is password-protected and the password is nora. Every Alliance communication and educational product created for the Image Gently campaign, including new resources produced for the *Step Lightly* launch, can be downloaded directly from this online workroom.

The Alliance for Radiation Safety in Pediatric Imaging launched the Image Gently campaign in January 2008. The alliance now includes 45 organizations representing more than 400,000 healthcare providers worldwide.

CMS Proposes to Cover FDG-PET for Cervical Cancer Staging

Following requests by organizations including the American College of Radiology (ACR) and SNM, the Centers for Medicare and Medicaid Services (CMS) has proposed to cover a single fluorodeoxyglucose (FDG) PET exam for staging biopsy-proven cervical cancer.

"CMS proposes that the evidence is adequate to determine that the results of FDG-PET imaging for cervical cancer staging of beneficiaries diagnosed with cervical cancer are used by the treating physician to make meaningful changes in therapeutic management and improve health outcomes, and thus are reasonable and necessary," according to the proposal.

FDG-PET would be covered when the beneficiary's physician decides the study is needed to determine the location and/or extent of the tumor in order to determine appropriateness for an invasive diagnostic or therapeutic procedure, to determine the optimal anatomic location for an invasive procedure or to determine the anatomic extent of the tumor when the recommended treatment depends on tumor extent.

For more information, visit *cms.hhs.gov.*

CORRECTION

An incorrect post-treatment image of a "Nonresponder" was inadvertently provided by the University of California, Los Angeles (UCLA), to appear with the article, "PET/CT Predicts Early Response to Chemotherapy," and was published on the cover and Page 7 of the September 2009 issue of *RSNA News.* The correct image, provided by UCLA, appears here.

IN MEMORIAM

Peggy J. Fritzsche, M.D.

2003 RSNA President **Peggy J. Fritzsche, M.D.,** a champion of radiologic innovation and patient care improvement, died Sept. 25 at her home in Redlands, Calif. She was 68.

Since 1986 Dr. Fritzsche had served as a professor of radiology at Loma Linda University in Loma Linda, Calif. From 1991 to 2004 she was medical director of Riverside MRI Center in Riverside, Calif., where she established her reputation as a private practice pioneer with a prototype office design that made mid-field open MR imaging available at the same location as high-field MR imaging.

Dr. Fritzsche served on numerous RSNA committees, including one to organize RSNA's 1995 Roentgen celebration. Joining the RSNA Board of Directors that year, Dr. Fritzsche advocated expanding the Society's public communication efforts. Dr. Fritzsche helped launch the RSNA-American College of Radiology public information Web site RadiologyInfo™ and chaired the committee responsible for RSNA's three-year radiology exhibit at Disney's Epcot Technology and Science Center.


Peggy J. Fritzsche, M.D.

Dr. Fritzsche received the RSNA gold medal last year.

Communication, particularly with patients, remained Dr. Fritzsche's focus when she became RSNA's second female president. "While I thought that the quality and accuracy of the diagnosis was important to patients—and it is—what is more tangible to patients is convenience, comfort and the availability of the doctor to talk to them," Dr. Fritzsche said in an RSNA interview last year.

Dr. Fritzsche was also known for learning to fly an acrobatic plane. It was a feat that friends said spoke of her constant urge to learn something new—a spirit that helped shape her successful radiology career.

"There is always a cutting-edge aspect to radiology and I'm not afraid of change," said Dr. Fritzsche. "It's a very dynamic and exciting field."

Vietti Recognized by Cambridge Who's Who

Teresa J. Vietti, M.D., a professor emeritus in the Department of Pediatrics and Radiology at Washington University School of Medicine in St. Louis, has been recognized by Cambridge Who's Who for demonstrating dedication, leadership and excellence in pediatric oncology research. Dr. Vietti has more than five decades of experience in research and treatment of childhood cancers.

Boyden Honored by Washoe County

Fredric M. Boyden, M.D., has received the Washoe County Medical Society's 2009 C.H. Woods Award, bestowed annually to a physician who "has the magic touch" when it comes to caring for patients, according to the society.

Dr. Boyden practiced radiology for 32 years at Washoe Medical Center (now Renown Regional Medical Center) in Reno, Nevada, and since 2001 has been on staff at the Veterans Affairs Medical Center, in Reno. Dr. Boyden performed the first catheter arteriogram in 1967 in northern Nevada.

Smith Joins Fairview Red Wing Medical Center

Hugh Smith, M.D., has been named medical director of the Department of Radiology at Fairview Red Wing Medical Center in Minnesota. Dr. Smith, who recently completed his residency in radiology at the University of Nebraska Medical Center in Omaha, replaces **William Wells, M.D.,** who is retiring after 33 years in the position.


Hugh Smith, M.D.

Former Human Genome Project Leader is New NIH Director

Noted for his landmark discoveries of disease genes and his leadership of the Human Genome Project, physician-geneticist **Francis S. Collins, M.D., Ph.D.,** is the 16th director of the National Institutes of Health (NIH).

Dr. Collins was nominated to lead NIH by President Barack Obama and unanimously confirmed by the U.S. Senate. Dr. Collins served as director of NIH's National Human Genome Research Institute 1993–2008. The international project culminated in April 2003 with the completion of a finished sequence of the human DNA instruction book.

Prior to his work at NIH, Dr. Collins spent nine years on the faculty of the University of Michigan, where he was a Howard Hughes Medical Institute investigator. He is an elected member of the Institute of Medicine and the National Academy of Sciences.

In 2007, Dr. Collins was awarded the Presidential Medal of Freedom and authored the best-selling book, "The Language of God: A Scientist Presents Evidence for Belief." Dr. Collins delivered the RSNA 2003 New Horizons Lecture, "A Roadmap for the Future of Biomedical Research."


Francis S. Collins, M.D., Ph.D.

Magazine Names McClennan among Most Influential

RSNA News Editor **Bruce L. McClennan, M.D.,** has been named one of the 25 Most Influential in Radiology by *RT Image*, a national radiology magazine for radiologists, technologists and administrators. Dr. McClennan, who received gold medals from the American Roentgen Ray Society and the Society of Uroradiology in 2009, is a professor of diagnostic radiology at Yale University School of Medicine and an attending radiologist at Yale New Haven Hospital.

Bruce L. McClennan, M.D.

Thomas Receives SNM Loevinger-Berman Award

Stephen R. Thomas, Ph.D., developer of the widely used conjugate-view method for planar imaging quantification, received the Loevinger-Berman Award at the SNM Annual Meeting in Toronto. Dr. Thomas completed his postdoctoral fellowship at the University of Cincinnati, where he became a professor of radiology in 1987 and director of the Division of Medical Physics in 1991. He is former chair of SNM's Medical Internal Radiation Dose Committee and a former AAPM liaison on RSNA's Scientific Program Committee. He served as a member of the RSNA Research & Education Foundation Board of Trustees from 2000 to 2006.

Stephen R. Thomas, Ph.D.

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

MY TURN

RSNA's Impact Felt on a Global Scale

As many international radiologists prepare to travel to Chicago for RSNA 2009, I reflect on how, as chair of RSNA's Committee on International Relations & Education (CIRE) since 2006, I've had the privilege of welcoming talented young radiologists from all over the world who come to the U.S. to participate in RSNA's various educational programs. Most notable among these programs are the Introduction to Research for International Young Academics and the Derek Harwood-Nash International Fellowship. Over and over again, the committee receives reports from our graduates recounting how RSNA programs have been instrumental in launching their academic careers.

One particularly heartwarming story involves a Derek Harwood-Nash fellow from Nigeria who came here in fall 2007. Early on, committee members discovered that her hospital needed an ultrasound unit dedicated to pediatric imaging. We helped her prepare an application to the Global Ultrasound Equipment Donation Foundation and in spring 2009, the ultrasound was awarded and sited.

George A. Taylor, M.D.

In addition to opportunities for advanced training and education at various North American medical centers, radiologists from emerging nations also benefit from the CIRE-sponsored International Visiting Professor (IVP) program. Since 1986, radiology educators from the U.S. and other developed nations have lectured at national and regional meetings in countries where there is a great demand for current information on imaging technologies and best practice. It is difficult to tell who derives more from the experience—the visitors or the hosts.

CIRE-supported initiatives have made a difference in the lives of many international radiologists by providing access to resources not readily available in their home countries. I have been especially privileged to play a role in developing these opportunities for international exchange. RSNA members are fortunate to practice an exciting and rewarding specialty and to be able to make such a positive difference to the international community.

George A. Taylor, M.D., is radiologist-in-chief at Children's Hospital Boston and the John A. Kirkpatrick Professor of Radiology at Harvard Medical School. In addition to chairing the RSNA Committee on International Relations & Education, Dr. Taylor is a manuscript reviewer for Radiology.

My Turn
ONE RADIOLOGIST'S VIEW

RSNA Residents and Fellows

You can bank on this money saving graduated dues offer

Year 1: $100
Year 2: $200
Year 3: full dues

Get all the benefits of full membership at a fraction of the cost

Benefits include:

- Subscriptions to *Radiology, RadioGraphics* and *RSNA News*
- Free admission to the annual meeting*, the world's largest international medical meeting
- Networking opportunities with 42,000 colleagues worldwide
- Access to My RSNA®, your personal Web site on *RSNA.org*
- Free tools to help with the MOC process, including CME and SAMs
- Discounts on RSNA educational materials
- Free résumé posting and job searching on Career Connection *(RSNA.org/career)*
- Access to the online Membership Directory

*with advance registration

Take advantage of graduated dues as you transition from training into full RSNA membership

RSNA®

For more information call 1-877-RSNA-MEM (1-877-776-2636) or e-mail *membership@rsna.org*.

RSNA.org

MR Imaging Accurately Depicts Deep Endometriosis

PREOPERATIVE MR imaging may help radiologists diagnose deep endometriosis and more precisely characterize extent of disease, thereby aiding in treatment planning, according to a study published in *Radiology* online in July 2009 and in the October 2009 print edition.

Assessing the disease by physical examination alone is difficult, according to lead author Nathalie Hottat, M.D.

Nathalie Hottat, M.D.
Université Libre de Bruxelles' Erasme Hospital

Neal C. Dalrymple, M.D.
South Texas Radiology Group

Marco A. Amendola, M.D.
Innovative Cancer Institute

"3T pelvic MR imaging in the preoperative staging of endometriosis is a feasible routine technique that has significant correlation with histologic results and therefore has a positive impact on the management of patients," said Dr. Hottat, of the Department of Radiology at Université Libre de Bruxelles' Erasme Hospital in Brussels, Belgium. "This examination can orient the type of surgery—endoscopy versus laparotomy—and provide a roadmap to the surgeon in patients suffering from endometriosis."

More than 5 million American women suffer from endometriosis, a chronic and painful disease that results when endometrium grows outside of the uterus and attaches to other organs such as the ovaries, fallopian tubes, bowels and bladder, according to the U.S. Department of Health and Human Services.

"Endometriosis is present in 10 percent of women of childbearing age and in 25 to 35 percent of women with infertility," said Dr. Hottat. "Deep endometriosis is a more severe form of endometriosis because it can extend to pelvic organs—including 6 to 30 percent of the cases of endometriosis of the colon—and the bladder."

> *3T pelvic MR imaging in the preoperative staging of endometriosis is a feasible routine technique that has significant correlation with histologic results and therefore has a positive impact on the management of patients.*
>
> Nathalie Hottat, M.D.

While superficial endometriosis can be treated with lasers during laparoscopy, deep endometriosis sometimes requires complete surgical excision of the lesions. Although some drugs can stabilize the disease, the only curative treatment is surgery, said Dr. Hottat.

The difference in intervention/treatment methods makes it imperative for the surgeon to evaluate the extent of the disease before planning surgery.

Study Shows High Sensitivity, Specificity

Between March 2007 and August 2008, researchers studied 41 women ages 20 to 46 with suspected endometriosis. MR imaging was performed on all patients prior to surgery.

Results showed that MR imaging accurately diagnosed 26 of 27 cases of deep endometriosis and that images accurately depicted specific locations of deep endometrial lesions.

The study found that 3T MR imaging demonstrated 96.3 percent sensitivity and 100 percent specificity for diagnosing deep endometriosis. It also showed that the colon wall was involved in 32 percent of the patients with deep endometriosis and MR imaging was effective in distinguishing different layers of the affected portion and accurately showed the degree of colon wall invasion.

Further Research Needed

Although research showed that MR imaging can accurately diagnose disease with minimal discomfort to patients, Dr. Hottat pointed out that the small sample size could be a limitation.

Dr. Hottat noted the mean time of 60 days between MR imaging examination and surgery as a potential

Preoperative MR imaging may help radiologists diagnose deep endometriosis and more precisely characterize extent of disease, according to a new study in *Radiology*.
Axial high-spatial-resolution turbo spin-echo T2-weighted flow-compensated T2-weighted MR images (repetition time, respiratory period; echo time, 135 msec) in a 21-year-old woman. There is deep endometriosis infiltrating the right ulterosacral ligaments *(short arrow),* pelvic muscle and colon wall *(long arrow).* Image shows circumferential rectosigmoid stenosis due to deep endometriosis *(x)* visualized after administration of intrarectal ultrasonographic gel (* = rectosigmoid lumen filled with gel). The different sublayers can be distinguished *(arrowhead = mucosa, short straight arrow = submucosa, curved arrow = muscularis, long straight arrow = serosa).* At MR imaging and pathologic examination, the colon wall infiltration was graded as involving the mucosa.
Radiology 2009;253:126–134

limitation. "However, since deep endometriosis is a chronic disease, we don't expect this delay to dramatically bias our results," she said.

Although Neal C. Dalrymple, M.D., a radiologist at South Texas Radiology Group in San Antonio, said the study made him optimistic about better diagnosis of deep endometriosis, he agreed more research is required.

"The surgeons in the study were aware of the depth of the disease because they reviewed the MR findings before they went into surgery," said Dr. Dalrymple, a member of the genitourinary radiology subcommittee of the RSNA Scientific Program Committee and author of the book, "Problem Solving in Abdominal Imaging."

"I don't know how feasible it is, but I'd like to see a future study where surgeons not currently using MR for preoperative planning were given MR results after performing the initial surgical exploration but before the procedure was over. That might provide more insight into the value added by MR," he said.

MR Imaging Could Aid Up-Front Diagnosis

Marco A. Amendola, M.D., director of medical imaging at the Innovative Cancer Institute in Miami, and also a member of the genitourinary radiology subcommittee of the RSNA Scientific Program Committee, concurred with Dr. Dalrymple that preoperative diagnosis of deep endometriosis is challenging and has so far been more successful in academic centers than in community practice.

"Knowledge of the precise distribution and extension of endometriosis is essential for the surgeon," said Dr. Amendola. "Excision of deep endometriosis is technically very demanding and is associated with high surgical risk including the need for colostomy."

Because deep endometriosis is underdiagnosed, Dr. Dalrymple said he is hopeful that MR imaging will allow earlier more definitive diagnosis.

"We don't really know how many women have deep endometriosis," he said. "In my experience, we usually go searching for deep endometriosis in women who fail treatment for surface disease. MR imaging has the potential to let us diagnose deep endometriosis up front."

Additionally, preoperative MR imaging could help reduce anxiety in patients and physicians by eliminating some of the variables, Dr. Dalrymple added.

"I think it gives both the surgeon and the patient more confidence to go into a procedure with a plan, aware of the extent of disease preoperatively rather than discovering it during surgery."

Learn More

■ The study, "Endometriosis: Contribution of 3.0-T Pelvic MR Imaging in Preoperative Assessment—Initial Results," published in *Radiology* online on July 7, is available at *Radiology.RSNA.org/content/253/1/126.*

More about the study is also available in the *Radiology* in Public Focus column on Page 37.

Genitourinary Session at RSNA 2009

THE REFRESHER COURSE, "Genitourinary Emergencies: Case-based Approach, An Interactive Session (RC607)," will be presented on Thursday, Dec. 3, by Syed Zafar H. Jafri, M.D., Courtney A. Woodfield, M.D., and Deborah A. Baumgarten, M.D., M.P.H. Learning objectives include recognizing pathology in pregnant and non-pregnant women, reviewing acute adnexa features that direct management and developing an imaging approach, including MR.

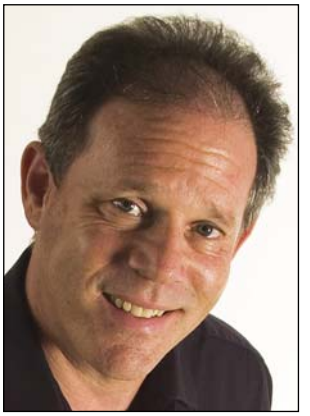
RSNA 2009 Quality Counts

Registration for these and all RSNA 2009 courses is under way at *RSNA2009.RSNA.org.*

Radiology Architects Forecast the Facility of the Future

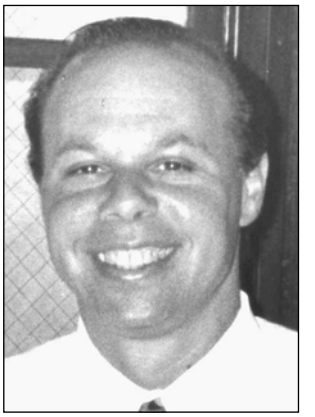
THE EVER-EVOLVING world of healthcare virtually guarantees the radiology facility of tomorrow will look very different from the structures of today, according to noted radiology architects.

"I like to call this the chess board approach to design," said Bill Rostenberg, A.I.A., a principal and director of research at San Francisco-based Anshen + Allen who designs radiology spaces in hospitals and freestanding medical buildings. "You always need to be looking five, six or seven steps ahead."



Bill Rostenberg, A.I.A.
Anshen + Allen

Steven C. Horii, M.D.
University of Pennsylvania Medical Center



William N. Bernstein, A.I.A.
Architecture for Radiology

Rostenberg will moderate the multisession course, "Architecture That Makes a Difference: Design Guidelines for Tomorrow's Imaging Environment," on Monday, Nov. 30, at RSNA 2009.

Changes in practice, technology, referrals and revenue streams have driven the evolution of radiology architecture, said Rostenberg, who has a long history of working with radiologists as the liaison between the American Institute of Architects (AIA) and RSNA's Associated Sciences Consortium.

"There is a convergence of surgical and medical imaging with less invasive procedures that rely more on image guidance," he said. "The physical environment must anticipate this and future collaboration."

> *There is a convergence of surgical and medical imaging with less invasive procedures that rely more on image guidance. The physical environment must anticipate this and future collaboration.*
>
> **Bill Rostenberg, A.I.A.**

Although the integrated interventional platform may stimulate competition among surgeons, cardiologists and radiologists, Rostenberg said he feels there is value to greater collaboration.

For example, some catheterization labs and angiography suites are now located adjacent to or within surgical suites. In fact, Rostenberg foresees that the operating room of the future will look a lot like a cardiac catheterization lab.

"We're already seeing greater need for control rooms and additional electronic equipment rooms in surgical suites," he said. "Currently electronics equipment racks are often placed within operating rooms where they should not be located. We need to change tradition and build new surgical rooms with adjacent control rooms and electronics rooms, or at least provide the space to build them in the future."

Changes in Technology, Work Patterns, Demand Reading Room Changes

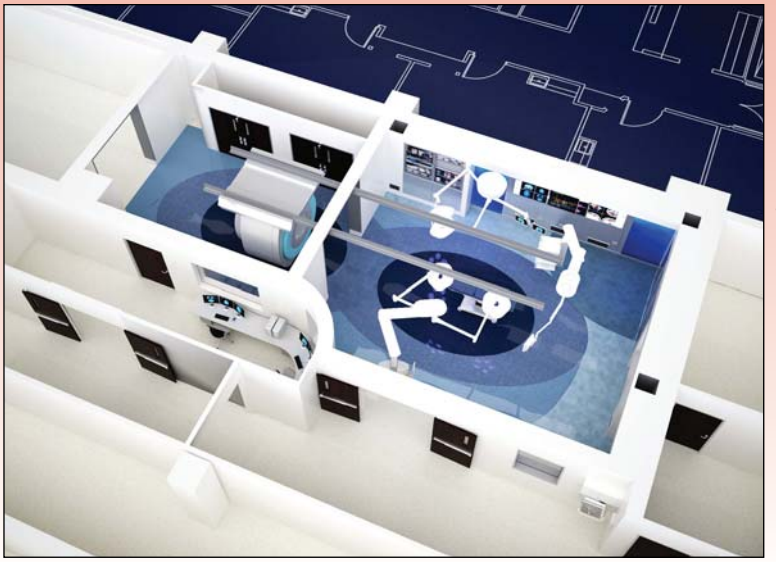
Steven C. Horii, M.D., one of the presenters for the multisession course at RSNA 2009, agrees there must be a hand-in-hand relationship between radiology and architects. "It is extremely important to work with a radiology architect and facilities management personnel when redesigning or building new spaces," said Dr. Horii.

Dr. Horii, a professor of radiology at the University of Pennsylvania Medical Center in Philadelphia, said his facility recently underwent a reading room renovation and that he and his colleagues are still working to create configurations that accommodate as many users as possible.

All radiologists are affected by the design of the reading room and its impact on diagnostic speed, accuracy and overall work performance, Rostenberg said.

Changing technology requires that radiology architects work to enhance reading room ergonomics, said Dr. Horii. In the past, radiologists handling film distributed work over large groups. They also took breaks in the day as they searched for films. With PACS, images are read as they come in and there is little opportunity for breaks.

Radiologists must work with archi-



Intraoperative MR Imaging
Perhaps the most complex example of surgical and imaging convergence, intraoperative MR imaging (I-MRI) provides image guidance during surgery. I-MRI facility design requires a unique understanding of MR imaging safety criteria as well as surgical protocol for clinical workflow. In this example, the magnet is mounted on a track that allows the I-MRI to move from the diagnostic area into the operating room and then back into the diagnostic suite for surgery to continue.
Image courtesy of ANSHEN+ALLEN

tects and vendors to improve lighting and workflow and reduce noise, said Dr. Horii, who will discuss the topic in depth at RSNA 2009. He and Rostenberg will also discuss regulatory issues impacting radiology architecture.

Design Shifts from Radiology-Centric Areas

Overall facility design is another area ripe for optimization, said Dr. Horii. "We need to get away from radiology-centric areas," he said. "When a doctor has to wander around the hospital for 10 minutes searching for a consulting radiologist, that's too time-consuming."

Location makes a difference when it comes to patients as well. Despite all the advancements that have come with PACS, patients must still go to the equipment, which can be time-consuming. If a CT scanner is 300 feet from an elevator, it takes longer for the patient to get to and from the scanner and on and off the table than it does to take an image.

Such considerations are particularly key in this age of healthcare reform, Dr. Horii said, as the utilization of equipment must increase dramatically. "Hospital administrators and the government seeking a 90 percent utilization rate on a million-dollar piece of imaging equipment should know that it is going to be very difficult with inefficient room turnover," he said.

That is one reason architects strive to bring equipment design in sync with the design process, said William N. Bernstein, A.I.A., a principal with the New York-based firm Architecture for Radiology, whose members regularly attend RSNA annual meetings.

"Clients often delay the final equipment selection until the very end of the process in order to keep options open and, in some cases, reduce costs," said Bernstein. "That creates an issue on the design end when final equipment specs are needed sooner. One way of dealing with this is designing 'universal rooms' that allow physicians greater flexibility and more time to make their final equipment selection."

Bernstein said radiology architects ensure that the infrastructure supports the equipment and that architects who are trained to understand the needs of radiology learn to ask, "When the equipment needs to be replaced in the future, what is the exit path?"

Dr. Horii said that exit path is sometimes forgotten until it's too late. "When an MR is built in the center of a facility, how are you going to get the giant magnets out when it's time to upgrade?" he asked.

He cited one hospital that initially broke into the side of a building to bring the magnet inside. Years later, another building went up next door. When it was time to upgrade the MR, the magnet had to be broken apart in order to remove it, which was very costly.

Value of Radiology Architecture Not Fully Understood

"Many radiology professionals don't have a good sense of what architects do," said Bernstein. "There is a huge value in what a properly trained radiology architect can do in terms of framework design, construction, getting equipment in place, the aesthetics of the project and ultimately, the success of the business."

"We put a great deal of emphasis on what the space feels like for the patient, staff and faculty," said Rostenberg. "That is extremely important."

Architecture at RSNA 2009

The multisession course, "Architecture That Makes a Difference: Design Guidelines for Tomorrow's Imaging Environment," will be held on Monday, Nov. 30, at RSNA 2009.

RSNA 2009 Quality Counts

Registration for this and all RSNA 2009 courses is under way at *RSNA2009.RSNA.org.*

3D Mouse to Help Radiologists "Feel" Images is Among Technological Promises

RADIOLOGISTS could one day have access to technology that allows them to analyze images and "feel" the resulting organs with a 3D mouse.

Although the 3D mouse is still in the research and development stage, other new technologies are available now, including one that allows radiologists to connect to an iPAD interface to make image annotations stored in a searchable repository.

"iPAD: A Tool for Creating Semantic Annotations in Radiology Images," is among the scientific papers scheduled for presentation at RSNA 2009. Also featured will be, "Imaging Suite Workflow Orchestration Dashboard" and "Medical iPhone Applications: A Systematic Review of Present Applications and a Look at Future Directions with a Focus on Radiology."

Such devices have different applications, but all share one common denominator—they are designed to help radiologists do their jobs better, faster and more efficiently.

"Feeling" Virtual Organs Could Aid in Cancer Diagnosis

The software tools that utilize a 3D mouse allowing researchers to analyze and "feel" virtual organs to determine their size were developed by a research team headed by Erik Vidholm, Ph.D., who said the technology could lead to easier diagnosis and treatment plans for patients with cancer. Called haptics, the technique interfaces with the user via the sense of touch through force, vibrations and/or motion.

Dr. Vidholm worked on the project as a doctoral candidate at the Center for Image Analysis at Uppsala University in Sweden.

"We started the project in order to find out if a 3D device had the potential to reduce the amount of time radiologists and physicians spend manually contouring organs in medical image datasets," he said. "We have developed a number of semi-automatic tools for contouring where 3D interaction with haptics is a central part.

"One example is deformable model segmentation, by which we use surface meshes that can adapt to image data," Dr. Vidholm continued. "By using the device, the user can push and pull the surface in 3D in order to guide it during the adaptation process."

iPAD provides a way for radiologists to more efficiently and more completely describe the lesions they see in images.
Daniel Rubin, M.D.

The device is designed as a stylus that the user holds and manipulates like a regular pen. Forces are generated to the user from a number of fast step-motors in the device.

"We calculate the forces based on a combination of how the user moves the stylus and the characteristics of the medical image data at the stylus position," Dr. Vidholm said. "This way we can, for instance, simulate hard and soft tissue."

No longer involved in the project, Dr. Vidholm said research and development continues on the device, which he hopes to see on the market in about five years.

Daniel Rubin, M.D., M.S.
Stanford University

Krishna Juluru, M.D.
Cornell University

iPAD Helps Physicians "Describe" Lesions

The iPAD tool was designed to overcome a significant problem in imaging—medically important content such as anatomy, radiology findings and quantitative features, are not recorded in a way that machines can easily access this information.

"iPAD provides a way for radiologists to more efficiently and more completely describe the lesions they see in images," said creator Daniel Rubin, M.D., M.S., an assistant professor in the Department of Radiology at Stanford University, who will outline the advantages of this technology at RSNA 2009.

iPAD is a plug-in to the popular OsiriX image viewing workstation and implements the annotation and image markup (AIM) standard of the National Cancer Institute's Cancer Biomedical Informatics Grid (caBIG®) project.

Using iPAD, a radiologist can draw an annotation indicating a lesion on an image. Behind the scenes, iPAD records this information in the AIM format, which can then be stored in a database or serialized to DICOM-SR, making it more widely available to fellow radiologists.

Erik Vidholm, Ph.D., headed the research team that developed software tools that utilize the 3D mouse that allows researchers to analyze and "feel" virtual organs to determine their size—a technology called haptics. *(right)* Dr. Vidholm works with the haptic pen at the specially constructed work station that can show stereographics.

Photo Credit: Kristin Norell

Adaptation of a computer model to an image of a liver. With the aid of the adapted model it is possible to measure the volume of the liver, for instance, or calculate changes in shape and migrations.

Images courtesy of Uppsala University.

"This allows us to perform functions like retrieving all images of lesions with particular characteristics," Dr. Rubin said. "There is a close relationship between structured reporting and what iPAD is capable of doing. iPAD essentially provides a reporting template for radiologists to fill out to describe the characteristics of the abnormalities they see in images."

iPhone Study Reveals Breadth, Utility and Price of Applications

The iPhone study to be presented at RSNA 2009 examined the benefits to radiologists of certain iPhone applications geared toward the medical community, including viewing applications to help provide timely consultations and increase response time to referring clinicians

The impetus for the study came from several RSNA annual meeting presentations in recent years that demonstrated novel iPhone technologies for medicine. Krishna Juluru, M.D., and colleagues at Weill Medical College of Cornell University in New York and the University of Pennsylvania School of Medicine in Philadelphia decided to examine the full breadth of medical applications available, including the average cost.

His group split the medical applications category into seven subcategories: viewing applications, communications, business, education, clinical utility, medical reference and non-radiology.

Researchers found 303 applications in the medical applications category, four of which were not included in the study because they were in foreign languages. Another 135 that researchers deemed to not have much relevance to radiology were placed in the last subcategory.

The study revealed many useful applications in the other six subcategories, including some that would be valuable to both physicians in private practice and those working in an academic setting. Applications of highest interest were those enabling viewing of radiographic datasets.

"The viewing applications would be very useful to both groups," said Dr. Juluru. "If you're a private practitioner running a small group, clinicians may call you for quick consults at times you do not have direct access to your PACS workstation. These iPhone viewing applications can help provide timely consultations and increase response time to referring clinicians."

Applications in the medical reference subcategory were the most expensive, averaging $41 per application. The next highest average was the business category at $20.50, which included such applications as a coding and billing guide. Clinical utility applications, such as a drug guide, were the least expensive, at an average of $2.37.

Researchers discovered that iPhone applications are not only about viewing imaging data, but they can also provide decision support, increase operational efficiency, promote patient safety and improve productivity.

The next step is to learn the limitations for these medical applications, Dr. Juluru said.

"Do they provide the level of diagnostic detail for accurate interpretation, or should they really be used for a general review to provide a preliminary read or confirm a finding, before a final read?" he asked. "That's a study that's just waiting to happen."

Technology at RSNA 2009

OTHER technology-related scientific papers to be presented at RSNA 2009 include:

- "Update on the National Cancer Institute's National Biomedical Imaging Archive and Cancer Biomedical Informatics Grid (caBIG®) project and the Cancer Genome Atlas Project."
- "Automated Image-based Classification of Imaging Modality."
- "Improving Efficiency and Effectiveness of Radiology Administration by Utilizing Business Intelligence Visualization Tools: Getting on the Same Page with MGH Imaging."

RSNA 2009 Quality Counts

Learn More

- For more information on iPAD, go to *bimm.stanford.edu/main/ipad.* Users who meet installation prerequisites can download iPAD at the site.
- For more information on Dr. Vidholm's haptics research at the Center for Image Analysis at Uppsala University in Sweden, go to *www.cb.uu.se/research/haptics.*

PET Technique Could Aid in Targeted Breast Cancer Treatment

NEW RESEARCH showing that PET scans in mice can be used to detect and monitor a protein often associated with aggressive breast cancer could facilitate the development of new, targeted therapies for breast, ovarian, prostate and lung cancers.

In a study published in the July issue of the *Journal of Nuclear Medicine*, researchers at the National Institutes of Health (NIH) used PET and a specially developed radioactive compound (fluorine-18) attached to an Affibody® molecule to image human epidermal growth factor receptor type 2 (HER2), a well-established tumor biomarker that is overexpressed in a wide variety of carcinomas. Affibody molecules are small and robust high affinity protein molecules that can be engineered to bind specifically to a large number of target proteins.

While HER2 expression is currently measured in biopsy specimens, senior author Jacek Capala, Ph.D., of the National Cancer Institute's Center for Cancer Research, said the NIH research indicates that PET can provide rapid, reproducible and noninvasive in vivo assessment of the receptor expression.

"Our work shows that PET imaging using Affibody molecules was sufficiently sensitive to detect a two- to threefold decrease in HER2 expression," said Dr. Capala. "Therefore, PET imaging may provide a considerable advantage over other current methods. Our technique would allow a better selection of patients for HER2-targeted therapies and also early detection of tumors that either do not respond to or acquire resistance to these therapies."

Jacek Capala, Ph.D.
National Cancer Institute's Center for Cancer Research

Gary J. Whitman, M.D.
University of Texas M.D. Anderson Cancer Center

Our approach using PET for in vivo assessment of HER2 expression may aid diagnosis of breast cancer and improve the outcome of HER2-targeted therapies.
Jacek Capala, Ph.D.

The breakthrough lies not only in the ability of the technique to detect HER2 expression, but also to monitor the patient's immediate response to therapeutic interventions, allowing the physician to adjust the dose and treatment schedule based on the actual status of HER2 receptors, said Dr. Capala.

Although stressing that the NIH research needs further validation in mice and in human trials, Gary J. Whitman, M.D., a professor in the Department of Diagnostic Radiology at the University of Texas M.D. Anderson Cancer Center in Houston, said the study represents an advance in the role of imaging in targeting receptors. "This research moves us more toward thinking in terms of pathways, receptors and quantitative analysis rather than just assessing morphology," said Dr. Whitman, a member of the *RSNA News* Editorial Board.

PET Detects HER2 Expression

In the NIH study, researchers injected mice with human breast cancer cells varying in their level of HER2 expression. After three to five weeks, when tumors had formed, the mice were injected with the Affibody molecule and PET images were recorded. The levels of HER2 expression as determined by PET were consistent with the levels measured in surgically removed samples of the same tumors using established laboratory techniques, Dr. Capala said.

To gauge possible changes in HER2 expression in response to treatment, the team injected the Affibody molecule into mice with tumors that expressed high or very high levels of HER2 and then treated them with the drug 17-DMAG, a type of heat shock

protein 90 (Hsp90) inhibitor that is known to decrease HER2 expression. PET scans were performed before and after 17-DMAG treatment.

Researchers found that HER2 levels were reduced by 71 percent in mice with tumors that expressed very high levels of HER2 and by 33 percent in mice with tumors that expressed high levels of HER2 compared with mice that did not receive 17-DMAG.

"Our approach using PET for in vivo assessment of HER2 expression may aid diagnosis of breast cancer and improve the outcome of HER2-targeted therapies," said Dr. Capala. "Several molecular probes based on antibodies have recently been tested in experimental animal tumor models, but a PET tracer for routine clinical use has not yet been developed."

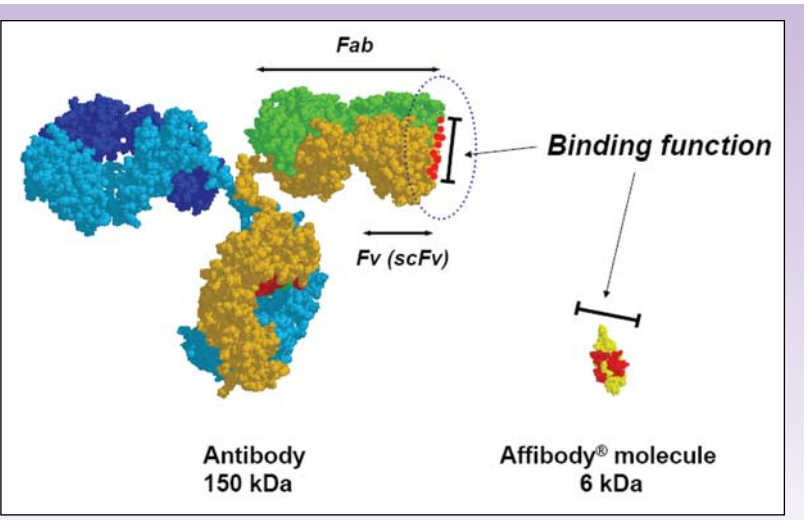


Image courtesy of the National Institutes of Health

Researchers at the National Institutes of Health (NIH) used PET and a specially developed radioactive compound (fluorine-18) attached to an Affibody® molecule to image human epidermal growth factor receptor type 2 (HER2), a well-established tumor biomarker that is overexpressed in a wide variety of carcinomas. *(shown)* Affibody molecules are much smaller than antibodies or antibody fragments, but the size of their binding surfaces is comparable.

Invasive Method Has Drawbacks

Although invasive tissue sampling is currently the gold standard for investigating HER2 tumor levels, the method has a number of obvious drawbacks including restricting analysis to only the sampled cells at a single time, according to Peter M. Smith-Jones, Ph.D., associate attending radiochemist at Memorial Sloan-Kettering Cancer Center in New York and creator of a probe developed to study the pharmacodynamics of the therapeutic 17-AAG, another Hsp90 inhibitor, on HER2.

"This PET technique allows you to scan the whole patient for multiple sites and can be repeated within 24 hours so you can quickly monitor the drug effects on the tumor," said Dr. Smith-Jones.

Along with facilitating the selection of patients for HER2-targeted therapy and providing information on the immediate response to therapeutic intervention, the PET imaging technique would reduce the number of biopsies and cut back on the number of false-negative or false-positive results associated with invasive methods, said Dr. Whitman.

He stresses that the technique's monitoring capability would be especially advantageous in terms of administering the best treatments as early as possible. "Sometimes our ability to monitor response to therapy seems primitive and often not that precise or sensitive," said Dr. Whitman.

"Using conventional response criteria, it can take months until the physician can definitively say that the patient is responding to a drug regime," added Dr. Smith-Jones. "This scan should quickly help find the right drug for the right patient."

PET Research Continues

While using PET and MR imaging with tracers that target receptors is still in the early stages, the technique "will make tremendous progress in the next five to 10 years," said Dr. Whitman, who said it is part of a general trend toward personalized medicine. "Parallel to that, we're discovering various pathways and receptors and there may be more entities such as HER2 that we will discover in the future."

In continuing his research on the technique, Dr. Capala and colleagues are studying whether it can be used to target HER2 and epidermal growth factor receptor for diagnoses and therapy of metastatic lesions in the brain and brain tumors.

Ultimately, he said, "PET may provide a considerable advantage and become an attractive alternative for assessing HER2 expression quantitatively, objectively yet noninvasively, allowing several scans to be performed over the course of therapy."

Learn More

■ An abstract of "Changes in HER2 Expression in Breast Cancer Xenografts after Therapy Can be Quantified Using PET and 18F-Labeled Affibody Molecules," published in the July issue of the *Journal of Nuclear Medicine,* is available at *http://jnm.snmjournals.org/cgi/content/abstract/50/7/1131.*

Molecular Imaging at RSNA 2009

A Molecular Imaging Symposium will be among the multisession courses offered at RSNA 2009. The courses, to be held Wednesday, Dec. 2, include "Molecular Imaging: Overview and the Basics," moderated by Daniel C. Sullivan, M.D., as well as presentations on molecular imaging in oncology, cardiovascular disease and brain disorders.

RSNA 2009 Quality Counts

Registration for these and all other RSNA 2009 courses is under way at *RSNA2009.RSNA.org.*

RSNA 2009 Explores Breakthroughs in Science and Quality

Along with gaining insight into cutting-edge discoveries, evolving techniques and strategies that can translate into better radiology both in the coming years and in current practice, RSNA 2009 attendees will get the latest information on high-profile issues including radiation dose and informatics.

"The issue of reduced radiation dose and decreased contrast administration is very prominent and will be particularly highlighted in the cardiac, pediatric and chest areas," said RSNA Scientific Program Committee Chair Robert M. Quencer, M.D., a professor and chair of radiology at the University of Miami School of Medicine.

Application of 3T MR is demonstrated in a number of gastrointestinal and neuroradiology sessions, Dr. Quencer added. "As has been the trend in recent years, interest remains high in functional neuroimaging, especially with the more widespread use of higher-field magnets, and with trends in CT perfusion and susceptibility-weighted MR imaging.

"Informatics, a topic on everyone's mind, expands every year," continued Dr. Quencer. "We will hear of new endeavors in imaging assessment and applications, see and hear newer molecular imaging schemes and get a glimpse of where this field is headed in the future."

This year the Scientific Program Committee received 10,891 abstracts for consideration. Over the summer, the committee, with its subcommittees, selected 1,750 abstracts as scientific papers and 2,055 for digital presentations.

Breast Imaging

Topics of interest in breast imaging include elastography, tomosynthesis, MR interpretation issues such as the role of BI-RADS 3 and management of small masses, and the ongoing controversy over managing high-risk histology lesions found at core biopsy, said Jennifer A. Harvey, M.D., subcommittee chair.

"Molecular imaging is an emerging field that may provide improved breast cancer detection and specificity, particularly for women at high and moderate risk," said Dr. Harvey.

This year's Breast/Nuclear Medicine/Molecular Imaging Series is a combined effort of the Breast Imaging, Nuclear Medicine and Molecular Imaging Subcommittees. Course topics will include gamma imaging, PET and MR spectroscopy and diffusion-weighted imaging, said Dr. Harvey.

The Breast Series will focus on the impact of screening, the evaluation of breast cancer risk and the acceptance of new technologies, she said. Series topics include incident versus prevalent screening for MR and ultrasound, compliance with recommendations for screening of high-risk women and new techniques such as tomosynthesis—an area of increasing interest.

"As radiologists take a more active role in identifying and managing women at high risk for breast cancer, we will have an increasing role in recommending imaging beyond mammography," Dr. Harvey said. "As new technologies develop, we must consider how effective they are in a particular population and realize that results may not translate to the population at large."

Cardiac Radiology

Cardiac Subcommittee Chair Andre J. Duerinckx, M.D., Ph.D., stressed the strong continuing interest in cardiac CT, with presentations focusing on radiation dose, technique development and optimizing contrast volumes.

"Cardiac subcommittee members identified many great abstracts in two key areas—early population studies about the use of cardiac CT for risk stratification as well as studies to optimize and possibly reduce contrast usage in cardiac CT," said Dr. Duerinckx.

Other sessions will cover the use of cardiac MR and CT in cardiomyopathy, valvular heart disease, plaque imaging, chest pain in emergency departments, myocardial ischemia and RF ablation procedures, Dr. Duerinckx said.

Chest Radiology

Quantitative analysis abstracts in all areas are popular in this year's programs, but especially in chronic obstructive pulmonary disease, said H. Page McAdams, M.D., subcommittee chair. There is a decline in lung cancer screening studies, Dr. McAdams noted, with interest turning instead to thoracic CT dose reduction.

"It is likely that some of the new dose reduction strategies for CT, as well as new quantitative imaging techniques, will significantly affect the current and future practice of chest imaging," said Dr. McAdams. Other hot topics this year include applications for dual-energy imaging in the chest and chest tomosynthesis, he said.

Emergency Radiology

"This year we assembled an integrated special series on various issues related to practice patterns and management of emergency imaging," said Diego B. Nuñez, M.D., emergency radiology subcommittee chair.

The program combines educational courses and scientific papers on imaging utilization, radiation safety and teleradiology. Scientific paper highlights include optimizing scanning times, comparative analysis of various protocols and CT equipment configurations to minimize radiation dose, Dr. Nuñez said. Presentation topics include the use of clinical predictors and the enforcement of appropriateness criteria to drive adequate utilization of resources, he said.

"In addition, scientific sessions will include presentations on whole-body CT protocols in polytrauma," said Dr. Nuñez. "Sessions will also compare imaging modalities for evaluating vascular and abdominal trauma, skull base, facial and cervical trauma and non-traumatic abdominal emergencies."

Gastrointestinal Radiology

As dual-energy CT becomes increasingly available, more research is focusing on the

2009 RSNA Scientific Program Committee
The RSNA Scientific Program Committee met in June at RSNA Headquarters in Oak Brook, Ill.
(front row, from left) David E. Avrin, M.D., Ph.D., Michelle S. Barr, M.D., Milton J. Guiberteau, M.D., Ruth C. Carlos, M.D., M.S., Benjamin M. Yeh, M.D., and Diego B. Nuñez Jr., M.D., M.P.H.
(back row, from left) H. Page McAdams, M.D., James S. Welsh, M.D., M.S., Umar Mahmood, M.D., Ph.D., Erick Marc Remer, M.D., John A. Kaufman, M.D., Robert M. Quencer, M.D., Mauricio Castillo, M.D., Andre J. Duerinckx, M.D., N. Reed Dunnick, M.D., and Jennifer A. Harvey, M.D.
(not pictured) Lane F. Donnelly, M.D., Martin J. Yaffe, Ph.D., and Keith J. Dreyer, D.O., Ph.D.

potential of the technology to improve lesion detection as well as reduce radiation dose, particularly for young patients who require repeat imaging, said subcommittee chair Benjamin Yeh, M.D.

"Also, with the public recognition of the rising incidence of hepatobiliary disease, much attention is being directed at the early diagnosis and monitoring of treatment of focal and diffuse liver disease, including critical appraisal of current imaging protocols and contrast materials," said Dr. Yeh.

Interest in CT colonography remains strong as the screening modality continues to evolve and gain traction as an accepted means of identifying pre-cancerous and early stage colorectal carcinoma, Dr. Yeh continued. There is also a resurgance in researching the radiological evaluation of acute, chronic, and malignant small and large bowel disease, with an emphasis on newer CT and MR imaging technology, he said.

Genitourinary Radiology

Subcommittee Chair Erick Remer, M.D., reported a renewed interest in urinary calculus imaging, with presentations in low-dose scanning, virtual non-contrast CT techniques, new calculus quantification techniques and stone characterization.

"The program also further elucidates how to utilize diffusion-weighted imaging, dynamic contrast enhancement and spectroscopy for MR evaluation of the prostate," said Dr. Remer. "There is also new information emerging in MR imaging of the pelvic floor and MR evaluation of placental abnormalities."

Health Services Policy and Research

Abstracts demonstrate more focus on safety and quality with an increasing number of high-quality papers on cost-effectiveness analysis, said Subcommittee Chair Ruth Carlos, M.D. She noted more outcomes studies in nephrogenic systemic fibrosis and contrast-induced nephropathy, as well as an increase in international submissions. Noteworthy papers focus on the disclosure of harmful errors to patients and areas where errors are likely to occur, she said.

Informatics

Informatics gained a new category this year—Apple iPhone applications in medical imaging—while maintaining an increase in new technologies and issues including image management and analysis, said Keith J. Dreyer, D.O., Ph.D., subcommittee chair.

Notable sessions explore building radiologist consensus, increasing appropriateness of outpatient imaging, a functional MR-compatible hand simulator for stroke recovery monitoring and automated radiation dose extraction from CT reports, said Dr. Dreyer.

Molecular Imaging

As the specialty continues to gain momentum, molecular imaging demonstrates an increasing trend toward clinical applicability, said Umar Mahmood, M.D., subcommittee chair.

"We have a session dedicated to comparison of modalities across a broad spectrum of diseases—for example, comparing arterial wall inflammation seen with dynamic contrast-enhanced MR and fluorodeoxyglucose (FDG) PET, or comparing prostate cancer evaluation with 11C acetate verses 18F FDG PET imaging," Dr. Mahmood said.

Another session focuses exclusively on ultrasound molecular imaging while cell tracking applications have remained popular, he said.

Musculoskeletal Radiology

"T1-weighted imaging with 3T MR imaging continues to show promise for the early detection of meniscal degenerative changes," said Subcommittee Chair Michelle S. Barr, M.D. "This technology can be used to study overuse injuries occurring in everyone from young athletes to weekend warriors, and may serve as an aid in developing standards for early meniscal injury treatment."

Other notable topics include MR monitoring of inflammatory cell inhibition after administration of minocycline in patients with pain caused by nerve damage, MR for evaluat-

Continued on next page

RSNA 2009 Explores Breakthroughs in Science and Quality

Continued from previous page

ing blood flow in damaged nerve roots and outcomes in cartilage implant procedures. In quantitative imaging, dual-energy CT shows promise in evaluating gout by detecting monosodium urate crystals and monitoring their decrease following effective treatments.

"Many papers are addressing the use of CT to identify osteoporosis," Dr. Barr added. "Proposals are suggesting that bone density can be evaluated with dual-energy CT, quantitative CT and a dual technique to evaluate bone density using coronary artery calcium mass scoring software. Another addresses the consequence of long-term osteoporosis treatment with bisphophonates as observed in an atypical fracture pattern occurring in the proximal femur, easily identified once one becomes familiar with this pattern."

Neuroradiology/Head and Neck

Important new studies in functional MR imaging and advanced MR techniques reveal demonstrable white matter and functional differences in the brains of autistic patients and characteristic neurological manifestations in those who stutter, said Mauricio Castillo, M.D., subcommittee chair.

"Advanced imaging techniques also showed differences between smokers and nonsmokers, identifying the regions of the brain targeted by tobacco use," said Dr. Castillo. "Additionally, investigators were able to find and map brain abnormalities in antisocial individuals compared to normal controls," he continued.

Perfusion brain patterns on CT seem to predict prognosis of patients with middle cerebral artery infarctions and difficulty with language generation and susceptibility-weighted brain imaging shows promise in indentifying not only brain infections but their cause as well, Dr. Castillo noted.

In the head and neck, advanced imaging modalities continue to find broader applications, particularly in nodal and thyroid gland diseases.

Nuclear Medicine

Nuclear medicine shows promise in diagnosing both neoplastic and non-neoplastic disease, according to Subcommittee Chair Milton J. Guiberteau, M.D. Evolving new techniques such as angiogenesis-targeted tumor imaging and novel applications of existing methods such as FDG PET/CT for distinguishing acute from chronic aortic dissections are among the highlights, he said.

Neoplasm imaging studies address a wide variety of diagnostic and therapeutic response topics including the use of PET/CT in distinguishing more aggressive breast cancers based on receptor characteristics, detecting occult tumors in patients with pan-neoplastic syndromes, evaluating yttrium-90 selective internal radiation therapy for liver metastases and assessing pulmonary lymphangitic tumor spread, said Dr. Guiberteau.

Other topics include combining single-photon emission CT (SPECT/CT) myocardial perfusion imaging with CT coronary angiography and evaluating SPECT/CT in diverse settings from iodine 131 whole body imaging to nonspecific foot pain, he said.

Also of note, the American College of Surgeons Oncology Group will present initial results of the Cooperative Group Trial of FDG-PET/CT for assessing radiofrequency ablation in Stage 1A non-small cell lung cancer. "The expanding roles of FDG PET/CT quantization—of standard uptake values—in clinical oncology will be a prominent theme in both the scientific program and a follow-up special focus session," Dr. Guiberteau said.

Pediatric Radiology

Attendees can look forward to integrated sessions combining review lectures and scientific presentations in neuroimaging, fetal imaging and chest and cardiac imaging, said Lane F. Donnelly, M.D., subcommittee chair. "There will be other important presentations on CT dose, diffusion tensor imaging for body applications and new applications in pediatric interventional radiology," Dr. Donnelly said. He noted an increasing number of international submissions to the pediatric program.

Physics

Abstracts explore MR for early breast cancer detection, non-contrast arterial spin labeling for assessing kidney perfusion, novel dose reduction techniques in interventional flat detector CT and patient size-corrected index to estimate CT organ dose, said Martin J. Yaffe, Ph.D., subcommittee chair. Dr. Yaffe noted solid overall quality in this year's submissions.

Radiation Oncology/Radiobiology

"Now more than ever, the scientific program is intimately integrated with the expanded Bolstering Oncoradiologic and Oncoradiotherapeutic Skills for Tomorrow (BOOST) program," said Subcommittee Chair James S. Welsh, M.D., M.S., who said the quality of scientific submissions appears to grow stronger each year.

This year's program features a roster of excellent papers and posters dealing with cancers of the breast, head and neck, central nervous system and prostate and gastrointestinal and gynecologic malignancies, Dr. Welsh said. "Interesting scientific papers and posters will be presented in the basic radiobiologic sciences as well," he added.

Vascular and Interventional Radiology

Trends in interventional oncology in both basic science and clinical application will be a focus this year, said John A. Kaufman, M.D., subcommittee chair. "Peripheral arterial intervention remains strong, indicating the continued important role of interventional radiology in peripheral arterial disease," said Dr. Kaufman. "New procedures continue to emerge and increase in number and breadth." Other hot topics will include aortic endografts and embolization therapy, Dr. Kaufman noted.

Focus on Improving Quality, Advancing Imaging

Each of the subspecialties is highly focused on implementing and measuring quality improvement initiatives, Dr. Quencer noted.

"These are but a minor portion of a wide variety of papers in all of the planned sessions for RSNA 2009 but this preview does point out some of the trends we expect to see and hear—and all are actively involved in advancing the science of medical imaging," he said.

Raise Your Quality Quotient at RSNA 2009

The diverse roster of technical and educational offerings at RSNA 2009 gives attendees an unparalleled opportunity to maintain the professional edge needed to provide the highest quality of care.

Get More Now: Look for this icon to find more information online. To use course or session numbers, access the online program by going to *RSNA2009.RSNA.org* and click Meeting Program in the left-hand column. Search the program by clicking Search at the top of the page and then entering the course or session number in the Code box.

Get More Now:
Web address or course or session number

Technical Exhibition Spans Three Halls

With more than 600 exhibitors, the RSNA 2009 Technical Exhibition will span three exhibit halls—Hall A in the South Building, Hall B in the North Building and Hall D in the Lakeside Center. Each hall offers a uniform experience, with dining options and a mix of small, medium and large exhibitors.

Get More Now:
RSNA.org/showcase

Anchor exhibitors, with very large booths, in each hall are:

Hall A, Level 3, South Building

- Bayer Healthcare Pharmaceuticals
- Bracco
- FujiFilm Medical Systems
- GE Healthcare
- Hitachi Medical
- Shimadzu Medical Systems
- Toshiba America Medical Systems

Hall B, Level 3, North Building

- Agfa Healthcare
- Canon, Inc
- McKesson Provider Technologies
- Philips

Hall D, Level 3, Lakeside Center

- Carestream Health
- Hologic, Inc
- Siemens Healthcare
- TeraRecon

For more information about the Technical Exhibition, see Page 30.

Laptop Users Can View Digital Presentations in Real Time

RSNA 2009 attendees are encouraged to bring laptops and handheld devices to enable a richer learning environment in courses utilizing the RSNA digital presentation system.

After logging into the system, registered course attendees can view the live presentation and submit questions to presenters in real time. With myRSNA® at *RSNA.org*, users can bookmark the presentation—complete with their own notes—to review later from any location. myRSNA also allows attendees to participate in live chats about course materials with presenters and other attendees.

The interactive functionality of the digital presentation system made its debut in an RSNA 2008 refresher course. This year the system is utilized in RC730: IT Management for Radiologists (Informatics: Advanced), as well as the Esophagus and Stomach, Small Bowel, Colon, Acute Abdomen, Pancreas, Gallbladder and Bile Ducts, and Liver I and Liver II sessions of the Categorical Course in Diagnostic Radiology.

Lakeside Learning Center

The Lakeside Learning Center, home to digital presentations (education exhibits and scientific posters) and informatics demonstrations, will be located in Hall E (Level 2, Lakeside Center) across from the Arie Crown Theater. Lakeside Learning Center content is organized by subspecialty, with signs clearly marking the location of each subspecialty.

The Lakeside Learning Center will also house the *Radiology* and *RadioGraphics* editorial offices, as well as the RSNA Residents Lounge, providing residents and fellows a place to relax and network while enjoying complimentary refreshments. The lounge will be open Sunday through Thursday from 8:00 a.m. to 6:00 p.m.

Eat, Meet and Network at Bistro RSNA

Avoid the hassle of waiting in long lunch lines and vying for a place to eat at Bistro RSNA. Conveniently located within each of the three technical exhibit halls, as well as in the Lakeside Learning Center, Bistro RSNA provides attendees with a place to eat, meet and network. The menu includes several fresh and healthy options, international cuisine and hearty regional favorites. New this year: Dessert is included. Single meal tickets can be purchased or tables of four can be reserved for the whole day or the entire meeting.

Get More Now:
bistrorsna.com/attendee.php

Continued on next page

Raise Your Quality Quotient at RSNA 2009

Continued from previous page

Bistro RSNA Lunchtime Discussion Topic Tables

Special tables at the Lakeside Learning Center Bistro RSNA are reserved as "topic tables" where attendees can participate in discussions in various subspecialties. Topic facilitators are present at Bistro tables Monday through Wednesday, 12:00 – 1:00 p.m. Topics this year are: Monday—cardiac, chest, emergency room, pediatrics, radiation oncology, vascular/interventional; Tuesday—breast, CT dual energy, musculoskeletal, obstetrics/gynecologic; Wednesday—body MR imaging, liver, neuroradiology, nuclear medicine and uroradiology.

Self-assessment Modules

More than 30 ABR-qualified self-assessment modules (SAMs) are offered during RSNA 2009 to assist participants in fulfilling maintenance of certification (MOC) requirements. SAMs are available for portions of the BOOST program, as well as the Digital Mammography Training and Self-Assessment Workshop and a wide variety of refresher courses.

Early Morning Special Focus Sessions

New early special focus sessions—beginning at 7:00 a.m. Monday and Thursday—give you more opportunities to work radiology's hot topics into your course schedule and earn more continuing education credits.

U.K. Presents

Monday, Nov. 30
10:30 a.m. – 12:00 p.m.

The third in RSNA's series highlighting international radiology, this session is offered in conjunction with the Royal College of Radiologists and features the latest in radiology research from the United Kingdom. Among the topics to be covered in the session are emergency radiology, high-resolution CT of the lung and MR fluoroscopy.

Get More Now:
SSC19

Coordinated Physics Tutorials

This year's Saturday RSNA/AAPM physics tutorials feature coordinated topics. First, study the physics of flat-panel fluoroscopy systems in the Physics Tutorial for Residents, 12:00 – 2:00 p.m. Then, attend the Physics Tutorial on Equipment Selection, 2:15 – 4:15 p.m., to learn about current DR flat-panel technology and clinical applications, flat-panel installation and testing and the business case for flat-panel imaging.

Physics Modules Demonstrated at Education Store

At the Education Store in RSNA Services, learn more about Web-based physics teaching modules developed by RSNA and AAPM. Included are modules on radiography, fluoroscopy, mammography, CT, ultrasound, MR imaging, nuclear medicine and radiation biology. The modules, designed to improve basic science education for radiology residents as well as benefit practicing radiologists, will be accessible online after the meeting and are offered free of charge to RSNA and AAPM members.

Cardiac CT Mentored Case Review Offered Twice

Presented in conjunction with the North American Society for Cardiac Imaging, this daylong series of courses assists attendees in satisfying one of the recommendations of the American College of Radiology Practice Guidelines for the Performance and Interpretation of Cardiac CT. Now in its third year, the Cardiac CT Mentored Case Review is offered in four parts on Monday and then repeated on Thursday. Attendees must attend all four parts—all on Monday, all on Thursday or through a combination of the two days—to receive a certificate of completion. An audience-response system is utilized.

Get More Now:
MC21-24, MC51-54

Financial Seminars Offered Saturday and Monday

Two popular financial seminars on effective estate planning and effective investment strategies are presented on Saturday and Monday (for an additional fee). To register, go to *RSNA.org/register* or use the Registration and Housing Form 1 included in the Advance Registration, Housing and Course Enrollment Brochure. Additional fees apply for these seminars so you must be registered for the annual meeting to sign up.

Image Interpretation Session Features New Format

Sunday, Nov. 29, 4:00 – 5:45 p.m.
Arie Crown Theater
Moderator, George S. Bisset III, M.D.

This popular session leads attendees through identifying abnormal imaging findings, constructing differential diagnoses based on those findings and making recommendations for further procedures or treatment. Two panelists in each category—10 panelists in all—receive two cases for review just a couple hours prior to going on stage. New this year is audience participation, with response trans-

ceivers available to about 1,500 spectators who have a chance to vote for the diagnosis before the correct answer is revealed. Each team also includes a department chair or journal editor—an homage to the early days of the Image Interpretation Session when the "masters" took cases "on the fly." Attendance is encouraged as the session will not be Webcast, taped or archived online.

Toward Quantitative Imaging: Reading Room of the Future

Located in the Lakeside Learning Center, the Reading Room of the Future showcases products that integrate quantitative analysis into the image interpretation process. Attendees can learn about these applications through hands-on exhibits featuring informational posters, computer-based demonstrations and "Meet the Experts" presentations scheduled throughout the week. The exhibits are educational in nature and not designed for product promotion.

Mock Jury Trial

This Sunday presentation reconstructs the real-world malpractice case brought by the family of a 55-year-old Chicago man who died of lung cancer about a year after a radiologist recorded a suspicious finding in the man's radiology report but did not verbally communicate the finding to the referring physician.

Leonard Berlin, M.D., who organized and participated in the last RSNA mock trial five years ago, will do so again and serve as the moderator for the case focusing on the "failure to communicate," which is increasingly becoming a major source of lawsuits against radiologists.

The mock trial—the outcome of the real case has already been decided in court—begins at 10:30 a.m. in Room S406B and will continue until the verdict is announced at 1:30 p.m., followed by a discussion of the case and a question and answer session. Audio from the jury deliberation will be piped into Meeting Room S406B during lunch, which the audience is asked to purchase near the meeting room on the Technical Exhibit floor before returning for deliberations. Radiologists, attorneys and a judge portray the trial participants.

Continuing Medical Education (CME) will be offered in three blocks: trial, deliberation and verdict/discussion.

Attendees are strongly encouraged to register for the trial, however, people will be admitted in on a space-available basis.

In addition, the judge and attorneys participating in the trial have offered to answer attendee questions e-mailed in advance of the session. Questions do not have to be about the case featured in the trial. E-mail questions to *mocktrial@rsna.org.*

New Collaboration Between RSNA and the American Academy of Family Physicians

Monday, Nov. 30, 8:30 – 10:00 a.m.

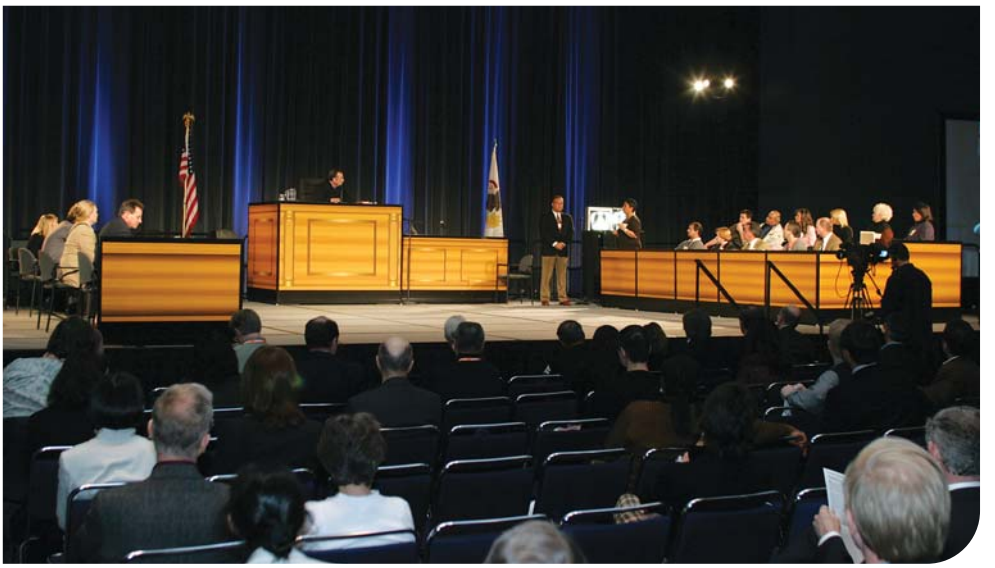
RSNA and the American Academy of Family Physicians have collaborated on a new course to address what radiologists can expect from family physicians and what family physicians need from radiologists as the specialists in medical imaging. Also discussed will be the concept of the "Patient-centered Medical Home" (PCMH) model, improving communications and interactions between the specialties and working more effectively to enhance patient care. The course is sponsored by the RSNA Public Information Committee

Get More Now: *RC216*

RSNA Services Offers One Stop for RSNA Amenities

At RSNA 2009, all RSNA amenities will be consolidated in one location called RSNA Services. Located on Level 3 of the Lakeside Center, RSNA Services will feature:

- Membership
- Education Store
- Career Connection
- RadiologyInfo™
- *RSNA.org,* including myRSNA®
- Journals
- Research & Education Foundation



RSNA 2009 Gold Medalists

RSNA will award three individuals its Gold Medal—RSNA's highest honor—at the 95th Scientific Assembly and Annual Meeting. They are Gary M. Glazer, M.D., of Stanford, Calif.; Brian C. Lentle, M.D., of Victoria, B.C.; and David C. Levin, M.D., of Philadelphia.

Gary M. Glazer, M.D., is at the helm of cancer staging breakthroughs, working to bring radiologists front and center in the professional and public consciousness.

"Through his dedication to bringing radiology into the molecular age, his vision and personal charm, Dr. Glazer has reawakened the sleeping giant of Stanford radiology," said 2009 RSNA President Gary J. Becker, M.D.


Gary M. Glazer, M.D.

"The gold medal means so much to me because radiology has been a large part of my life," said Dr. Glazer. "As a second-generation radiologist, I was immersed in radiology even as a child and, subsequently, studied with some of the most distinguished radiologists of all time."

Dr. Glazer is Emma Pfeiffer Merner Professor in the Medical Sciences and chair of the Department of Radiology at Stanford University School of Medicine in California. Under his direction, the department has flourished as a forum for medical imaging research. Stanford is now home to three major National Institutes of Health (NIH) centers.

A Phi Beta Kappa graduate in cellular biology from the University of Michigan in Ann Arbor, Dr. Glazer received his medical degree in 1976 from Case Western Reserve University Medical School in Cleveland. After residency and fellowship at the University of California, San Francisco, Dr. Glazer returned to Michigan and his alma mater at Ann Arbor, where he advanced to full professorship and became director of the Body Computed Tomography and Magnetic Resonance Imaging divisions.

Dr. Glazer's research placed him at the hub of some of the most significant breakthroughs in CT and MR imaging in the 1980s. His work helped to define normal and pathological anatomy of the pulmonary hilum and mediastinal lymph nodes on cross-sectional images, standards used widely today in radiology and thoracic surgery. His work in CT and MR classification of adrenal and liver tumors resulted in his election, at age 34, to the Society for Body Computed Tomography. He was one of only 30 members in the world at that time.

In recent research, Dr. Glazer has discovered that image-guided tumor insonification can amplify tumor biomarker signals in the blood and identify the biomarker release site.

Dr. Glazer has worked to make radiology more patient-centered and promote the "visible radiologist." At Stanford, he directed development of an architecturally and programmatically patient-centered imaging facility. He has also served as a consultant to the NIH Task Force for the Imaging Sciences and National Institute of Biomedical Imaging and Bioengineering.

Dr. Glazer is past-president and continues to serve on the executive board of the International Society of Strategic Studies in Radiology (ISSSR), which aims to influence capital, investment and healthcare politics for the benefit of radiology.

"It brings me great joy to receive the gold medal," said Dr. Glazer. "I feel that I share this honor with my role models and mentors, as well as colleagues, who have guided me along the way."


Brian C. Lentle, M.D.

Brian C. Lentle, M.D., has dedicated his career to supporting education and promoting radiology on a global scale.

Dr. Lentle, 2004 RSNA president, is a professor emeritus and former head of the Department of Radiology at the University of British Columbia (UBC) in Vancouver.

A Welsh native, Dr. Lentle completed his medical degree at the school now known as the University of Wales College of Medicine. From 1986 to 1991, he served as part-time professor in the Department of Radiology at UBC, as head of the Division of Nuclear Medicine and director of the Division of Nuclear Medicine at Vancouver Hospital and Health Sciences Centre.

Prior to moving to Vancouver, Dr. Lentle was a professor of radiology at the University of Alberta and director of the Department of Nuclear Medicine at Cross Cancer Institute in Edmonton. An RSNA member since 1993, Dr. Lentle is a past-president of the Canadian Association of Radiologists and the Pacific Northwest Radiological Society.

"I had the distinct pleasure of serving three of my eight years on the RSNA Board alongside Dr. Lentle, who graced our meetings with his wisdom and wit, and who reliably demonstrated by example what thoughtful stewardship is all about," said Dr. Becker.

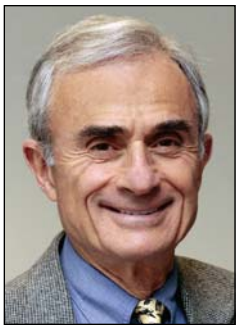
An early proponent of radiation safety, Dr. Lentle served as chair of the Canadian Atomic Energy Control Board Advisory Committee on Radiology Protection when the seminal International Commission on Radiological Protection recommendations on radiation protection were introduced. Dr. Lentle co-wrote/edited *A New Kind of Ray: The Radiological Sciences in Canada,* published for the centennial of the discovery of the X-ray in 1995.

Retired from clinical practice in 2008, Dr. Lentle is currently a radiologist for the Canadian Multicentre Osteoporosis Study and the Steroid-induced Osteoporosis in a Pediatric Population Canadian Incidence Study. He also serves as a reviewer for *Radiology, Journal of Nuclear Medicine, Journal of Clinical Densitometry* and *Journal of the Canadian Association of Radiologists.*

Dr. Lentle said he has immense respect for RSNA and its volunteers, staff and members. "Not least is RSNA's capacity to see the present as a doorway into the future," he said. "RSNA has given me immeasurably more than I might ever contribute. The gold medal is an honor not so much about me as something I am proud to share with my wife and fellow Canadians."

An expert in vascular imaging and interventions, **David C. Levin, M.D.,** is a prolific researcher and devoted protector of radiology.

Dr. Levin is a professor and chair emeritus of the Department of Radiology at Jefferson Medical College and Thomas Jefferson University Hospital in Philadelphia. He has been called an "imaging utilization watchdog" and is well known for investigating imaging costs and self-referral trends.



David C. Levin, M.D.

"I first encountered Dr. Levin when I was a resident in the late 1970s, attending his RSNA refresher course on coronary arteriography," said Dr. Becker. "He was such an effective teacher, whose wealth of experience and excitement about his work showed in every explanation he gave and in his answer to every question. Now, more than 30 years later, I feel fortunate to call him a career-long colleague and friend."

A 1955 graduate of Cornell University with a B.A. in economics, Dr. Levin became interested in medicine during his service as a jet fighter pilot in the U.S. Air Force. He received his medical degree from The Johns Hopkins University School of Medicine and completed a surgical internship and a radiology residency at the University of California, Los Angeles (UCLA) Medical Center.

From 1969 to 1973 Dr. Levin was an assistant professor of radiology at Cornell Medical College. His subsequent faculty appointments were associate professor of radiology at State University of New York (SUNY) Downstate Medical Center and Harvard Medical School, where he was co-director of the cardiac cath lab and interventional radiology at Brigham and Women's Hospital. He became full professor at Harvard in 1981 and acting chair of the Brigham radiology department in 1985. In 1986 he was appointed professor and chair of radiology at Jefferson Medical College and Thomas Jefferson University.

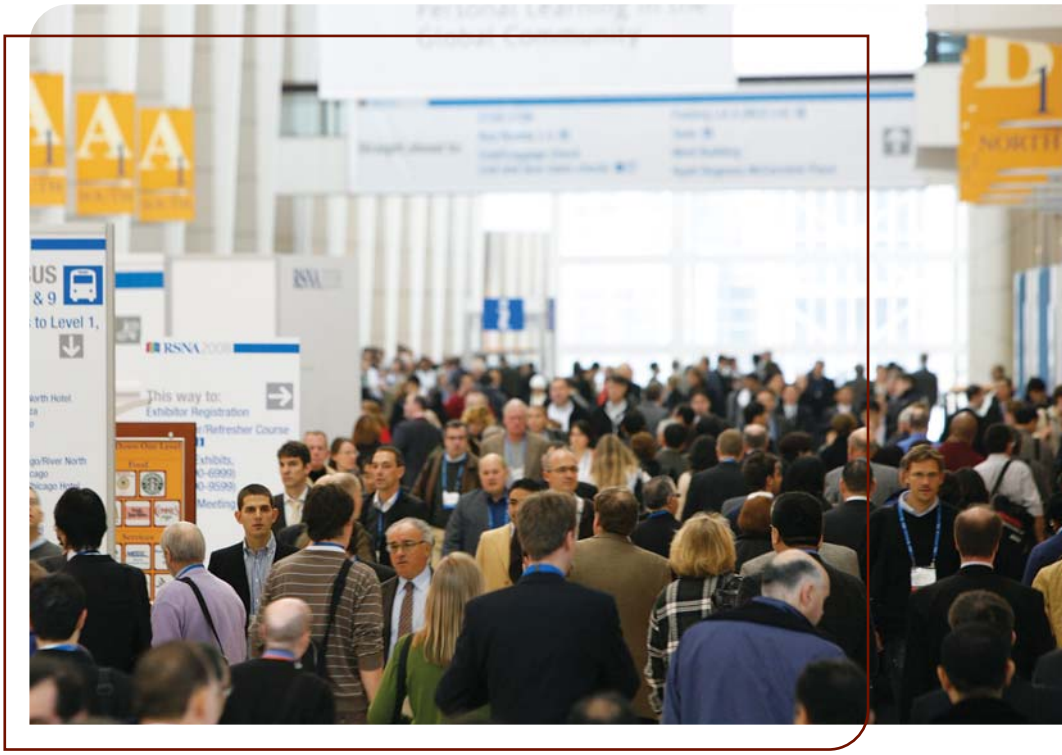
Dr. Levin established himself as an authority in cardiovascular and interventional radiology, investigating the morphologic aspects of coronary artery stenosis, diagnostic angiography and angioplasty and other percutaneous interventions for vascular disease.

Since his semi-retirement in 2002, Dr. Levin has served as a consultant for a Houston-based radiology utilization management company, an imaging center development firm based in Nashville, Tenn., and a nonprofit healthcare technology organization in Philadelphia. He also maintains part-time teaching, clinical and research positions at Jefferson Medical College, where he still performs coronary CT angiography procedures.

An RSNA member since 1974, Dr. Levin was RSNA's third vice-president in 1996. He has served on numerous RSNA committees and as a scientific advisor to the RSNA Research & Education Foundation.

"It is a thrill and honor to receive the gold medal, said Dr. Levin. "RSNA is the premier radiology organization when it comes to research and the education of its members. I've been coming to this meeting for over 40 years and still get a kick out of presenting abstracts or refresher courses. I give my sincere thanks to the society and all its members."

For expanded versions of the biographies of Drs. Glazer, Lentle and Levin, see the *RSNA Meeting Program* or go to *RSNA2009.RSNA.org* and click Meeting Program in the left-hand column.



RSNA 2009 Honorary Members

Honorary Membership in RSNA is presented for significant achievements in the field of radiology. At RSNA 2009, Honorary Membership will be given to Lizbeth Kenny, M.D., of Brookfield, Australia; Borut Marincek, M.D., of Zurich, Switzerland; and Ho-Young Song, M.D., of Seoul, Republic of Korea.

Lizbeth Kenny, M.D., FRANZCR, is a champion of multidisciplinary cancer management, working to underscore radiology's role in revolutionizing patient care.

Dr. Kenny is director of cancer services for the Central Area Health Service in Queensland, Australia.

Lizbeth Kenny, M.D., FRANZCR

"Dr. Kenny's work is brimming with evidence of her extraordinary ability to deliver excellence, no matter the setting or the scale," said 2009 RSNA President Gary J. Becker, M.D. "From her care of the individual cancer patient to her service as interdisciplinary team member and clinical trialist, from her leadership in specialty organizations to her advocacy for radiologists as central members of the cancer care delivery team, she gives it her all."

Born in Glasgow, Scotland, Dr. Kenny immigrated to Brisbane, Australia, at age 12. She earned her medical degree from Queensland University in 1980 and completed a residency at Royal Brisbane Hospital and specialty training in radiation oncology.

Dr. Kenny spent nine years in private practice before being appointed a senior staff specialist in radiation oncology at Royal Brisbane and Women's Hospital, a position she has held since 1997. She became director of cancer services at Queensland Health in 2005.

Multidisciplinary collaboration is the most beneficial approach to patient care, according to Dr. Kenny, and she touts the advent of new developments in interventional radiology as helping to transform the healthcare system. With the Central Area Health Service, she has helped establish a statewide plan for universal cancer services. She was 2001–2004 chair of the National Assessment of Clinical Cancer Research Grants Applications and 2002 president of the Clinical Oncological Society of Australia, an organization encompassing more than 20 specialist, procedure and cancer-specific groups for clinical cancer care.

Dr. Kenny was president of the Royal Australian and New Zealand College of Radiologists (RANZCR) from 2005 to 2007. As RANZCR president, Dr. Kenny worked to redirect radiologists toward a central role in patient care. She also served as dean of the Faculty of Radiation Oncology from 1998 to 2002. During her term as dean, she oversaw development of Australia's National Strategic Plan for Radiation Oncology.

Active in both research and leadership, Dr. Kenny has authored scientific publications on topics including radiology workforce issues, the influence of belief systems in the quality of life of patients with cancer, the conundrum of whole-body CT screening and radiation therapy trends and practices. She is currently a principal investigator in a number of chemoradiation trials.

"I have admired the RSNA all my professional life and it has been a privilege and true pleasure for me to work with RSNA closely over these past years," said Dr. Kenny. "RSNA is a vital organization and it will remain at the forefront of maximizing the benefits that radiology can bring to the world community at large."

Borut Marincek, M.D.

An esteemed educator and natural leader, **Borut Marincek, M.D.,** is helping to guide radiology's advancement throughout the world.

Dr. Marincek is a professor of radiology and chair of the Institute of Diagnostic Radiology at Zurich University Hospital. He is also the first Swiss president of ECR.

"Dr. Marincek personifies the best attributes of a Swiss scientist and humanist—he is not only hard-working, precise and exquisitely cultured, but also thoroughly gentle, kind and giving," said 2009 RSNA President Gary J. Becker, M.D.

"Honorary Membership in RSNA is not just a personal honor for me, but it is also a very special honor for my team in our department at the Zurich University Hospital and for the European Congress of Radiology (ECR)," said Dr. Marincek. "It will strengthen the transatlantic bonds and common professional interests."

Born in 1944 in Solothurn, Switzerland, Dr. Marincek received his medical degree from the University of Zurich Medical School. During his residencies at the University Hospitals of Zurich and Berne he studied pathology, diagnostic radiology, nuclear medicine and radiation oncology and afterward joined the staff of Berne's Institute of Diagnostic Radiology (IDR).

In 1979, Dr. Marincek traveled to the U.S. to pursue a research fellowship in oncologic diagnostic radiology at Stanford University Hospital. He then returned to IDR at Berne as a clinical associate. He achieved the rank of associate professor of radiology at Berne in 1986 and was appointed IDR vice-chair in 1987. In 1993 he became a professor of radiology at the University of Zurich and from 1995 to 1997 he also served as chair of the Institute of Diagnostic Radiology and Nuclear Medicine at Zug Cantonal Hospital.

With Dr. Marincek presiding, ECR 2009 in Vienna received an all-time high number of abstract submissions and welcomed a record 18,200 participants from 97 countries, as well as lecturers and moderators from more than 40 countries, under the motto "The Summit of Science." The symbol chosen to represent the congress was an image of a famous Swiss mountain peak—the Matterhorn. Highlights of the meeting included the popular "ESR meets" sessions, where radiologists from Switzerland, Croatia, Australia and New Zealand presented their latest scientific achievements, and an opening lecture delivered by RSNA President-elect Hedvig Hricak, M.D., Ph.D., Dr. h.c.

Ho-Young Song, M.D., Ph.D., has come full circle since his days as a radiology resident in Korea dreaming of standing at an RSNA podium to present a scientific paper.

In the roughly three decades since then, Dr. Song has become an internationally recognized authority on interventional and cardiovascular radiology.

"It is good fortune that in my career, my path has intersected with Dr. Song's, and, as a result, I have gotten to know this outstanding leader and prolific, yet extremely humble, innovator who holds approximately 20 stent patents," said 2009 President Gary J. Becker, M.D.

Ho-Young Song, M.D., Ph.D.

Dr. Song called RSNA a "dream stage," particularly for Asian members with tradition of unfailing dedication to education. He has since presented scientific papers from RSNA podiums more than 60 times.

Dr. Song is a professor of radiology and section chief of the Department of Vascular and Interventional Radiology at the University of Ulsan, College of Medicine in Seoul, Korea, which he joined in 1993. He became a professor in 1998 and chair of the Department of Radiology in 2002 before assuming his current position in 2006.

Under the promotion of the Korean government, Dr. Song started the company S&G Biotech, providing expertise for vascular and nonvascular stents, and now serves as the company's advisor.

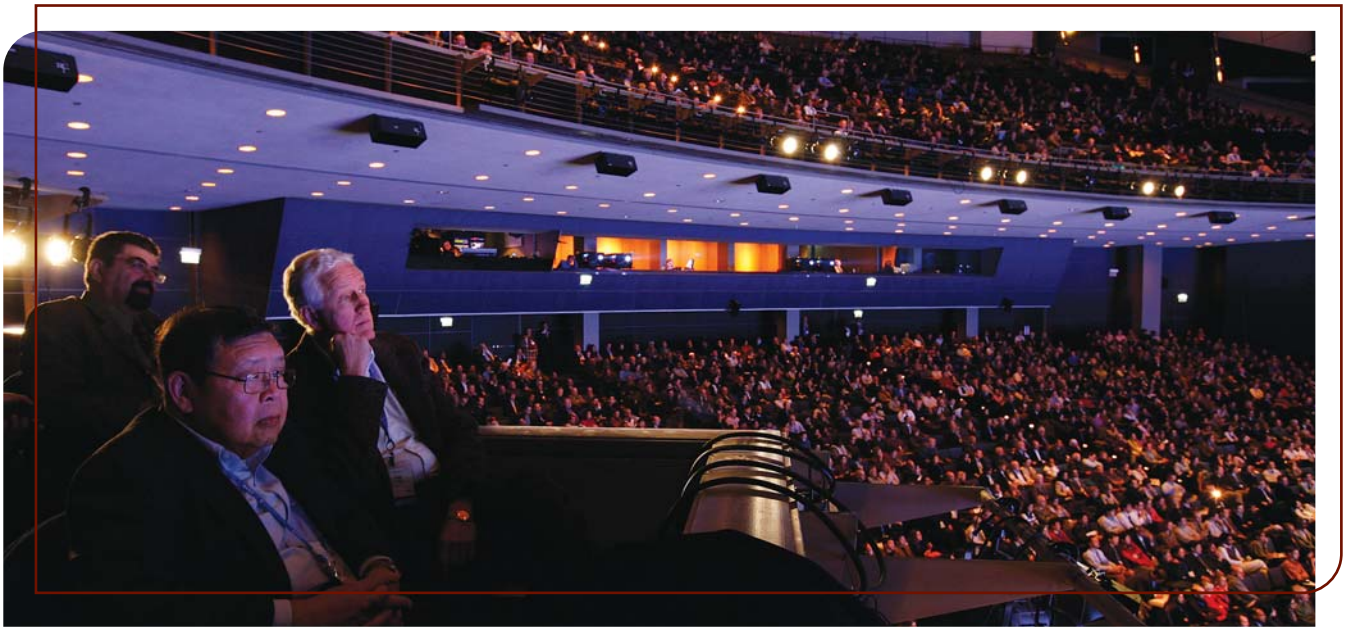
Dr. Song's research in vascular and nonvascular interventional radiology began at Jeonbuk National University in Jeollabuk-Do, South Korea, where he earned his medical degree in 1979 and returned as an assistant professor of radiology in 1986. During his seven years at the university, he collaborated with specialists in other disciplines to develop esophageal stents. Dr. Song holds American and European patents for a self-expanding endovascular stent.

Dr. Song has been a visiting professor at numerous universities in Japan, the U.S., Spain and Sweden. He has been invited to present 262 lectures all around the world.

Currently a section editor of nonvascular section of the *Journal of Vascular and Interventional Radiology,* Dr. Song has also served on the editorial boards of journals including the *Journal of Vascular and Interventional Radiology, Journal of Cardiovascular and Interventional Radiology* and *Journal of Chinese Interventional Radiology.*

"It is a tremendous honor and thrill to have been chosen as an RSNA honorary member," he said. "Since I started my residency in radiology, I have been deeply grateful to have been inspired and nurtured by RSNA and its enthusiastic members, with whom I have a longstanding scientific and personal friendship."

For expanded versions of the biographies of Drs. Kenny, Marincek and Song, see the *RSNA Meeting Program* or go to *RSNA.2009.RSNA.org* and click 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 (*). Each physician can earn a total of *13.75 AMA PRA Category 1 Credits™* at RSNA 2009 plenary sessions.

Saturday

12:00 – 2:00 p.m.

AAPM/RSNA Physics Tutorial for Residents

Physics of Flat-Panel Fluoroscopy Systems

Organizer: Mahadevappa Mahesh, M.S., Ph.D.

1:00 – 5:00 p.m.

Effective Real Estate Investment Strategies+*

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

1:30 – 5:30 p.m.

NIH Grantsmanship Workshop+*

Moderator: Robert J. Nordstrom, Ph.D.

2:15 – 4:15 p.m.

AAPM/RSNA Tutorial on Equipment Selection

Flat-Panel Equipment

Organizer: Jerry A. Thomas, M.S.

Sunday

8:30 – 10:15 a.m.

President's Address

Quality Counts

Gary J. Becker, M.D., RSNA President

- **Dedication of the 2009 *RSNA Meeting Program* to the memory of Hillier L. Baker Jr., M.D., and Henry P. Pendergrass, M.D., M.P.H.**
- **Announcement of Outstanding Educator and Outstanding Researcher Awards**

  (Information about the award recipients will be included in the November issue of *RSNA News*.)

Opening Session

Moderator: Robert M. Quencer, M.D.

Quality Counts

- **National Priorities for Transforming Health Care**

  Janet M. Corrigan, Ph.D., M.B.A., M.S. Eng.
- **Patient-Centered Radiology**

  Stephen J. Swensen, M.D., M.M.M.

10:45 a.m. – 12:15 p.m.

Oncodiagnosis Panel

Detection and Treatment of Early Lung Cancer: Current Controversies and Future Directions

4:00 – 4:10 p.m.

Report of the RSNA Research & Education Foundation

Jack E. Price, chair, R&E Foundation Board of Trustees

4:00 – 5:45 p.m.

Image Interpretation Session

Moderator: George S. Bisset III, M.D.

Panelists: Norman J. Beauchamp Jr., M.D., M.H.S.; Thomas H. Berquist, M.D.; Kenneth A. Buckwalter, M.D.; Philip Costello, M.D.; Susan D. John, M.D.; Jonathan B. Kruskal, M.D., Ph.D.; Desiree E. Morgan, M.D.; Robert D. Tarver, M.D.; George A. Taylor, M.D., William T.C. Yuh, M.D., M.S.E.E.

New this year: Ten panelists (two in each category) will receive cases for review two hours before going on stage. The audience will also participate this year, with 1,500 audience transceivers enabling participants to vote for the diagnosis before the correct answer is revealed.

Monday

7:00 – 8:00 a.m.

Special Focus Sessions

- **Medical Myth Busters: Fact and Fables in Radiology**
- **Dynamic Volume CT: Impact on Patient Management**

1:30 – 2:45 p.m.

Eugene P. Pendergrass New Horizons Lecture

Qualitative and Quantitative Ways of Understanding Clinical MR Images

Graeme M. Bydder, M.B.Ch.B.

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

Presentation of Honorary Memberships

- *Lizbeth Kenny, M.D., FRANZCR Brookfield, Australia*
- *Borut Marincek, M.D. Zurich, Switzerland*
- *Ho-Young Song M.D., Ph.D. Seoul, Republic of Korea*

(See pages 22–23 for honoree biographies.)

1:30 – 2:45 p.m.

AAPM/RSNA Basic Physics Lecture for the Radiologic Technologist

MR Imaging—Advanced Technology

Speaker: Moriel S. NessAiver, Ph.D.

1:30 – 5:45 p.m.

Physics Symposium

Therapy Shielding and Physics and Applications of PET/CT

Course Directors: Dianna Cody, Ph.D., and Melissa C. Martin, M.S.

4:30 – 6:00 p.m.

Special Focus Sessions

- **The Revolution in U.S. Health Care**
- **Jeopardy: Neuroradiology**
- **Assessing Therapeutic Response to Cancer Treatment: Do Advanced Techniques Make a Difference?**
- **Prostate MR Imaging: Is There an Added Value in Clinical Management?**
- **Parasitic Diseases: A Head-to-Toe Review from the AFIP (In conjunction with the Armed Forces Institute of Pathology)**
- **Advanced Imaging of Cartilage**
- **When CT Cannot Be Performed: MR Angiography for Pulmonary Embolism Diagnosis**
- **Clinical Needs for Quantitative Imaging in Brain Disorders**
- **Funding for Innovative Imaging Technology Development, Part I: Overview of the NCI and NHLBI Small Business Innovation Research (SBIR) Programs**

(Continued on Wednesday)

4:30 – 6:30 p.m.

Asset Protection and Retirement Planning in the New (Stimulus?) Era+*

Presenter: Barry Rubenstein, B.S., J.D., LLM

Tuesday

10:10 – 10:20 a.m.

RSNA Business Session

1:30 – 2:45 p.m.

Annual Oration in Diagnostic Radiology

Radiology in the Era of Molecular Medicine: Can We Measure Up?

Daniel C. Sullivan, M.D.

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

Presentation of Gold Medals

- *Gary M. Glazer, M.D.*
  Stanford, Calif.
- *Brian C. Lentle, M.D.*
  Victoria, British Columbia
- *David C. Levin, M.D.*
  Philadelphia

(See pages 20–21 for honoree biographies.)

Wednesday

1:30 – 2:45 p.m.

Announcement of Education Exhibit Awards

Annual Oration in Radiation Oncology

Genetic Factors in the Diagnostic Imaging and Radiotherapeutic Management of Breast Cancer

Bruce G. Haffty, M.D.

4:30 – 6:00 p.m.

Special Focus Sessions

- **Musculoskeletal Radiology Quiz Bowl**
- **Wait, Wait, Don't Tell Me: Neuroradiology/Head and Neck Edition**
- **Is PET a Reliable Indicator of Tumor Viability in the Head and Neck?**
- **Radioembolization/Microsphere Brachytherapy: What Is the Efficacy?**
- **Structured Reporting: How Much Structure Is Enough?**
- **Controversies in Setting Up a Fetal Imaging Program: Who, Why, and How?**
- **US in 2015: Can We (Should We) Shape the Future?**
- **Quality and Safety in Academic Radiology Departments: Challenges and Opportunities**
- **Fear Factor: Breast Imaging Cases That Challenge the Experts (An Interactive Session)**
- **Funding for Innovative Imaging Technology Development, Part II: The NCI SBIR Program and Challenges of Technology Commercialization**

Thursday

7:00 – 8:00 a.m.

Special Focus Sessions

- **Requiring a Year of Diagnostic Radiology for Radiation Oncology Residents: The Wisdom/The Reality**
- **Advances in High-Speed MR and CT Imaging: What Are the Trade-offs?**

1:30 – 1:40 p.m.

Inauguration of RSNA Board of Directors for 2010

1:40 – 1:50 p.m.

Introduction of 2010 AAPM Officers and Council Chairmen

1:50 – 2:45 p.m.

RSNA/AAPM Symposium

Advances in Quantitative Imaging: Linking the Phenome to the Genome

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

3:00 – 4:00 p.m.

Special Focus Sessions

- **Head and Neck Anatomy: An Interactive Self-appraisal (An Interactive Session)**
- **The Use of Medical Imaging Data Distribution Standards to Improve Patient Care and Safety**
- **Government Mandates and Regulations: Impact on Radiology and Facility Accreditation**
- **Computerized Physician Order Entry: Advances and Challenges**
- **How Does the FDA Approach to Approving Equipment for Breast Imaging Protect Health and Safety? Do We Need a Technology Assessment Institute?**
- **SUVs in PET Imaging: A Blessing and a Curse**

Friday

12:45 – 3:15 p.m.

Friday Imaging Symposium

Trauma Imaging

Moderator: Stuart E. Mirvis, M.D.

Associated Sciences Program

The Associated Sciences Consortium will hold 10 refresher courses on Monday, Tuesday and Wednesday. The consortium comprises 12 associations representing the various disciplines that function within the radiology department.

Refresher Courses

Monday – November 30

- Where is the Radiologist? Radiology's Changing Dynamics (two sessions)
- Compliance with the Supervision Rules and Accreditation Requirement: The Impact on Reimbursement
- Architecture That Makes a Difference: Design Guidelines for Tomorrow's Imaging Environment

Tuesday – December 1

- Molecular Imaging: Here to Stay
- Managing Risk for Optimal Patient Safety
- Imaging through a Cross-cultural Lens: A Global Perspective on Values, Norms, Mystiques and Fears
- Radiation Dose: Are We at Crisis?

Wednesday – December 2

- Why and How Far Health Care IT Is Behind Our Non-Health Care IT Brethren
- Imaging in the Operating Room

NEW ASRT @ RSNA 2009

Offered in collaboration with the American Society of Radiologic Technologists, ASRT @ RSNA 2009 is a new 10-session course that will be approved for continuing education credits for radiologic technologists.

Edward I. Bluth, M.D.
Chair, RSNA Associated Sciences Consortium

Morris A. Stein, A.I.A.
Coordinator, Associated Sciences Consortium

Wednesday – December 2

- Why We Should Talk to Parents about Radiation Safety Issues
- Technologist Perceptions and Practice Related to Radiation Exposure Dose Trends in the United States
- Living on the Edge of Technology and Complexity: The Law of Unintended Consequences
- Challenges and Issues of Managing Technology: The Manager's Perspective

Thursday – December 3

- Update on the Development of Breast Tomosynthesis
- Customer Service in the Imaging World
- More Is Not Better When We're Talking about Radiation Exposure in Kids
- Challenges and Issues of Managing Technology: The Educator's Perspective
- Equipment Replacements: Implementation, Challenges, and Rewards in a 24-Hour Operation
- Challenge and Change in Radiographers' Roles

Scientific Paper Sessions

RSNA 2009 will feature more than 1,500 scientific papers in 16 subspecialties:

- Breast Imaging
- Cardiac
- Chest
- Emergency Radiology
- Gastrointestinal
- Genitourinary
- Health Services Policy & Research
- Informatics
- Musculoskeletal
- Molecular Imaging
- Neuroradiology/Head & Neck
- Nuclear Medicine
- Pediatrics
- Physics
- Radiation Oncology & Radiobiology
- Vascular/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.

Robert M. Quencer, M.D.
Chair, RSNA Scientific Program Committee

AMA PRA Category 1 Credit™ is available for physicians and Category A+ CE credit is available for technologists.

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.

Digital Presentations

New this year, the electronic education exhibit and scientific posters so familiar to RSNA attendees are now known as digital presentations.

The 712 posters and 1,343 of the education exhibits covering a variety of subspecialties and modalities can be viewed on computers within each subspecialty area in the Lakeside Learning Center as well as the digital presentation area. During the lunch period, select authors are scheduled to be available for discussion.

Additional education exhibits presented on backboard panels will be clustered according to subspecialty in the Lakeside Learning Center. Authors of some of these exhibits are also available for discussion during the lunch period. See the *RSNA Meeting Program* for more information.

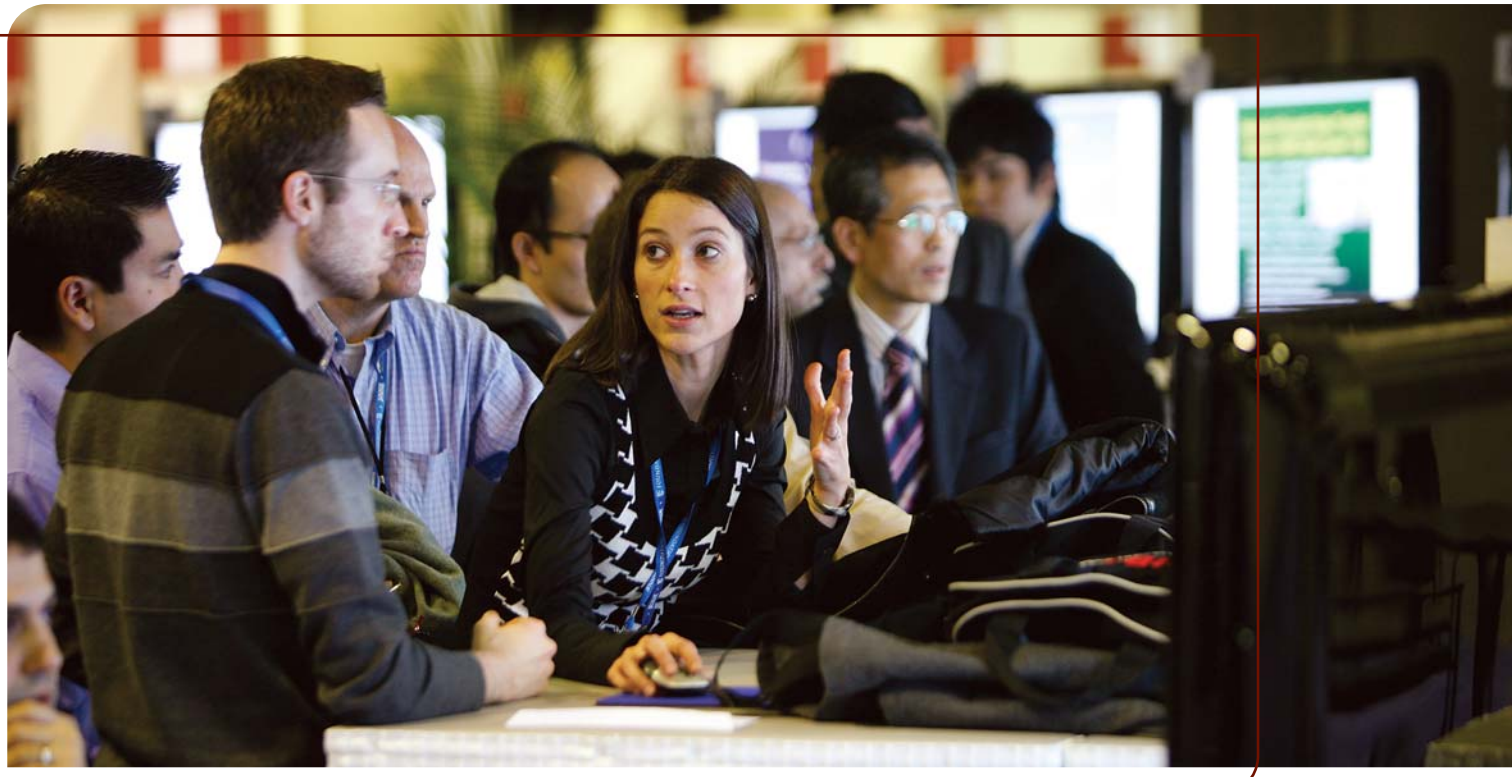
Scientific posters help attendees evaluate current research, identify current and future scientific and technologic developments, modify academic and clinical practices and identify and practice research methods.

Claire E. Bender, M.D.
Chair, RSNA Education Exhibits Committee

Education exhibits are designed 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.

Attendees are also encouraged to take part in lunchtime "topic table" discussions at the Lakeside Learning Center Bistro RSNA. Facilitators will lead discussions on different topics each day. See Page 18.

A map of the Lakeside Learning Center will be featured in the *RSNA Meeting Guide*, available onsite at McCormick Place.



Refresher Courses

RSNA 2009 offers more than 350 refresher courses on traditional and cutting-edge topics.

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

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

AMA PRA Category 1 Credit™ is available for physicians and Category A+ CE credit is available for technologists.

For more information or to register for courses, go to *RSNA2009.RSNA.org.*

Radiologist Assistants (RA) Symposium

Four refresher courses at RSNA 2009 are designed to meet the educational needs of the radiologist assistant (RA) as defined by the American Registry of Radiologic Technologists (ARRT®). Topics are abdominal imaging and procedures, musculoskeletal imaging and procedures, neuroimaging and radiologist assistant practice: continuing education, expansion and expectations.

Case-based Review Courses

Day-long, case-based review courses feature an audience-response system (ARS) to facilitate self assessment. Topics this year are interventional, neuroradiology, pediatric radiology, MR and nuclear medicine: PET/CT. The Bolstering Oncoradiologic and Oncoradiotherapeutic Skills for Tomorrow (BOOST) program will include a 90-minute case-based review in radiation oncology each afternoon Monday through Thursday. Advance registration is required for case-based courses. Register online at *RSNA2009.RSNA.org.*

Essentials of Radiology Courses

This 2½ -day series of 10 refresher courses is designed especially for generalists, trainees and subspecialists who want to review other areas of radiology. The series will provide a thorough review in the areas of cardiac, chest, gastrointestinal, pediatric with a focus on neonatal imaging, genitourinary, musculoskeletal with a focus on arthography, mammography, nuclear medicine, neuroradiology and ultrasound. Attendees may register for individual courses or the whole series.

James A. Brink, M.D.
Chair, RSNA Refresher Course Committee

2009 Categorical Course in Diagnostic Radiology

- **Gastrointestinal—Esophagus and Stomach**

Sunday, November 29

Co-Directors: Rendon C. Nelson, M.D., and Desiree E. Morgan, M.D.

2009 Categorical Course in Diagnostic Radiology Physics

- **Advances in Digital Tomosynthesis—From Physics to Clinical Applications**

Monday, November 30

Co-Directors: James T. Dobbins III, Ph.D., and Martin J. Yaffe, Ph.D.

To register for these or any other courses, go to *RSNA2009.RSNA.org* and click Advance Registration and Course Enrollment.

More detailed information about RSNA 2009 is available at *RSNA2009.RSNA.org.*

Informatics

Numerous demonstrations at RSNA 2009 highlight the latest developments in radiology informatics.

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

IHE® Image Sharing Demonstration—South Building (Hall A), Booth 2843

Attendees of the 2009 Integrating the Healthcare Enterprise (IHE®) Image Sharing Demonstration will see how institutions can provide better access to imaging information for patients and referring physicians and replace cumbersome image CDs with network access to images.

Held regularly during technical exhibit hours, the demonstration shows how images and radiology reports can become part of a patient's personal health record, available securely via the Internet to the patient and authorized care providers. The demonstration features leading vendors in medical imaging and electronic health records and is based on interoperability specifications from the IHE initiative.

NCI caBIG® Imaging Workspace—Lakeside Learning Center

The National Cancer Institute's Cancer Biomedical Informatics Grid (caBIG®) Imaging Workspace, now in its fourth year at the annual meeting, will showcase five of its Imaging Tools as well as the Clinical Trials Suite in an interactive setting. Developers of these free, open-source tools will be on hand to give demonstrations and answer questions. In addition, caBIG Imaging program leaders will be available to discuss instances of existing utilization of caBIG Imaging and Clinical Trials Management Systems (CTMS) products as well as opportunities for attendees to begin using caBIG Imaging and CTMS products.

National Library of Medicine—Lakeside Learning Center

The National Library of Medicine (NLM) provides free Web access to nearly 19 million citations for biomedical and clinical research articles dating back to the 1850s through PubMed/MEDLINE (available at *PubMed.gov*), which also includes links to many sites providing full-text articles and other related resources. Additional databases provided free by NLM include resources on genetics and environmental and toxicological topics. NLM coordinates delivery of library services to health professionals through the National Network of Libraries of Medicine (NN/LM).

Other free databases provided by NLM focus on genetics, environmental and toxicological topics and resources for patients and families. NLM coordinates delivery of library services to health professionals through NN/LM; members of NN/LM Greater Midwest Region will staff the booth and coordinate additional volunteers who will staff the booth and teach instructional courses.

Demonstrations of the free databases and resources and personal training in searching PubMed/MEDLINE will be offered. Attendees are invited to search NLM databases on individual workstations with one-on-one assistance from NN/LM health sciences librarians. In addition, three NLM-sponsored courses will be presented three times during the week.

Technical Exhibits

Technical Exhibits at RSNA 2009 span three halls: Hall A in the South Building, Hall B in the North Building and Hall D in the Lakeside Center. A balanced mix of companies can be found in each location. Commercial vendors will conduct workshops in Hall D, Lakeside Center.

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.*

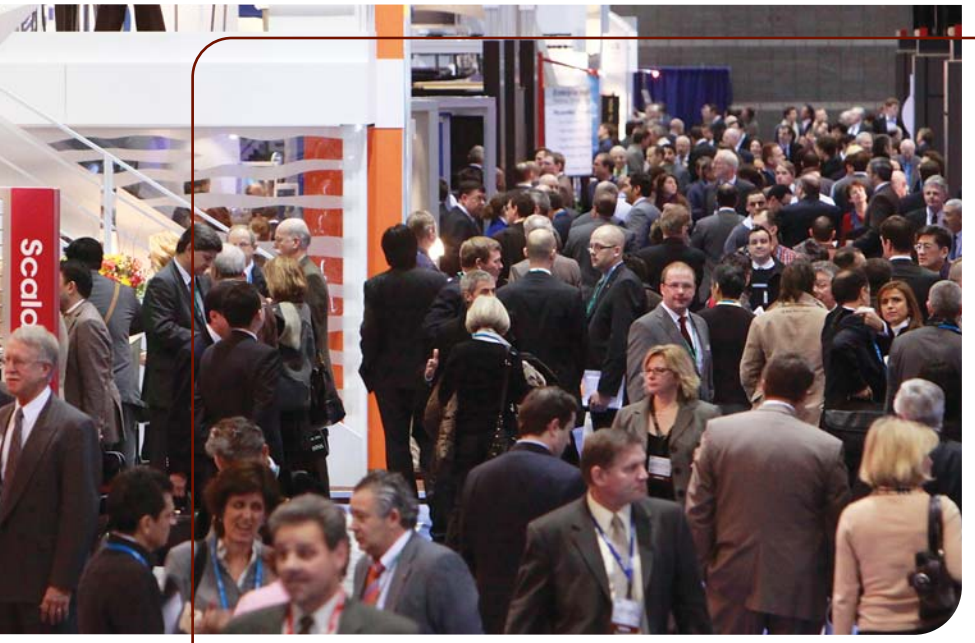
Jonathan Alexander, M.D.
Chair, RSNA Technical Exhibits Committee

Available in each of the three halls, Bistro RSNA gives attendees the opportunity to enjoy lunch at their convenience and provides a delicious variety of menu options, including several fresh and healthy options, international cuisine and hearty regional favorites. There is also a Bistro RSNA location in the Lakeside Learning Center. See Page 17 for details.

Technical Exhibit Hours

Hall A (South Building), Hall B (North Building) and Hall D (Lakeside Center)

Sunday–Wednesday	10:00 a.m. – 5:00 p.m.
Thursday	10:00 a.m. – 2:00 p.m.



Chicago Welcomes RSNA Attendees

Through Chicago's "We're Glad You're Here®" program, Mayor Richard M. Daley and the Chicago Convention & Tourism Bureau (CCTB) plan a citywide welcome for attendees and exhibitors at the RSNA 95th Scientific Assembly and Annual Meeting. The welcome includes:

- Complimentary bottled water and hot beverages Monday and Tuesday from 5:00 p.m. to 6:00 p.m. (while supplies last) at the RSNA transportation gates at McCormick Place.
- A searchable Calendar of Events highlighting special events and attractions taking place in Chicago during the meeting, available at *www.choosechicago.com/rsna.*
- "We're Glad You're Here®" banners posted in locations around the city, including O'Hare International Airport, McCormick Place and downtown streets including Michigan Avenue.
- Welcome signs displayed throughout O'Hare and Midway airports, shuttle buses and participating hotels.
- Welcome Centers at O'Hare and Midway Airports providing information about the city and RSNA.
- Restaurant reservations service at the RSNA Help Centers at McCormick Place.
- Chicago Special Values available at the RSNA Help Center with special offers and discounts from local restaurants, retailers and attractions. The offers are also available at *www.choosechicago.com/rsna.*

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

CCTB Highlights Chicago Attractions for RSNA 2009

The Chicago Convention and Tourism Bureau (CCTB) has released a video highlighting popular Chicago attractions for RSNA 2009 annual meeting attendees. Attractions include popular restaurants, shopping, the Art Institute of Chicago's new Modern Wing, the Shedd Aquarium and acclaimed performances by Steppenwolf Theatre and the Chicago Symphony Orchestra.

To view the video, go to *RSNA2009.RSNA.org/attendees* and click Tours and City Events in the left-hand sidebar.

Win a $500 Shopping Spree, Reap Sales Tax Discount

Many Chicago retailers are offering an exclusive 10.25 percent "no sales tax" discount to RSNA 2009 attendees. In addition, attendees, presenters and family members can enter an online sweepstakes for a chance to win a $500 gift certificate valid at Michigan Avenue shops including Water Tower Place, The 900 Shops and Shops at North Bridge.

A list of retailers offering discounts and a downloadable coupon—along with a chance to enter the sweepstakes—are available through the Chicago Convention & Tourism Bureau at *ChooseChicago.com/ShopChicago.*

Research & Education Foundation Donors

THE Board of Trustees of the RSNA Research & Education Foundation and its grant recipients gratefully acknowledge the contributions made to the Foundation July 17 – August 14, 2009.

VANGUARD PROGRAM

GE Healthcare

imagination at work

$100,000

A Vanguard company since 1989

EXHIBITORS CIRCLE PROGRAM

BRONZE CIRCLE ($1,500)

Franklin & Seidelmann Subspecialty Radiology

InSite One, Inc.

MagView

VISIONARY DONOR PROGRAM

PLATINUM VISIONARY ($25,000)

Sarah S. Donaldson, M.D.

SILVER VISIONARY ($10,000)

Ellen & Robert D. Zimmerman, M.D.

BRONZE VISIONARY ($5,000)

Shirley Baron, Ph.D. & Richard L. Baron, M.D.
Lisa L. Jones & J. Keith Smith, M.D.

VISIONARIES IN PRACTICE PROGRAM

BRONZE LEVEL ($10,000)

Greensboro Radiology
Greensboro, N.C.

Northwest Radiology Network
Indianapolis

Radia
Everett, Wash.

Radiology Associates, P.A.
Little Rock, Ark.

Raleigh Radiology
Raleigh, N.C.

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

$5,000 – $9,999

Maysoon & Talal Beydoun, M.D.
Sarah S. Donaldson, M.D.

$1,500 – $4,999

Shirley Baron, Ph.D. & Richard L. Baron, M.D.
Laurie A. Loevner, M.D. & Steven Berger
Constance Whitehead & M. Paul Capp, M.D.
Alice & Ernest J. Ferris, M.D.
Margaret C. & R. Gilbert Jost, M.D.
Leon E. Kinasiewicz, M.D.
Joseph K.T. Lee, M.D.
Judy & William A. Murphy Jr., M.D.
Judy S. & C. Leon Partain, M.D., Ph.D.
In memory of Henry P. Pendergrass, M.D.
Anne G. Osborn, M.D. & Ronald Poelman
Trilby & Calvin L. Rumbaugh, M.D.
In memory of George Jacobson, M.D. and Juan Taveras, M.D.
Bernard A. Sakowicz, M.D.
Lisa L. Jones & J. Keith Smith, M.D.
Rebecca R. & Wilbur L. Smith Jr., M.D.
Richard G. Stiles, M.D.
Nancy & William T. Thorwarth Jr., M.D.
Ellen & Robert D. Zimmerman, M.D.

$501 – $1,499

Edgar Colon, M.D.
Navya Dasyam, M.B.B.S. & Anil K. Dasyam, M.D.
Penny & Edmund A. Franken Jr., M.D.
Poppy & H. Hugh Hawkins Jr., M.D.
Susan A. Mulligan, M.D. & Mark J. Mulligan, M.D.

$251 – $500

B. Renee & Joseph M. Accurso, M.D.
Lynnette & Jose A. Bauza, M.D.
Catherine J. Brandon, M.D.
Catherine Brant
In memory of Earl E. Brant, M.D.
Sandra W. Cohen, M.D. & Harris L. Cohen, M.D.
William R. Green, M.D.
In honor of my wife Carolyn Ann Green and sons Robert C. Green & Edward D. Green, M.D.
Mary & Donald P. Harrington, M.D.
John R. Hesselink, M.D.
Paulette & David E. Magarik, M.D.
Martha B. Mainiero, M.D.
Jeanine A. McNeill, M.D.
In memory of Frances B. Toomey, M.D.
Maria Russe & Francisco J. Orobitg, M.D.
George C. Ramsay, M.D.
In memory of Harold Jacobson, M.D.
Susan & Matthew D. Rifkin, M.D.
E. Russell & Julia R. Ritenour
Vivien C. Wong, M.D.
In memory of Frances B. Toomey, M.D.

$250 OR LESS

Marjorie & Philip O. Alderson, M.D.
Julie A. Alford, M.D.
John H. Austin, M.D.
Lynnette & Jose A. Bauza, M.D.
Michael D. Beland, M.D.
Jacques Blanca, M.D., Ph.D.
B. Nicolas Bloch, M.D.
Melvin V. Boule, M.D.
Victoria & Michael N. Brant-Zawadzki, M.D.
Virginia G. & Leonard J. Bristol, M.D.
Marcia Haddox & Kenneth A. Buckwalter, M.D.
Irma & Louis J. Bujnoch, M.D.
Ugur Camli, M.D., Sc.M.
Lynn N. Carlton, M.D.
Balasundaram Chandra-Sekar, M.D.
Taylor Chung, M.D.
Lawrence J. Cohen, M.D.
Sebastian A. Cook, M.D.
Christopher J. Cornille, M.D.
Harriet F. & Daniel B. Crane, M.D.
Jennifer R. Cranny, M.D.
Barry D. Daly, M.D.
Lawrence P. Davis, M.D.
Maria D. Duque, M.D.
Edward A. Eikman, M.D.
Tracy L. Elliot IV, M.D.
Debra & Anders G. Engdahl, M.D.
In memory of Frances B. Toomey, M.D.
Diane & George E. Erbacher, D.O.
Joshua M. Farber, M.D.
James B. Fitzgerald, M.D.
Laurence H. Fitzgerald, M.D.
In memory of Howard L. Steinbach, M.D.
Myria Petrou, M.A., M.B.Ch.B. & Bradley R. Foerster, M.D.
Sharon & E.E. Franco, M.D.
Ayca Gazelle, M.D. & G. Scott Gazelle, M.D., Ph.D.
Arnold Z. Geller, M.D.
In memory of Frances B. Toomey, M.D.
Hilary W. Gentile
In memory of Mrs. Mary Buenger
Sabour Ghiacy, F.R.C.S., F.R.C.R.
Kate & Shaun J. Gonda, M.D.
Margaret D. Gore, M.D. & Richard M. Gore, M.D.
Todd D. Greenberg, M.D.
Verena S. & Basil J. Grieco, M.D.
In honor of John P. Tampas, M.D.
Harry J. Griffiths, M.D.
Howard T. Harcke, M.D.
In memory of Patricia F. Borns, M.D.
Kathy Golucke-Heredia & Sergio L. Heredia, M.D.
Jeanne M. Horowitz, M.D.
N. Carol Dornbluth, M.D. & Don D. Howe, M.D.
Ferdinand K. Hui, M.D.
Sandra & David W. Hunter, M.D.
Paula M. Jacobs, Ph.D.
Michele H. Johnson, M.D.
Laura & Monty P. Karoll, M.D.
Craig D. Kesack, M.D.
Richard A. Kiszonas, D.O.

Continued on Page 35

RSNA R&E Foundation Announces 2009 Grant Recipients

THE RSNA Research & Education Foundation funded 60 new and continuing grant projects for the 2009-2010 academic year, totaling $1.7 million. Titles and abstracts for these projects will be on display at RSNA 2009 in the R&E Foundation Pavilion in RSNA Services, Level 3, Lakeside Center. The Foundation's Board of Trustees thanks the Vanguard companies, individuals and private practices whose generous contributions have made the following grants possible.

Research Grants

RESEARCH SCHOLAR GRANT

Steve Y. Cho, M.D.
Radiology, Division of Nuclear Medicine/PET, The Johns Hopkins University School of Medicine
Prostate Specific Membrane Antigen (PSMA) PET Imaging for Detection of Metastatic Prostate Cancer and Solid Tumor Neovasculature

BRACCO
LIFE FROM INSIDE

Jiang Du, Ph.D.
Radiology, University of California, San Diego
Direct Imaging and Quantification of Cortical Bone on a Clinical 3 T MR Scanner

AGFA HealthCare

Salomao Faintuch, M.D.
Radiology, Beth Israel Deaconess Medical Center, Harvard Medical School
Prostatic Artery Embolization as a Primary Treatment for Benign Prostatic Hyperplasia

imagination at work

Alexander R. Guimaraes, M.D., Ph.D.
Radiology, Massachusetts General Hospital
Evaluation of Magnetic Nanoparticle Enhanced Magnetic Resonance Imaging in Clinical Autoimmune Diabetes

Bayer HealthCare Pharmaceuticals

Mizuki Nishino, M.D.
Radiology, Brigham and Women's Hospital, Dana-Farber Cancer Institute
Chronological Analysis of Tumor Size, Volume and CT Attenuation Coefficient in Women with Adenocarcinoma of the Lung Treated with Erlotinib

AGFA HealthCare

Myria Petrou, M.A., M.B.Ch.B.
Radiology, University of Michigan Health System
Hyposmia, Septohippocampal Cholinergic Denervation and Amyloidopathy in Mild Cognitive Impairment

COVIDIEN
positive results for life

Ashok Srinivasan, M.D.
Radiology, University of Michigan Health System
Creation of a Model for Predicting Response to Chemoradiation in Head and Neck Squamous Cell Carcinoma

Carestream HEALTH

RESEARCH SEED GRANT

Hersh Chandarana, M.D.
Radiology, New York University School of Medicine
Quantification of Tumor Angiogenesis Using Diffusion and Perfusion Weighted MR Derived Parameters Correlated with Vascular Endothelial Growth Factor (VEGF) Expression and Microvessel Density in Renal Cell Carcinoma

TOSHIBA
Leading Innovation

Kevin Kozak, M.D., Ph.D.
Human Oncology, University of Wisconsin School of Medicine and Public Health
Exploiting Angiogenic Rebound with Ionizing Radiation

PHILIPS
sense and simplicity

Lewis Shin, M.D.
Diagnostic Radiology, Stanford University
Real-Time MRI Evaluation of the Upper Airway in Patients with Obstructive Sleep Apnea with EEG Correlation

HITACHI
Inspire the Next
Hitachi Medical Systems

RESEARCH RESIDENT GRANT

Robert Chin, M.D., Ph.D.
Radiation Oncology, Stanford University Medical Center
Molecular and Bioinformatic Identification of Epithelial Ovarian Cancer Stem Cells

PHILIPS
sense and simplicity

Mohammad Eghtedari, M.D., Ph.D.
Diagnostic Radiology, University of California, San Diego
Increasing Spatial Resolution and Depth of Optical Fluorescent Imaging Using Microbubble Ultrasound Contrast Agents

BRACCO
LIFE FROM INSIDE

A. Paiman Ghafoori, M.D.
Radiation Oncology, Duke University Medical Center
Using Micro-CT to Define the Role of Endothelial Cells in the Response of Primary Lung Cancers to Radiation Therapy

FUJIFILM

Jerry Jaboin, M.D., Ph.D.
Radiation Oncology, Vanderbilt University Medical Center
Targeted Radioiodinated Nanoparticles for the Treatment of High Grade Glioma

PHILIPS
sense and simplicity

Christopher Lominska, M.D.
Radiation Medicine, Georgetown University Medical Center
An Investigation of EphB1 as a Mediator of the AT Phenotype

RSNA Presidents Circle Research Award

Arta Monjazeb, M.D., Ph.D.
Radiation Oncology, Wake Forest University Health Sciences
Mechanism of Anti-tumor Immunity Induced by Radiotherapy and Irradiated Autologous Tumor Vaccination

PHILIPS
sense and simplicity

Continued on next page

Continued from previous page

William Rockey, M.D., Ph.D.
Radiation Oncology, University of Iowa Hospitals and Clinics
High-Resolution RNA-Based Targeted PET Imaging Agents for Prostate Cancer

BRACCO
LIFE FROM INSIDE

Terence Williams, M.D., Ph.D.
Radiation Oncology, University of Michigan
Identification of Anti-Neoplastic FADD Kinase Inhibitors Utilizing a Molecular Imaging-Based High Throughput Screen

TOSHIBA
Leading Innovation >>>

RESEARCH FELLOW GRANT

Reza Forghani, M.D., Ph.D.
Radiology, Center for Molecular Imaging, Center for Systems Biology, Massachusetts General Hospital
Molecular Imaging of the Inflammatory Enzyme Myeloperoxidase in Murine Cerebral Ischemia

Brian Ghoshhajra, M.D.
Radiology, Cardiac CT/MR/PET Program, Massachusetts General Hospital
Adenosine Induced Stress Myocardial Perfusion Imaging Using Dual Source Cardiac Computed Tomography

SIEMENS

Anand Singh, M.D.
Radiology (3D Imaging), Massachusetts General Hospital
A Novel CT-based Biomarker for Predicting Therapy Response in Hepatocellular Carcinoma by Selective Quantification of Non-necrotic Tumor Components

SIEMENS

M. Reza Taheri, M.D., Ph.D.
Radiology, University of Washington
In Vivo MRI Assessment of Erythropoietin Treatment on the Migration of Iron Oxide-labeled Neuronal Stem Cells in a Rat Stroke Model

imagination at work

Michael Zeineh, M.D., Ph.D.
Radiology, Stanford University
Ultra-High Resolution Clinical Imaging of the Human Medial Temporal Lobe with 7 T MRI

RESEARCH MEDICAL STUDENT

Ehsan Balagamwala, B.A.
Radiation Oncology, Cleveland Clinic Foundation
Investigating the Role of the Gradient Index in Predicting Side Effects from Gamma Knife Radiosurgery in the Treatment of Meningiomas

Brad Barnett, B.S.
Radiology, The Johns Hopkins University School of Medicine
Evaluation of MR-Visible ThermaSphere® Microspheres For Simultaneous Chemoembolization and Thermal Ablation

Waleed Brinjikji, B.S.
Radiology, Mayo Clinic
Improving Specificity and Sensitivity of a Computer-Aided Detection Algorithm for Intracranial Aneurysms

Jacob Brown, B.A.
Radiology, Georgetown University & National Institutes of Health M.D./Ph.D. Partnership Program
Evaluation of the Coagulation State in Relation to Transarterial Chemoembolization for Hepatocellular Carcinoma

Helen Cheung, B.Sc.
Radiology, University of Toronto
Detecting Complicated Plaque in the Coronary Arteries using Magnetic Resonance Intraplaque Hemorrhage (MRIPH) Technique in a Porcine Model of Diabetes-Induced Accelerated Atherosclerosis

Michael Connolly, B.M.Sc.
Radiation Oncology, Schulich School of Medicine & Dentistry, The University of Western Ontario
Correlation Between Tumor Perfusion Measurements and Tumor Growth Delay with Radiation Therapy in an Autochthonous Prostate Cancer Murine Model

Cristian Coroian, B.S.
Radiology, University of California, Los Angeles, David Geffen School of Medicine
Retrospective Review of Extra Hippocampal White Matter Abnormality in Patients with Hippocampal Sclerosis, Using Diffusion Tensor Imaging: Three Automated Post Processing Methods

FUJIFILM

Eric Diaz, B.S.
Radiology, University of California School of Medicine, San Diego
Comparison of Quantification Techniques for Long T2 Components in Patellar Articular Cartilage at 3T: Multi-Echo Spin Echo (ME-SE), 2D Spiral Chopped Magnetization Preparation (2D-SCMP) and T2 Preparation with Ultrashort Echo Time (UTE) Acquisition

Rebecca Hartman, B.A.
Institute of Technology Assessment, Massachusetts General Hospital; enrolled at University of Pennsylvania School of Medicine
Development of a Decision-Analytic Model to Estimate Long-Term Outcomes of Cryoablation and Radiofrequency Ablation for Renal Cancer

Wesley Haynes, B.S.
Radiation Oncology, Washington University School of Medicine
64Cu-ATSM Uptake In Vitro and Ex Vivo in Cervical Cancer

Kristina Hoot, Ph.D.
Radiation Oncology, Oregon Health & Science University
Efficacy of Targeted Molecular Therapies Combined with Irradiation on Skin Squamous Cell Carcinomas

Canon

Hsiang-Hua Hung, B.A.Sc., M.A.Sc.
Radiology, Northwestern University, Feinberg School of Medicine
Development of Magnetic Resonance Imaging-Visible Embolic Agents

Marcus Jansen, B.Sc.
Radiology, University of Ottawa
Comparison of CT Perfusion and MR Perfusion Derived Cortical Grey Matter CBF in Cognitively Impaired and Unimpaired Multiple Sclerosis Patients

PHILIPS
sense and simplicity

Brian Jin, B.A.
Radiology, Northwestern University and Albert Einstein College of Medicine
The Correlation of Tumor Perfusion with Clinical Outcomes during Chemoembolization of Hepatocellular Carcinoma

Jennifer Kung, B.A.
Radiology, University of California, Los Angeles, David Geffen School of Medicine
Anatomopathological Correlation of Diffusion Tensor Imaging in Epilepsy Patients with Focal Cortical Dysplasia

Valentin Lance, B.S.
Radiology, University of California, Los Angeles
Radiologic and Microarray (Radiogenomic) Analysis of Gastric Adenocarcinoma: A Novel Classification of Tumor Subtypes and Prognosis

Charles Li, B.S.
Radiology, University of California, San Diego; enrolled at the University of California, San Diego School of Medicine
Improved Isotropic 3D FSE Methods for Imaging the Knee

Ted Ling, M.S., B.S.
Radiation Oncology, James M. Slater, M.D., Proton Treatment and Research Center, Loma Linda University; enrolled at Saint Louis University School of Medicine
Evaluation of the Effect of Spleen Irradiation on the Extent of Ischemic Stroke in a Rat Model

Christina Ma, B.S.
Radiology, University of Southern California, Keck School of Medicine
Evaluation of 18F-FDG PET/CT in Monitoring Tumor Ablation Efficacy of Irreversible Electroporation (IRE) in Rabbit VX2 Liver Tumor

Lina Nayak, B.A.
Mallinckrodt Institute of Radiology, Washington University Medical School
Post-Thrombotic Syndrome: Outcomes of Imaging-Guided Endovascular Intervention

Chirag Patel, M.S.E.
Radiation Oncology, The University of Texas, M.D. Anderson Cancer Center
Impact of Radiation Dose on Tumor Downstaging, Pathological Complete Response Rate, and Overall Survival Rates in Advanced Stage Rectal Cancer

Bradford Perez, B.S.
Radiation Oncology, Duke University School of Medicine
Dissecting the Role of p53 in the Response of Primary Lung Cancers to Radiation Therapy

Srikar Rao, B.A.
Radiology, Mount Sinai School of Medicine
Surveillance with FDG PET/CT vs Conventional Follow-up Algorithm and CT: Impact on Management and Survival

Chintan Shah, B.S.
Radiology, Cleveland Clinic Foundation
Evaluation of Hippocampal Damage and Episodic Memory Loss in Multiple Sclerosis Using DTI

Canon

Alvin Thompson, Ph.D.
Radiation Oncology, Wayne State University School of Medicine
Enhanced Radiosensitization of Prostate Cancer Cells Using Combined Treatments of Genistein and Vitamin D

Christian Welch, B.S.
Radiology, University of California, San Diego School of Medicine
Transcranial Sound Field Characterization Using High-Focused Ultrasound (for the Purpose of Mechanical Sonothrombolysis in Stroke)

Education Grants

EDUCATION SCHOLAR GRANTS

Marilyn Goske, M.D.
Radiology, Cincinnati Children's Hospital Medical Center
Developing a "Best Practice" National Registry for CT Scans in Children

Derek Harwood-Nash Scholar


AINE KELLY, M.D.

Aine Kelly, M.D.
Radiology (Cardiothoracic), University of Michigan
The influence of Evidence-Based Teaching Methodology on Appropriate Imaging Utilization in a Large Academic Radiology Department

imagination at work

David Yousem, M.D., M.B.A.
Russell H. Morgan Department of Radiology and Radiological Science, The Johns Hopkins Medical Institutions
Developing a Curriculum for Teaching the Business of Radiology

PHILIPS
sense and simplicity

EDUCATION SEED GRANT

Gerald Aben, M.D.
Radiology, Michigan State University
Creating a Blended Introductory Radiology Course for Geographic Dispersed Campuses

Catherine Brandon, M.D.
Radiology, University of Michigan
Teaching Systems Based Analysis: Operational Engineering and Management Concepts for Radiology Residents

imagination at work

Abraham Dachman, M.D.
Radiology, The University of Chicago
Training Tool For Colonic Insufflation and Scanning in Virtual Colonoscopy

Ariel Hirsch, M.D.
Radiation Oncology, Boston University Medical Center
Integration of Radiation Oncology into the Undergraduate Medical Curriculum

VARIAN medical systems

Petra Lewis, M.D.
Radiology, Dartmouth-Hitchcock Medical Center, Dartmouth Medical School
Development and Implementation of a National Web-Based Examination System for Medical Students in Radiology


MANDIE STREET, R.T. (R)(MR)

FELLOWSHIP TRAINING GRANT

Ivan K. Ip, M.D., M.P.H.
Brigham and Women's Hospital, Harvard Medical School
Radiologic Informatics Fellowship Program at Brigham and Women's Hospital

Kenneth Wang, M.D., Ph.D.
Radiology, The Johns Hopkins Medical Institutions
Combined Fellowship Training in Musculoskeletal Radiology and Imaging Informatics

RSNA/AUR/APDR/SCARD RADIOLOGY EDUCATION RESEARCH DEVELOPMENT GRANT

Mandie Street, R.T. (R)(MR)
Radiology, Washington University
Using Six Sigma Techniques to Reduce Radiation Dose

Research & Education Foundation Donors

Continued from Page 32

Kolleen Klein
In memory of John D. Gorman and Colleen Pienta
Nancy & J. Bruce Kneeland, M.D.
Paul C. Koutras, M.D.
Ruth A. & Evert E. Kuester, M.D.
In memory of Frances B. Toomey, M.D.
Ronald D. Kunst, M.D.
Joseph J. Lawrence, D.O.
Peter C. Levisay, M.D.
Mary C. Liebner
In memory of Edwin J. Liebner, M.D.
Sneha & Oscar Lin, M.D.
Daniel E. Lucas, M.D.
Sandi & Terence A. Matalon, M.D.
In memory of Mrs. Mary Buenger
John A. Mattingly, M.D.
William W. Mayo-Smith, M.D.
Hilarie B. & Robert C. McKinstry III, M.D., Ph.D.
Jocelyn H. Medina, M.D.
Stephen B. Meisel, M.D.
Paul Mogannam, M.D.
Seyed-Ali Mousavi, M.D.
Serena & Philip E. Neely, M.D.
Richard A. Ofstein, M.D.
Pedro B. Oliveira, M.D.
Kingsley A. Orraca-Tetteh, M.D.
Stanley L. Parker, M.D.
Divyesh G. Patel, M.D.
Bansari Y. & Yashwant D. Patel, M.D.
Roger T. Pezzuti, M.D.
William F. Pfisterer, D.D.S., M.D.
Norman O. Polk, M.D.
Ronald B. Port, M.D.
Erick M. Remer, M.D.
Roland Rhynus, R.T.(R.)(M.R.)
In memory of Frances B. Toomey, M.D.
Elizabeth S. Burnside, M.D., M.P.H. & Patrick Rollins
Werner Rosshirt, M.D.
Gregory K. Russo, M.D.
Rafia S. Saleem, M.D.
Barbara & Lloyd B. Schnuck Jr., M.D.
Denine & Bryan E. Scott, M.D.

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

Horace W. Scott, M.D.
In memory of Henry P. Pendergrass, M.D.
Ichiro Shirouzu, M.D.
MaryAnn & Frank J. Simone, M.D.
Tanya W. Stephens, M.D.
Margaret A. Stull, M.D. & Gregory J. Stull
Nisha M. & Bijoy J. Thomas, M.D.
Desencia E. Thomas, M.D.
Joseph R. Thompson, M.D.
Kitt Shaffer, M.D., Ph.D. & Timothy Titcomb
Gregorio M. Tolentino, M.D.
Ina L. Tonkin, M.D. & Allen K. Tonkin, M.D.
Amabel & Eric Tsao, M.D.
Bonita C. & David A. Turner, M.D.
Marjorie C. & Francis X. Van Houten, M.D.
Patricia & Richard I. Vigran, M.D.
Milton L. Wagner, M.D.
Darlene & James C. Walker Jr., M.D.
Irwin D. Weisman, M.D.
In memory of Markham J. Fischer, M.D.
Polly & Gregg A. Wells, M.D.
John M. Wessinger, M.D.
Terry D. Yeager, M.D.
Hajime Yokota, M.D.
Ghislaine & Albert Zilkha, M.D.
In honor of Luther W. Brady Jr., M.D.

Journal Highlights

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

Imaging patients with acute abdominal pain

BECAUSE acute abdominal pain may be caused by myriad diagnoses, the added value of imaging after clinical evaluation—particularly its effect on diagnostic accuracy and certainty and patient treatment—is important. Except in patients suspected of having cholecystitis, CT can be considered the primary imaging technique for the diagnosis of acute abdominal pain.

Radiology

In a review article published in the October issue of *Radiology (RSNA.org/Radiology)*, Jaap Stoker, M.D., of the Academic Medical Center at the University of Amsterdam in the Netherlands, and colleagues discuss the role of ultrasound, CT and MR imaging in adults presenting in the emergency department with acute abdominal pain. Authors also address other frequently encountered urgent diagnoses:

- Acute appendicitis
- Acute diverticulitis
- Acute cholecystitis
- Bowel obstruction
- Perforated viscus
- Bowel ischemia

Coronal contrast-enhanced reformatted CT image in 28-year-old man clinically suspected of having appendicitis shows inflamed appendix *(straight arrow)*. Inflammation is more pronounced at the appendiceal tip, and discontinuity of the appendiceal wall is suggested. Small amounts of fluid *(curved arrow)* adjacent to the appendix are present. Adjacent fat inflammation *(arrowheads)* is more pronounced at the appendiceal tip. Surgery and histopathologic analysis results proved the presence of perforated retrocecal appendicitis.

"Because ultrasound and CT are widely available, radiography is rarely indicated for the examination of patients with acute abdominal pain, with the exception of select patients groups—for example, patients with bowel obstruction," the authors conclude. "CT is an effective examination with results that have a positive effect on the treatment of many patients with acute abdominal pain."

This article is accompanied by a "How I Do It" video that can be downloaded at *Radiology.RSNA.org/site/video/index.xhtml*.

Use of 3.0T MR Imaging for Evaluation of the Abdomen

ALTHOUGH it has some noteworthy technical limitations, 3.0T MR imaging is uniquely beneficial for evaluating the abdomen, especially for applications such as enhanced and nonenhanced hepatic imaging, diffusion-weighted imaging, angiography, MR pancreatography and colonography.

In an article in the October special issue of *RadioGraphics (RSNA.org/RadioGraphics)*, Sukru Mehmet Erturk, M.D., from the Sisli Etfal Training and Research Hospital in Istanbul, Turkey, and colleagues discuss and illustrate the technical

RadioGraphics

Continued on Page 38

High-resolution Maximum Intensity Projection image from 3.0T abdominal MR angiographic data obtained in a 53-year-old woman with a suspected renal mass in the right kidney provides excellent SNR and vascular detail. The image was acquired during a single 19-second breath hold using parallel imaging techniques (acceleration factor R = 3). Note the contrast material in the collecting system of the kidney, which is from a previous test bolus that was injected to determine the exact delay of the arterial phase for the subsequent MR angiogram of the abdominal vessels.

Radiology in Public Focus

A press release has been sent to the medical news media for the following articles appearing in the October print issue of *Radiology* and published ahead of time at *RSNA.org/Radiology.*

Treatment of Wide-necked Intracranial Aneurysms by Neuroform Stent-assisted Coil Embolization during Acute (<72 hours) Subarachnoid Hemorrhage: Experience of 61 Consecutive Patients

FOR RUPTURED wide-necked intracranial aneurysms that are difficult to treat by surgical ligation or balloon-assisted embolization, stent-assisted coil embolization may be a feasible alternative, researchers have found.

Olli I. Tähtinen, M.D., of the Department of Diagnostic Radiology at Tampere University Hospital in Finland, and colleagues evaluated the results in 61 patients treated with stent-assisted coil embolization. "Statistical analysis was performed to determine whether the features of the patient and the ruptured aneurysm had an impact on the primary angiographic result or on the clinical outcome of the patient," the researchers explained.

Preoperative digital subtraction angiographic (DSA) three-dimensional reformation of wide-necked basilar tip aneurysm. Note the secondary pouch of the aneurysm. DSA images obtained during and after the procedure show that a 3 × 15 mm Neuroform stent has been deployed across the neck of the aneurysm from the basilar artery to the left P1 segment and that the aneurysm is almost completely occluded with Matrix coils. Only a very small neck remnant is seen in the left margin of the aneurysm. Balloon-assisted embolization would have been an alternative treatment method in this case.

(*Radiology* 2009;253:199-208)

After a mean follow-up of 12.1 months, Dr. Tähtinen and colleagues found the procedure's technical success rate was 72 percent, with a technique-related complication rate of 21 percent. "There was only one case of rebleeding," the researchers wrote, "and clinical outcome was good for the majority of the patients—69 percent had Glasgow Outcome Scores of 4–5 at the end of the study period."

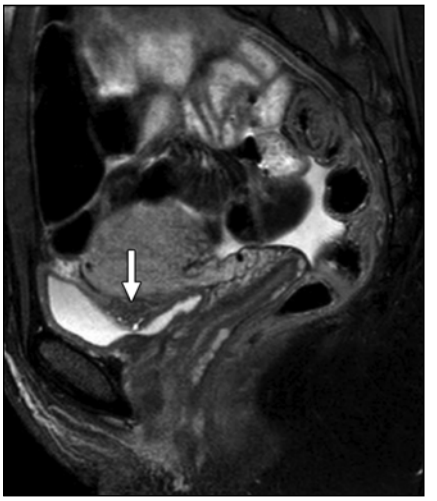
"Ruptured wide-necked intracranial aneurysms may be treated by stent-assisted embolization during acute subarachnoid hemorrhage if additional support or remodeling of the aneurysm neck is required," the researchers added. "The risk of subsequent rerupture of the aneurysm seems to be reduced compared to nonsecured aneurysm by early treatment."

Contribution of 3T Pelvic MRI in the Preoperative Assessment of Endometriosis: Initial Results

COMPARED TO surgery and pathology, 3T MR imaging enables precise mapping and accurate diagnosis of deep endometriosis, researchers have found.

In a study of 41 patients, Nathalie Hottat, M.D., of the Department of Radiology at Université Libre de Bruxelles' Erasme Hospital in Brussels, Belgium, and colleagues found that 3T MR demonstrated 96.3 percent sensitivity and 100 percent specificity for diagnosing deep endometriosis. 3T MR provided high-resolution images that accurately depicted all locations of deep endometriosis,

Continued on next page



Sagittal fat-suppressed TSE T2-weighted MR images (3,835/48) in 37-year-old woman show normal appearance of the uterus, Douglas pouch, and vesicouterine pouch and deep endometriosis of the vesicouterine pouch infiltrating the bladder wall *(arrow).*

(*Radiology* 2009;253:126-134)

Media Coverage of *Radiology*

In August, media outlets carried 240 news stories generated by articles appearing in the print and online editions of *Radiology*. These stories reached an estimated 161 million people.

A news release promoted findings from a study on stent-assisted embolization of ruptured wide-necked intracranial aneurysms *(Radiology 2009; 10.1148/radiol.2531081923).* (See article on previous page).

August coverage included WXYZ-TV (Detroit), Reuters, UPI, *Nashville Pride, Afro-American Times* (New York), *Bottom Line/Health, Louisiana Weekly* (New Orleans), *Radiology Today, Tri-Cities Area Journal of Business* (Kennewick, Wash.), *Columbus Communicator* (Ohio), *Ozaukee County News Graphic* (Milwaukee), Yahoo! News, Science Daily, Red Orbit, Discovery Health, Healthscout, AHealthyMe!, *abcnews.com* and *healthcentral.com.*

October Public Information Activities Focus on Breast Cancer Awareness

To highlight National Breast Cancer Awareness Month in October, RSNA will distribute public service announcements (PSAs) focusing on the importance of regular screening mammograms.

In addition, RSNA will distribute the "60-Second Checkup" radio program focusing on mammography screening/imaging and MR imaging as a supplement to mammography.

Use of 3.0T MR Imaging for Evaluation of the Abdomen

Continued from Page 36

basis, advantages and limitations and main clinical applications of 3.0T MR imaging, particularly in the abdomen. Authors specifically address:

- Tissue relaxation times and signal-to-noise ratio (SNR)
- Basic contrast and general guidelines
- Advanced pulse sequences and clinical applications
- Limitations and common artifacts
- Safety issues

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

"The higher SNR and spatial resolution of 3.0 T imagers may be used to improve the quality of abdominal MR imaging and clinical diagnosis. However, it should be noted that abdominal MR imaging at 3.0T is still in the early stages, and substantial modifications in the pulse sequences and hardware components are needed," authors concluded. "The ability to obtain physiologic and functional information within reasonable acquisition times makes the future bright for 3.0T abdominal MR imaging."

Contribution of 3T Pelvic MRI in the Preoperative Assessment of Endometriosis: Initial Results

Continued from Page 37

including thin anatomical structures like utero-sacral ligaments and colon wall, providing excellent preoperative assessment, Dr. Hottat and colleagues noted.

"The assessment of endometriosis may be laborious for the patient who has undergone multiple examinations as transvaginal ultrasound, transrectal ultrasound, barium enema, cytoscopy and rectoscopy," the researchers explained. "In patients with a clinical suspicion of endometriosis, a complete noninvasive preoperative assessment can be obtained at 3T MR imaging with an excellent accuracy and without any contrast material administration."

For more information on the study by Nathalie Hottat, M.D., and colleagues, read the RSNA News *feature, "MR Imaging Accurately Depicts Deep Endometriosis," on Page 6.*

Working For You

Radiology Legacy Collection Offers Invaluable Historical Resource for Every Library

Scheduled to appear online in spring 2010, the *Radiology* Legacy Collection is a searchable archive of *Radiology* issues spanning 1923 to 1998. Available for the first time online, the Collection will be accessible exclusively to subscribers.

"The Legacy Collection will provide enhanced access for readers and researchers to the literature that has appeared in *Radiology* over the years and shaped the field as we know it," said Herbert Y., Kressel, M.D., *Radiology* editor.

The Collection will be accessible free of charge to RSNA members. For institutional subscribers, RSNA is offering limited-time discounts. Members can help spread the word and ensure future researchers have access to the Collection by encouraging their librarians to purchase it. To make it easier for members to contact their librarians, RSNA provides a recommendation form, downloadable directly at *www.RSNA.org/Publications/upload/LegacyLibraryRecForm.pdf*.

"It has been difficult to access many of the seminal papers on newer technologies including CT, ultrasound and PET, which were published prior to 1998, as well as original descriptive research that formed the basis of radiologic interpretation," said Dr. Kressel. "Some of these were critical to the development of the field and anticipated the development of these technologies and their applications."

RSNA is converting the Legacy Collection to a digital format, taking care to preserve quality by scanning each image individually. The Collection includes approximately 103,260 pages containing 73,331 articles and abstracts and featuring 86,618 historic images.

"I am personally delighted that this fine heritage of material that has allowed *Radiology* to be named one of the top 100 biomedical journals over the past 100 years will be available to subscribers at their desktops," Dr. Kressel said.

More information about the Collection, including subscription rates, a blog detailing its progress and library recommendation forms, is available at *RSNA.org/Legacy*.

NEW Online Educational Offerings on InteractED®

Several new Refresher Course programs from RSNA 2008 are now available online for *AMA PRA Category 1 Credits*™ as an RSNA member benefit:

- Categorical Course in Diagnostic Radiology: Imaging of Cardiac Physiology—MR Imaging
- CTA and MRA in Vascular Intervention: Treatment of Occlusive Disease
- Quality Control in PACS: Image Quality Process, Data Integrity and Putting Display QC into Practice
- Pediatric PICC: How to Establish and Run the Service
- Update Course in Diagnostic Radiology: Clinical PET and PET/CT Imaging—Lymphoma, Melanoma and Sarcomas
- Sinonasal Infection and Chronic Inflammatory Disease
- Endocrine Neoplasia: A Radiologic-Pathologic Review
- Imaging Before and After Aortic Stent-Grafting: Current Recommendations
- Imaging of Focal Liver Lesions: Techniques for CT and MR Imaging, Noncirrhotic Liver and Cirrhotic Liver
- PET Imaging Protocols and Normal Anatomy/Variants

RSNA Education

To view these new programs, visit *RSNA.org/education*. For additional information on other available products, contact the Education Center at 1-800-381-6660 x3753 or 1-800-272-2920.

Program and Grant Announcements

NIH Grantsmanship Workshop

November 28 • McCormick Place, Chicago

RSNA will hold a National Institutes of Health (NIH) Grantsmanship Workshop on Saturday, November 28, from 1:30 to 5:30 p.m. at McCormick Place Chicago. The workshop covers grantsmanship techniques from concept development to submission, as well as the NIH review process. There is also an opportunity to experience a mock study section. Speakers will address the entire NIH grant application experience, including basic applications as well as K grants. Register online at *RSNA2009.RSNA.org.* There is a $35 registration fee.

FACILITATED BY: **Robert J Nordstrom, Ph.D.,** Cancer Imaging Program, National Cancer Institute, National Institutes of Health

SPEAKERS: **Ruth Carlos, M.D., M.S.,** University of Michigan, **Elizabeth Burnside, M.D., M.P.H.,** University of Wisconsin, **Mitch Schnall, M.D., Ph.D.,** University of Pennsylvania, **William Heetderks, Ph.D., M.D.,** NIH/National Institute of Biomedical Imaging and Bioengineering

Writing a Competitive Grant Proposal

January 29-30, 2010 • RSNA Headquarters, Oak Brook, Ill. • Registration Deadline—December 15

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

A limited number of slots are available for this 1½-day intermediate-level program that combines didactic and small group interactive sessions designed to help radiologic researchers understand and apply the key components of writing a competitive grant proposal. Topics include the NIH grant review process, developing specific aims and funding opportunities.

Guided by a faculty of leading researchers with extensive experience in all aspects of grant applications and funding, the program will focus on developing realistic expectations and provide tools for getting started. Faculty includes G. Scott Gazelle, M.D., Ph.D., M.P.H., of Massachusetts General Hospital in Boston, King C. Li, M.D., M.B.A., of Methodist Hospital in Houston, Robert Nordstrom, Ph.D., of the National Cancer Institute in Bethesda, Md., Ruth Carlos, M.D., M.S., of the University of Michigan Health System in Ann Arbor and Elizabeth Burnside, M.D., M.P.H., of the University of Wisconsin in Madison.

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

2010 R&E Grant Applications Start Soon

RSNA Membership Now Required

Applicants for R&E research and education grants can begin preparing their applications starting this month. Applicants for 2010 R&E grants are now required to be RSNA members (at any level) at the time of application.

Application deadlines are:

- **January 10:** Education Grants
- **January 15:** Research Grants
- **February 1:** Medical Student Grant

For more information on all Foundation grant and recognition programs, including current and past grant projects, go to *RSNA.org/Foundation* or contact Scott Walter, M.S., assistant Director, grant administration at 1-630-571-7816 or *swalter@rsna.org.*

New Days for Financial Seminars at RSNA 2009

Two investment seminars will be offered at RSNA 2009. "Effective Real Estate Investment Strategies," will be presented by J. Michael Moody, M.B.A., on Saturday, Nov. 28, and "Asset Protection and Retirement Planning in the New (Stimulus?) Era," will be presented by Barry Rubenstein, B.S., J.D., L.L.M., on Monday, Nov. 30. This year's new two-day format offers attendees more flexibility.

In challenging financial times, these simple and direct educational seminars specifically tailored for the medical professional will provide attendees with the tools necessary to achieve real estate and investment goals.

Register now at *RSNA.org/register* or use the Registration and Housing Form 1 included in the Advance Registration, Housing and Course Enrollment Brochure. Additional fees apply for these seminars so you must be registered for the annual meeting to sign up. These seminars do not qualify for *AMA PRA Category 1 Credit™.*

For more information, contact the RSNA Education Center at 1-800-381-6660, x7772 or e-mail *edctr@rsna.org.*

News about RSNA 2009

Final Advance Registration

North Americans who register for RSNA 2009 by November 6 will have their registration materials mailed to them in advance of the annual meeting. International attendees will have their materials mailed to them if their registration is completed by October 23. Registration will be accepted after these dates but will be processed at the increased onsite rate and attendees must obtain badges, tickets and other conference materials at the McCormick Place Convention Center.

RSNA 2009
Quality Counts
November 29–December 4, 2009
McCormick Place, Chicago

Housing

The deadline for housing reservations and changes through RSNA is **November 6.** After that date, you can contact the hotel directly. For more specific information, go to *RSNA.org/register.*

United Airlines Discount

United.com offers a 5 percent discount on select United Airlines and United Express qualifying flights. Use promotional code 553SB to check schedules, make reservations or learn about ticketing information at *United.com.*

The Star Alliance™ Members Airlines have been appointed as the Official Airline Network for RSNA 2009. To obtain the Star Alliance Conventions Plus discounts, please call the reservation office of a participating Star Alliance Member Airline and quote the following Convention Code: UA11S09. Registered participants plus one accompanying person travelling to the event are automatically granted a discount of up to 20 percent, depending on fare and class of travel booked.

Onsite Registration

Those who need to register onsite should proceed to Professional Registration in the Lakeside Center Ballroom.

Hours of Operation

Saturday, November 28	12:00 p.m. – 6:00 p.m.
Sunday, November 29 – Thursday, December 3	7:30 a.m. – 5:00 p.m.
Friday, December 4	7:30 a.m. – 12:00 p.m.

For more information about registering for RSNA 2009, visit *RSNA2009.RSNA.org,* e-mail *reginfo@rsna.org* or call 1-800-381-6660 x7862.

Registering for RSNA 2009

There are four ways to register for RSNA 2009:

❶ Internet—Fastest way to register!
Go to *RSNA.org/register*

❷ Fax (24 hours)
1-800-521-6017
1-847-996-5401

❸ Telephone
(Monday–Friday, 8:00 a.m.–5:00 p.m. CT)
1-800-650-7018
1-847-996-5876

❹ Mail
Experient/RSNA 2009
568 Atrium Dr.
Vernon Hills, IL 60061
USA

Important dates for RSNA 2009

October 23	International deadline to have full-conference materials mailed in advance
November 6	Final discounted advance registration, housing and course enrollment deadline, to have full-conference materials mailed in advance
Nov. 29 – Dec. 4	RSNA 95th Scientific Assembly and Annual Meeting

Register by Nov. 6 to receive the discounted registration fee and full conference materials mailed to you in advance. International visitors must register by Oct. 23 to receive these materials in advance. Registrations received after Nov. 6 will be processed at the increased fee and conference materials must be obtained at the McCormick Place Convention Center. No hotel reservations will be accepted after Nov. 6.

Registration Fees

BY 11/6	ONSITE	
$0	$100	RSNA/AAPM Member
$0	$0	RSNA/AAPM Member Presenter
$0	$0	RSNA Member-in-Training, RSNA Student Member and Non-Member Student
$0	$0	Non-Member Presenter
$150	$250	Non-Member Resident/Trainee
$150	$250	Radiology Support Personnel
$680	$780	Non-Member Radiologist, Physicist or Physician
$680	$780	Hospital or Facility Executive, Commercial Research and Development Personnel, Healthcare Consultant and Industry Personnel
$300	$300	One-day registration to view only the Technical Exhibits

Navigating RSNA 2009

RSNA 2009 publications, procedures and features help attendees make the most out of the annual meeting.

Name Badge

A name badge is required to attend RSNA courses or events or to enter the exhibit halls.

ExpoCard™

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

Pocket Guide

The RSNA 2009 *Pocket Guide* is an important, easy-to-use reference guide with two main sections:

Overview of RSNA 2009

- Complete A-Z listing of everything available to attendees
- Room assignments for all courses and events
- Floor plans of each building and each floor of McCormick Place

Traveling to and from McCormick Place

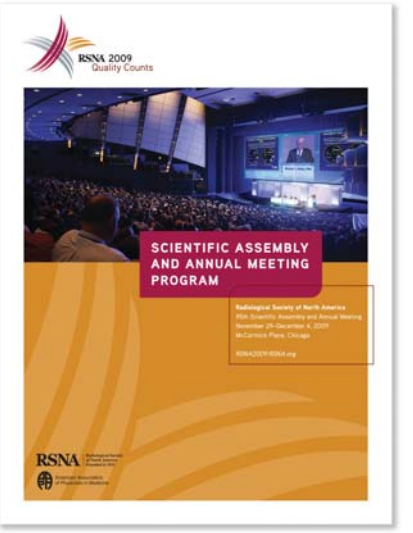
- Shuttle bus schedules, routes and boarding locations
- Taxi fees and loading and unloading areas
- Airport transportation service with times, costs and boarding information
- Complete Metra Electric Line Train System schedule outlining station locations, times and drop-off destinations
- Parking lot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

NAME BADGE

EXPO CARD


MEETING BAG

POCKET GUIDE



RSNA MEETING PROGRAM

Transportation information is also available online. Go to *RSNA2009.RSNA.org* and click Transportation.

RSNA Meeting Program, Official Meeting Bag and Lanyard

One complimentary copy of the *RSNA Meeting Program,* official meeting bag and lanyard are available with the presentation of a voucher at the distribution counters located in the Lakeside Center, Level 3, or South Building, Level 2, Gate 3. Additional copies of the *Meeting Program* will be available for purchase at the Education Store.

The *RSNA Meeting Program* is also available at *RSNA2009.RSNA.org.* The online version makes it quick and easy to search and customize your schedule at RSNA 2009. The program will be available online in early October and will remain online after the meeting.

Daily Bulletin

The *Daily Bulletin* is the official newspaper of the RSNA annual meeting. Featuring overnight news from the meeting, the newspaper can be found in bins throughout McComrick Place. Each day's edition will also be available online at *RSNA.org/bulletin,* and a link will be e-mailed to RSNA members.

Each day's *Daily Bulletin* also includes a New Products & Services section, to alert attendees to some of the newest radiologic technology and services being demonstrated by technical exhibitors during the annual meeting.

Meeting Guide

The RSNA 2009 *Meeting Guide* features floor maps of McCormick Place, various program and transportation schedules, and a comprehensive listing of the technical exhibitors, along with company contact information and booth

DAILY BULLETIN

MEETING GUIDE

number. The *Meeting Guide* will be available in bins adjacent to the *Daily Bulletin*.

Transportation

RSNA offers complimentary shuttle bus service to and from McCormick Place. A dedicated bus lane makes the trip quick and easy, even during rush hour. Routes servicing 40 hotels in the RSNA block use the dedicated lane. Check signs in the hotel lobby and at McCormick Place Convention Center for exact pick-up and drop off locations.

Ride the Metra Electric Train for free using the Metra ticket located in your registration wallet. Trains run from downtown Chicago stations (Millennium Station, Van Buren Street and Roosevelt Road) to the McCormick Place Convention Center Station in just seven minutes. Stations are located within walking distance of many hotels. The ticket must be shown to the conductor when requested.

For more information about shuttle bus service and Metra, including the arrival and departure schedules, go to *RSNA2009.RSNA.org* and click Transportation.

Services for International Attendees

- **Certificate of Attendance**—Use the computers in the Internet Zones to print a personalized certificate of attendance.
- **Foreign Currency Exchange Services**—Exchange foreign currency and cash foreign or U.S. denominated traveler's checks. Located in the Business Center on the Grand Concourse – Level 2.5, inside FedEx Kinko's.
- **Interpretation Services**—International attendees will be assisted at the Help Centers and at Professional Registration with their conference questions in the following languages: Chinese, Dutch, French, German, Italian, Japanese and Spanish.
- **Travel Services**—ESA Voyages, the official international travel provider at RSNA 2009, will be available at the Help Center (Grand Concourse, Level 3) and at Professional Registration (Lakeside Center Ballroom) to assist with questions.

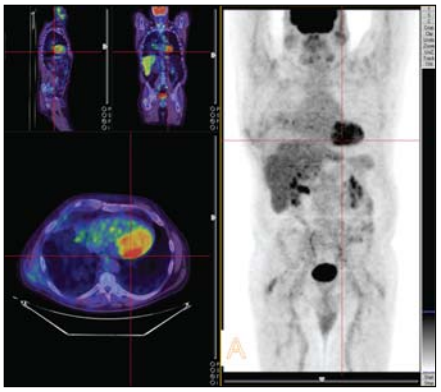
Product News

NEW PRODUCT

Prostate MR Biopsy Planning/Analysis

MR technology provider Invivo *(www.invivocorp.com)* has introduced an MR prostate package for analysis, planning and interventional biopsy.

The package combines Invivo's DynaCAD for Prostate advanced visualization system and its new DynaTRIM transrectal MR-guided interventional application. DynaCAD for Prostate provides increased operational efficiency enabling the radiologist to rapidly interpret the 3,000 images that constitute a dynamic contrast-enhanced prostate MR examination.



FDA CLEARANCE

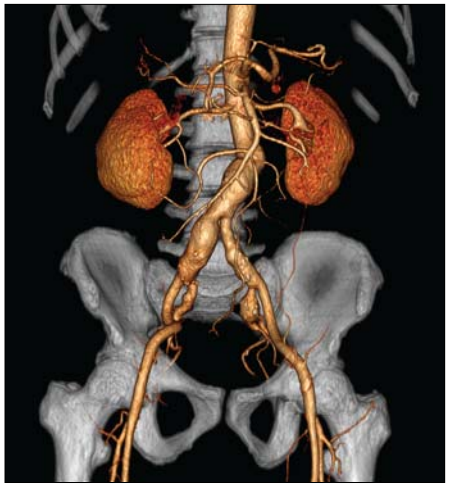
PACS Software Enhancement

Intelerad Medical Systems *(www.intelerad.com)* has received FDA clearance to market and distribute its PET/CT Image Fusion. Image Fusion functionality can now be sold as a fully integrated module within Intelerad's IntelePACS® solution.

The PET/CT Image Fusion module is integrated within the InteleViewer™ viewing software, enabling radiologists to view fused images from any IntelePACS workstation using variable opacity, independent color maps, multiplanar reformatting and maximum intensity projection. Clinicians also have access to specific PET/CT statistics such as standard uptake values and volume measurements.

NEW PRODUCT

Volumetric Image Visualization and Sharing



Vital Images *(www.vitalimages.com)* introduces Vitrea Enterprise Suite, which combines the company's 2D, 3D and 4D clinical applications and services with a centralized solution for managing volumetric image data across the medical enterprise.

Users can select deployment options to meet the unique needs of their clinical environments—via Web browser, as a standalone workstation, integrated into a PACS or via an electronic medical records (EMR) or hospital information management system.

Vitrea Enterprise Suite also includes the Vital Images' support, education and integration and implementation consulting services.

NEW PRODUCT

Computed Radiography Cassette

Carestream Health, Inc. *(www.carestreamhealth.com)* has introduced a CR cassette with an embedded anti-scatter grid that eliminates the need to remove an exterior grid prior to scanning and replace the grid for the next exam. The cassette can be used when exterior grids impede patient positioning, such as during portable chest exams and trauma exams of the spine, hip or pelvis. The grid runs horizontally and is consistent with current cassette orientation for portable chest X-rays. It can be used with DIRECTVIEW Classic and Elite CR Systems and with DIRECTVIEW CR 825/850/950/975 systems with version 4.5 software or higher.

RSNA News

Information for *Product News* came from the manufacturers. Inclusion in this publication should not be construed as a product endorsement by RSNA. To submit product news, send your information and a non-returnable color photo to *RSNA News*, 820 Jorie Blvd., Oak Brook, IL 60523 or by e-mail to *rsnanews@rsna.org.* Information may be edited for purposes of clarity and space.

RSNA.org

Access RSNA's Quality Improvement Tool Box

TO TAKE ADVANTAGE OF the comprehensive compendium of tools compiled by RSNA's Quality Improvement Committee to help members meet practice improvement requirements, go to the Quality Improvement Page at *RSNA.org/Quality.*

Once there, click Tools on the left-hand side and then choose from the following list.

Brainstorming: Users are given the steps needed to create a brainstorming session or organized process for generating a list of ideas about an issue or process. Sessions can often last several hours.

Cause & Effect Diagram: Sometimes referred to as a Fishbone Diagram, this tool is used to categorize and organize ideas about contributing factors and their relationships within a process.

Flowchart: Users can learn to create this design or map illustrating the steps and decision points that make up a work process enabling the team to examine individual steps and identify problems and improvement opportunities.

Multivoting: Usually following a brainstorming session, this simple, structured approach for selecting the most significant or highest priority item from a list relies on popular opinion and is a method of prioritizing projects or elements of projects.

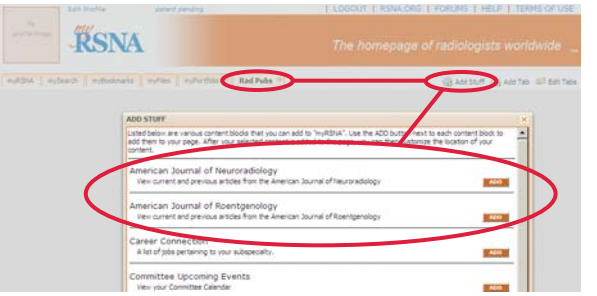
Nominal Group Technique: This method for generating a list of ideas and/or condensing ideas into a manageable number is more formal and structured than brainstorming or multivoting.

Prioritization Matrix: Teams can use this tool to achieve consensus about an issue by helping to rank problems or issues by particular criteria important to the organization.

This quality improvement tool box also provides links to resources that provide examples or templates of tools used in quality improvement including the Institute for Healthcare Improvement *(www.ihi.org/IHI/Topics/Improvement/ImprovementMethods)*, Center for Evidence-Based Medicine *(www.cebm.net)* and Quality Tools & Definitions *(www.syque.com/quality_tools).*

Create a Custom Tab for Radiology Publications

RSNA offers widgets for the *American Journal of Neuroradiology* and *American Journal of Roentgenology*. To create a custom tab to keep the journals in one place on your desktop, first remove any publication widgets from your myRSNA® main page at *myRSNA.org*. Then, select Add Tab on the upper right-hand corner, choose Dashboard, give the tab a name and click Add Tab. With the new tab up, click Add Stuff and select widgets for the desired publications. Your new tab will keep your publications in one place.



Sample Chicago's Full Menu of Dining Options During RSNA 2009

TAKE TIME after busy days at McCormick Place to sample Chicago's widely varied restaurants. Additional information about Chicago and its many attractions is available from the Chicago Convention and Tourism Bureau Web site at *www.meetinchicago.com/RSNA.*

NEW—Indicates a restaurant appearing on the RSNA list for the first time.

312 CHICAGO
136 N. LaSalle; 1-312-696-2420
Situated in the heart of the Loop Theater District, the inviting and sophisticated 312 Chicago offers an Italian-influenced American menu with specialties such as artichoke and provolone tortellini and old standards. *Expensive*

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; 1-312-944-7676
This Omni Chicago Hotel restaurant overlooks the Magnificent Mile and boasts a moonscape mural on the ceiling. Menu highlights include flatbreads, a raw bar and "charcuterie," a selection of antipasti meats. *Expensive*

AJASTEAK
660 N. State; 1-312-202-6050
Kobe and Wagyu beef, wasabi-buttered steaks, an extensive sake list and a sushi bar set this fashionable Japanese steakhouse apart. Located in the Dana Hotel and Spa, ajasteak is enhanced by a two-story glass wall and two fireplaces. *Expensive*

ALINEA
1723 N. Halsted; 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*

A MANO
335 N. Dearborn; 1-312-629-3500
The wine list in this contemporary restaurant showcases small producers, ancient grape varietals and organic options, while the Italian menu includes handcrafted pastas, salumi, antipasti and wood-fired pizzas. Don't forget to finish with the homemade gelato. *Moderate*

ARIA
200 N. Columbus; 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, with no menu. *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 French style. Some fish are boned tableside, adding to the drama. *Very Expensive*

BEN PAO
52 W. Illinois; 1-312-222-1888
Artistically lit black slate and red accents are juxtaposed with cascading water and still pools in this elegant Asian restaurant. Vegetarians will delight in the menu, which also features seafood, duck, beef and chicken. *Moderate*

BIG JONES
5347 N. Clark; 1-773-275-5725
Coastal southern-style fare is served in Andersonville under high ceilings and iron chandeliers that recall the South. Look for alligator sausage with jalapenos and sweet and spicy baby back ribs along with subtle southern touches like orange blossom butter. *Moderate*

BLACKBIRD
619 W. Randolph; 1-312-715-0708
This trendy hot spot serves contemporary American cuisine with seasonal emphasis. *Expensive*

BOKA
1729 N. Halsted; 1-312-337-6070
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 and add an entrée such as steak or pan-seared grouper. *Expensive*

BRASSERIE JO
59 W. Hubbard; 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*

NEW THE BRISTOL
2152 N. Damen Ave; 1-773-862-5555
Duck fat fries and monkey bread may not be haute and healthy cuisine, but they are mainstays on the innovative menu at this casual Bucktown spot. Daily and monthly menus feature a variety of local ingredients ranging from shareable appetizers to full size entrees. *Inexpensive*

C-HOUSE
166 E. Superior; 1-312-523-0923
Marcus Samuelsson's Chicago endeavor emphasizes seafood and raw bar selections, but there are still trusty steak and chop entrees. The modern room's exposed wine cellar separates C-House from the lobby of the Affinia Chicago Hotel. *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, sangria and tapas. *Inexpensive*

CAFÉ BIONDA
1924 S. State; 1-312-326-9800
Thick noodle Italian with traditional salumi, or cold cuts, is popular here. One half of this South Loop spot is an elegant room with the warm wood tones and original art while the other half offers a more casual sports bar. *Moderate*

CALITERRA
633 N. St. Clair; 1-312-274-4444
California meets Italy in this restaurant tucked away in the Wyndham Chicago Hotel. Views include the city and the open kitchen, where activity revolves around 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
In the dark wood and leather interior, complete with oil paintings, waiters in white aprons offer robust wines, oversize steaks and side orders as large as entrées. This restaurant is one for a hearty appetite. *Expensive*

CARNIVAL
702 W. Fulton Market; 1-312-850-5005
Attention-grabbing décor, music and menu all contribute to a festive ambiance. Enjoy ceviches along with heartier fish and meat creations from Brazil, Colombia, Cuba and Puerto Rico. *Expensive*

CHAISE LOUNGE
1840 W. North; 1-773-342-1840
Pastels, mirrors, sheer curtains and candles contribute to romance. A seasonal, eclectic American menu includes both the expected, like pan-seared snapper as well as the surprising, such as chicken under a brick. *Moderate*

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 restaurant features 1,400 photos of musicians, gangsters and every Chicago mayor. *Expensive*

CHICAGO FIREHOUSE RESTAURANT
1401 S. Michigan; 1-312-786-1401
At this restaurant housed in a turn-of-the-century firehouse, complete with the original fire poles, escargot and vegetable strudel share the appetizer menu. Casual or formal dining is available and wines are mostly American. *Expensive*

CHINA GRILL
230 N. Michigan; 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; 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. *Moderate*

CITÉ
Lake Point Tower, 505 N. Lake Shore; 1-312-644-4050
From the rooftop of Lake Point Tower, experience Chicago's sophisticated side. Offering French/Italian fare, Cité 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*

CUATRO
2030 S. Wabash; 1-312-842-8856
Hidden behind an eight-foot tall saltwater aquarium, Cuatro's kitchen pumps out dishes emphasizing seafood and Caribbean and Latin American preparations. A Latin jazz Sunday brunch is popular with the locals. *Moderate*

CUSTOM HOUSE
500 S. Dearborn; 1-312-523-0200
The name of this Printers Row restaurant inside Hotel Blake comes from the Custom House Levee District, former home of bordellos, gambling parlors and saloons. The focus is on steak and local farm-raised foods. *Expensive*

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*

DAVID BURKE'S PRIMEHOUSE
616 N. Rush; 1-312-660-6000
At this ultramodern steakhouse, dry-aged steaks are displayed in a special temperature and humidity controlled salt cave. Appetizers such as angry lobster share the menu with unreasonably large steaks. *Expensive*

DECERO
814 W. Randolph; 1-312-455-8114
This lively restaurant on Randolph Street restaurant row offers regional Mexican specialties in a stylized Roadhouse décor. Creative tacos featuring braised duck and sautéed salmon are excellent for sharing. *Moderate*

DEVON SEAFOOD GRILL
39 E. Chicago; 1-312-440-8660
Here, Michigan Avenue shoppers get a break from seemingly mandatory department store restaurant lunches and North Michigan Avenue hotel guests get a break from hotel bars. A wraparound bar is a local favorite. *Moderate*

DUCHAMP
2118 N. Damen; 1-773-235-6434
Following Chicago's popular trend of large and small plate menus, these dishes offer interesting American cooking with international flair. Please note that communal tables are used for seating. *Moderate*

NEW EVE
840 N. Wabash Avenue; 1-312-266-3383
This upscale Gold Coast newcomer maintains a casual but sophisticated ambiance and offers a modern menu with a signature dish of grilled lobster sausage with chanterelles, bacon and maple bechamel. *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. *Very Expensive*

FOLLIA
953 W. Fulton; 1-312-243-2888
Food and fashion unite at this Italian restaurant serving timeless Italian risottos, pastas and entrées cooked to order. Mannequins in the windows wear haute couture designed by local students and are available for purchase. *Moderate*

FRANCESCA'S FORNO
1576 N. Milwaukee; 1-773-770-0184
At this triangular restaurant, floor-to-ceiling windows overlook the busy six-point intersection defining the Wicker Park neighborhood. Francesca restaurants are known for delicious pasta and long waits for tables. *Expensive*

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

THE GAGE
24 S. Michigan; 1-312-372-4243
Housed in a 1930s hat factory across from Millennium Park, The Gage enjoys an atmosphere created by brass, leather and subway tile. Comfort food is paired with 30 bottled beers and interesting small-batch whiskeys. *Moderate*

GENE & GEORGETTI
500 N. Franklin; 1-312-527-3718
Thoroughly lacking in pretension, this classic steakhouse offers ungarnished 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*

GIOCO
1312 S. Wabash; 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. *Moderate*

GRAHAM ELLIOT
217 W. Huron; 1-312-624-9975
Graham Elliot Bowels left his throne at the nearby Peninsula Hotel's Avenues restaurant to open this warehouse space in River North. He makes haute cuisine accessible by providing paper menus and removing tablecloths and tuxedoed waiters. *Expensive*

GRILLROOM CHOPHOUSE AND WINE BAR
33 W. Monroe; 1-312-960-0000
The specialty at this Loop/Theater District steakhouse is wet-aged certified angus beef. Location and 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 and seafood in a clubby leather-bound atmosphere. A pianist plays nightly in the lounge. *Expensive*

GREEN ZEBRA
1460 W. Chicago; 1-312-243-7100
Vegetarians rarely have much choice in fine dining but Green Zebra has turned the tables, offering upscale vegetarian dishes in a fine dining setting. Carnivores will often find chicken and fish on the menu. *Expensive*

NEW THE GROCERY BISTRO
804 W. Washington; 1-312-850-9291
This innovative restaurant presents a seasonal menu of shared plates with hand-picked ingredients from all local food sources. BYOB. Reservations recommended. *Inexpensive*

HABANA LIBRE
1440 W. Chicago; 1-312-243-3303
This real Cuban food may be worth practicing some Spanish. Try the rellenas—ground beef encased in fried bread—as well as mashed potatoes with mango sauce and crusty empanadas with guava paste and cheese. *Inexpensive*

HACKNEY'S PRINTERS ROW
733 S. Dearborn; 1-312-461-1116
At this pub located in one of the oldest buildings in Printers Row, a neighborhood as famous and historic as the Hackneyburger, try the popular deep-fried onion loaf with one of the many imported tap beers. *Inexpensive*

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

HUB 51
51 W. Hubbard; 1-312-828-0051
The menu of this eclectic River North spot has something from Asia to Mexico. The high ceilings, exposed ductwork and concrete columns create a hip, urban feel for this casual restaurant. Kitchen is open until 2 a.m. *Inexpensive*

IL MULINO NEW YORK
1150 N. Dearborn; 1-312-440-8888
Creamy, garlicky dishes from Italy's Abruzzo region served in the rooms of the former Biggs Gold Coast mansion. Priced well above other Italian eateries, Il Mulino is lauded by many as the best they've experienced. *Very Expensive*

INDIA HOUSE
59 W. Grand; 1-312-645-9500
The 150-item menu offers a vast array of India's offerings, from standard fare to street fair delicacies. A glass-enclosed kitchen encourages proud chefs to perform. Specialty drinks allow the adventuresome to experiment. *Moderate*

JAPONAIS
600 W. Chicago; 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*

L2O
2300 N. Lincoln Park West; 1-773-868-0002
Chef Laurent Gras's seafood-focused restaurant adds imagination and sparkle to 21st century fine dining. Choose between a four-course prix-fixe menu and a 12-course tasting menu. White leather chairs, an onyx table and ebony columns create a serene, minimalist atmosphere. *Very Expensive*

LANDMARK
1633 N. Halsted; 1-312-587-1600
Steppenwolf and Royal George patrons meet in the blue dining room to partake in contemporary American fare. 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*

Continued on next page

Continued from previous page

LE COLONIAL
937 N. Rush; 1-312-255-0088
In the heart of 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 the sophisticated menu. *Expensive*

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*

NEW MANA FOOD BAR
1742 W. Division; 1-773-342-1742
Even die hard carnivores are pleased with this global vegetarian menu that offers your choice of small or large plates in a cozy storefront setting. Innovative sake cocktails round out the meal. *Inexpensive*

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; 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*

MEIJI
623 W. Randolph; 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 at this restaurant named for the Japanese Meiji period. *Moderate*

MERCAT A LA PLANXA
638 S. Michigan; 1-312-765-0524
This Catalan restaurant in the restored Blackstone Hotel offers grilled-to-order tapas. The stunning Spanish modern room's giant windows offer beautiful views of Grant Park. *Moderate*

NEW MEXIQUE
1529 W. Chicago; 1-312-850-0288
Patrons enjoy the inventive menu that blends Mexican and French cuisines and then write their praise on a wall next to the kitchen. *Moderate*

NEW MIXTECO
1601 W. Montrose; 1-773-868-1601
This small Uptown location fills quickly as word has spread about the upscale Mexican food including slow roasted pork, scallops, and pork chops with mole sauce. Reservations recommended for weekends. BYOB *Inexpensive*

MIZU YAKITORI AND SUSHI LOUNGE
315-317 W. North; 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 multiple dipping options including soy sauces, hot mustard and spices. *Moderate*

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
Mon Ami's French bistro serves steak seven ways piled high with Mon Ami's delicious frites. A clever and convenient rolling cart offers wines by glass. *Moderate*

MOTO
945 W. Fulton Market; 1-312-491-0058
Tasting menus of seven or 10 very small courses are offered. Moto leans toward raw food, which chef Homaro Cantu defines as never seeing temperatures above 108 degrees. Inventive twists accompany each course. *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; 1-312-621-0200
This Loop favorite has fruit reductions and Asian accents to complement exceptional seafood and fish and outstanding service. *Expensive*

NINE
440 W. Randolph; 1-312-575-9900
A place to watch for celebrities and professional athletes, Nine also boasts a remarkable interior. The champagne and caviar bar serves beluga by the ounce, while the upstairs Ghost bar pours a must-try specialty martini. *Expensive*

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

OLD TOWN BRASSERIE
1209 N. Wells; 1-312-943-3000
Classic French menu with a hint of Asian and American influences changes with the seasons. Reservations suggested. *Moderate*

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; 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; 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*

OTOM
951 W. Fulton Market; 1-312-491-5804
This Market District restaurant serves familiar food with an interesting twist. Choose between the comfortable lounge with mirrored fireplace and the vibrantly striped dining room. *Moderate*

OYSY
50 E. Grand; 1-312-670-6750
888 S. Michigan; 1-312-922-1127
Chicago fish lovers agree that Oysy means delicious. Two city locations boast creative menus offering more than 50 maki, nigiri and sushi choices as well as tempura. Hot and cold tapas-sized dishes allow experimentation. *Inexpensive*

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 walls covered with portraits of patrons—the famous as well as the unknown—and cartoons. *Expensive*

NEW PARK 52
5201 S. Harper; 1-773-241-5200
This vibrant and playfully decorated Hyde Park spot serves up American comfort food. An upstairs lounge overlooks the dining scene below. *Moderate*

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

PARLOR
1745 W. North; 1-773-782-9000
Upscale comfort food has been done before, but here, the baked-potato soup, macaroni and cheese and meatloaf are somehow simultaneously traditional and trendy. The restaurant offers Sunday brunch. *Moderate*

NEW PERENNIAL
1800 N. Lincoln; 1-312-981-7070
Contemporary, artful American cuisine served in a casual wood and aqua-colored organic setting in Lincoln Park. *Moderate*

NEW THE PUBLICAN
837 W. Fulton Market; 1-312-733-9555
It is no surprise that this woody beer hall features an extensive selection of global beers, but the standout here is the menu that centers on seafood and pork and house-made charcuterie. *Inexpensive*

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 steaks, pastas and salads. The room and the food are substantial at this recognizably 1940s Loop-style restaurant. *Expensive*

PICCOLO SOGNO
464 N. Halsted; 1-312-421-0077
With Murano glass chandeliers, Venetian plastered walls, an Italian marble bar and a terrazzo floor, executive chef Tony Priolo brings his home of Naples to Chicago. *Moderate*

POPS FOR CHAMPAGNE
601 N. State; 1-312-266-7677
The success of this nationally renowned lounge prompted a move to River North's historic Tree Studios. Enjoy the raw bar and underground jazz club, choosing from 120 champagnes by the bottle and seven by the glass. *Expensive*

NEW PROVINCE
161 N. Jefferson Street; 1-312-669-9900
With a menu organized by portion size, this newcomer serves up contemporary American farm cuisine accented by South American and Spanish flavors. *Moderate*

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

REAL TENOCHTITLAN
2451 N. Milwaukee; 1-773-227-1050
This inviting Logan Square restaurant serves upscale Mexican fare in a rustic room with beautifully finished hardwood floors, high ceilings and interesting art. Real Tenochtitlan was BYOB at publication time. *Moderate*

RHAPSODY
65 E. Adams; 1-312-786-9911
Conveniently tucked inside Sym-

phony Center with an outside entrance on Adams Street, Rhapsody boasts a conservatory-style dining room filled with lovers of food, wine and the arts. *Expensive*

RICCARDO TRATTORIA
2119 N. Clark; 1-773-549-0038
Former Bice chef Riccardo Michi opened this small Tuscan restaurant in Lincoln Park. Many have found their way to Riccardo's dining room to enjoy freshly made pasta and hearty meat dishes including tripe Florentine. *Moderate*

RIVA
700 E. Grand; 1-312-644-7482
Enormous windows offer sweeping views of the Chicago skyline from Navy Pier as you dine on the house specialties of steak and seafood. *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 politicos. Excellent Italian preparations of chicken, lamb and seafood also available. *Expensive*

ROSEBUD TRATTORIA
445 N. Dearborn; 1-312-832-7700
Formerly named Ballo, this Rosebud restaurant continues to offer a menu of classic vats of homemade pasta and wood-fired pizzas. *Moderate*

ROY'S CHICAGO
720 N. State; 1-312-787-7599
Combining French and Asian techniques, Hawaiian fusion cuisine includes hibachi-grilled salmon, blackened tuna and barbecued baby back ribs. Watch the exhibition kitchen from the bar or dining room. *Expensive*

RUMBA
351 W. Hubbard; 1-312-222-1226
Upscale restaurant reminiscent of the Tropicana nightclub offers tastes of Cuba, Puerto Rico and South America. Thursday through Sunday, guests can tango to live music and 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*

SEPIA
123 N. Jefferson; 1-312-441-1920
This restaurant in a former print shop is visually spectacular and critically acclaimed for its contemporary menu driven by seasonally available foods. Renovations include a floor-to-ceiling wine rack and Art Nouveau floor. *Moderate*

SHANGHAI TERRACE
108 E. Superior; 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, with more ambitious offerings such as wok-fried lobster also on the menu. *Expensive*

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

SHIKAGO
190 S. LaSalle; 1-312-781-7300
Amid industrial art and minimalist touches Shikago serves awe-inspiring upscale Asian dishes in Chicago's Loop, from the sushi bar and the yakitori grill to creative entrees such as the bulgogi-marinated rib eye steak with scallion pancakes. *Moderate*

SIXTEEN
401 N. Wabash; 1-312-588-8030
The restaurant in Donald Trump's new Chicago building has a mammoth Swarovski crystal chandelier and two-story high windows showcasing sweeping views of the Wrigley building, Tribune Tower and Lake Michigan. The menu promises bold flavors and top grade ingredients. *Very 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*

NEW SUNDA
110 W. Illinois; 1-312-644-0500
Communal tables, a sushi bar and a hipster scene set the stage for a sleek new Asian experience. The "Devil's Basket" combines red chilis, toasted garlic and soft-shell crabs served up in a metal bucket. *Moderate*

TABLE 52
52 W. Elm; 1-312-573-4000
Art Smith, chef to Oprah and best-selling cookbook author, has opened this small, 35-seat restaurant. Heavier weekend menu includes fried chicken, waffles and biscuits and gravy served with chicken gumbo. *Expensive*

TAKASHI
1952 N. Damen; 1-773-772-6170
James Beard award winner Takashi Yagihashi's French and Asian fusion restaurant is tucked into a two-story Bucktown bungalow with an open kitchen on the ground floor. Diners can choose between hot small plates, cold small plates and large plates. *Moderate*

TALLULAH
4539 N. Lincoln; 1-773-942-7585
This American bistro in Lincoln Square serves brie and bacon mashed potatoes with braised short ribs. Another favorite dish is crab and andouille fritters with remoulade. *Moderate*

TAMARIND
614 S. Wabash; 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*

TEPATULCO
2558 N. Halsted; 1-773-472-7419
Tepatulco, named for the chef-owners' Mexican hometown, serves regional dishes with contemporary Mexican style. Chef Bahena is famous for his mole sauces. Five-course tasting menu and wine flights available. *Inexpensive*

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

TRATTORIA NO. 10
10 N. Dearborn; 1-312-984-1718
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 for 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*

TUSCANY
1014 W. Taylor; 1-312-829-1990
Fashionable Northern Italian restaurant suitably situated on Taylor Street. *Expensive*

NEW URBANBELLY
3053 N. California; 1-773-583-0500
This basic noodle shop in a strip mall has an unassuming décor but serves up plenty of tasty noodles, dumplings and short ribs. BYOB. *Inexpensive*

VEERASWAY
844 W. Randolph; 1-312-491-0844
Indian small plates are the focus of this Warehouse District restaurant. Expect traditional Indian recipes blended with American ingredients in a modern room. *Inexpensive*

VERMILION
10 W. Hubbard; 1-312-527-4060
Veering far from the traditional path, Vermilion presents a Latin-Indian fusion menu that works surprisingly well. The tapas-style menu includes roasted baby eggplants, fried plantain dumplings and various curries. *Expensive*

VIAND RESTAURANT
155 E. Ontario; 1-312-255-8505
American bistro with a focus on comfort foods is a hit among shoppers as well as the after-work crowd. Order the clever "junk food cart," a miniature shopping cart filled with sweet treats that begs a double take. *Moderate*

WAVE
644 N. Lake Shore; 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*

ZAPATISTA
1307 S. Wabash; 1-312-435-1307
Named for Mexican revolutionary Emiliano Zapatista, this upscale venue offers a broad menu including grilled lobster tails and Negro Modelo marinated filet mignon. Pictures of revolutionaries accent the walls. *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*

ZED 451
739 N Clark; 1-312-266-6691
Here waiters also serve as chefs and prowl the room with skewers of assorted meats. Guests are invited to visit the harvest table for salads, side dishes, charcuterie and gourmet cheeses. The floor plan's passageways, stairwells and balconies add drama. *Moderate*

ZOCALO
358 W. Ontario; 1-312-302-9977
Mexican cuisine has become even more festive at this popular River North restaurant where marinated panela cheese with a shot of mescal is flambéed tableside. *Moderate*

RSNA News

RSNA News
820 Jorie Blvd.
Oak Brook, IL 60523
1-630-571-2670
1-630-571-7837 Fax
rsnanews@rsna.org

NONPROFIT ORG.
U.S. POSTAGE
PAID
PERMIT #186
EASTON, PA 18042

CALENDAR

Medical Meetings
October 2009 – May 2010

OCTOBER 30–NOVEMBER 1
Society of Radiologists in Ultrasound (SRU), 19th Annual Meeting, The Fairmont Chicago • *www.sru.org*

OCTOBER 31–NOVEMBER 1
The Royal College of Radiologists (RCR) & Hong Kong College of Radiologists (HKCR), 3rd Joint Scientific Meeting, HKCR, 17th Annual Scientific Meeting, Hong Kong Academy of Medicine, Aberdeen • *www.hkcr.org*

NOVEMBER 1–5
American Society for Radiology Oncology (ASTRO), 51st Annual Meeting, McCormick Place West, Chicago • *www.astro.org*

NOVEMBER 29–DECEMBER 4
RSNA 2009, 95th Scientific Assembly and Annual Meeting, McCormick Place, Chicago • *RSNA2009.RSNA.org*

JANUARY 11–15, 2010
Integrating the Healthcare Enterprise (IHE®) North American Connectathon, Hyatt Regency Chicago • *www.ihe.net/Connectathon*

JANUARY 16–17, 2010
Society of Breast Imaging (SBI): Applications and Interpretation of Breast MRI, The Fairmont Hotel, Dallas • *www.sbi-online.org*

JANUARY 23–26, 2010
Indian Radiological & Imaging Association (IRIA), 63rd Annual Congress, Karnavati Club, Ahmedabad • *www.iria.in*

FEBRUARY 13–18, 2010
International Society for Optics and Photonics (SPIE), Medical Imaging 2010, Town and Country Resort and Convention Center, San Diego • *www.spie.org/medical-imaging.xml*

FEBRUARY 21–26, 2010 VISIT THE RSNA BOOTH
Society of Gastrointestinal Radiologists (SGR) and Society of Uroradiology (SUR), Abdominal Radiology Course, Omni Resort at Champions Gate, Orlando, Fla. • *www.sgr.org*

FEBRUARY 28–MARCH 3, 2010
Society of Thoracic Radiology, Annual Meeting, Hotel del Coronado, San Diego • *www.thoracicrad.org*

MARCH 1–4, 2010
Healthcare Information and Management Systems Society (HIMSS), Annual Conference and Exhibition, Atlanta • *www.himssconference.org*

MARCH 4–8, 2010 VISIT THE RSNA BOOTH
European Congress of Radiology (ECR), Austria Center, Vienna • *www.astro.org*

MARCH 13–18, 2010
Society of Interventional Radiology (SIR) 35th Annual Scientific Meeting, Tampa • *www.sirweb.org*

MARCH 20–23, 2010
The 13th Asian Oceanian Congress of Radiology (AOCR), Taipei International Convention Center, Taiwan • *www.aocr2010.org/congress.htm*

MARCH 23–26, 2010 VISIT THE RSNA BOOTH
Association of University Radiologists (AUR), 58th Annual Meeting in Joint Sponsorship with RSNA, Hilton San Diego Bayfront Hotel • *www.aur.org*

MARCH 24–27, 2010
American Institute of Ultrasound in Medicine (AIUM), Annual Meeting, San Diego Marriott • *www.aium.org*

APRIL 9–12, 2010 VISIT THE RSNA BOOTH
International Congress of Radiology (ICR), Shanghai International Convention Center, China • *www.icr2010.org/en/index.asp*

APRIL 13–17, 2010
The Society for Pediatric Radiology (SPR), Annual Meeting, Boston Park Plaza Hotel & Towers • *www.pedrad.org*

MAY 1–7, 2010
International Society for Magnetic Resonance in Medicine (ISMRM), European Society for Magnetic Resonance in Medicine and Biology (ESMRMB), Joint Annual Meeting, Stockholm International Fairs, Sweden • *www.ismrm.org*

MAY 2–7, 2010
The American Roentgen Ray Society (ARRS), Annual Meeting, Manchester Grand Hyatt San Diego • *www.arrs.org*