



## Annual Meeting Preview and Restaurant Guide



# RSNA 2010

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In Pursuit of Excellence

NOVEMBER 28 - DECEMBER 3 - MCCORMICK PLACE, CHICAGO

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- HIFU Offers Promising Outcomes as Prostate Cancer Treatment
- Spike in MR Imaging Accidents Underscores Need for Regulation
- RAs' Quickly Evolving Role Hits Roadblocks

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## CELEBRATING 20 YEARS



RSNA News proudly celebrates 20 years of providing high-quality, timely coverage of radiology research and education and critical issues in private and academic practice, along with comprehensive information about RSNA programs, products and other member benefits.

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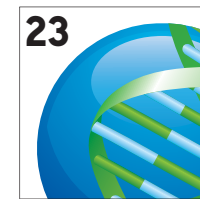
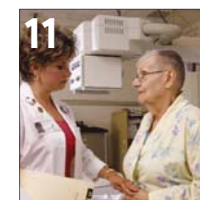
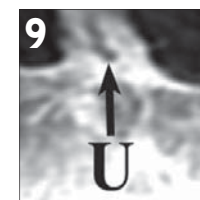
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## RSNA AWARDED \$2.4 MILLION NIBIB GRANT FOR QUANTITATIVE IMAGING

RSNA has been awarded a two-year, \$2.4 million contract from the National Institute of Biomedical Imaging and Bioengineering (NIBIB) to support RSNA's quantitative imaging and biomarkers programs—specifically the Quantitative Imaging Biomarkers Alliance (QIBA), formed in 2008 to advance quantitative imaging and the use of imaging biomarkers in clinical trials and practices.

"All of us involved in QIBA are very excited and gratified to receive this award from NIBIB," said Daniel Sullivan, M.D., RSNA Science Advisor and principal Investigator for the award. "It is an affirmation of the importance of quantitative imaging and provides an invaluable opportunity for accelerating RSNA's activities related to quantitative imaging."

The contract provides \$1.2 million each year to support a coordinated effort to establish an infrastructure for the collection and analysis of imaging biomarker data. The long-term objective is to establish processes and profiles leading to acceptance by the imaging community, clinical trial industry and regulatory agencies of quantitative imaging biomarkers as proof of biology, changes in pathophysiology and surrogate endpoints for changes in the health status of patients.



## Residents and Fellows Tell RSNA Their Needs, Challenges

RADIOLOGY RESIDENTS AND FELLOWS look to RSNA not only for tools to make their learning experiences richer, but also for ways to easily share their favorite resources with each other, according to members of RSNA's new Resident and Fellow Committee.

The newly formed committee met for the first time in September at RSNA Headquarters in Oak Brook, Ill. Overseen by RSNA Board Liaison for Science N. Reed Dunnick, M.D., the committee is charged with advising the Society on the effectiveness of its resident and fellow programming, providing input on the RSNA website, publications and career resources and encouraging free RSNA membership among radiologists in training.

Committee members—21 residents and fellows from programs across the country—said they appreciate RSNA resources such as the personalized Web portal myRSNA. They added that when they find useful articles, images or other information, they want to be able to easily flag it for other users and easily pass it on to an interested colleague.

RSNA staff will be working to follow up on the recommendations of the committee, which will meet again during RSNA 2010.

One critical need for residents and fellows is information about fulfilling the requirements, such as credentialing, necessary to transition into practice, said Jocelyn D. Chertoff, M.D. (pictured above), of Dartmouth-Hitchcock Medical Center, a faculty advisor to the committee. Duane G. Mezwa, M.D., of Oakland University William Beaumont School of Medicine, also serves as a faculty advisor.



## My Turn

### Technology Changes Not Only *What* We Learn, But *How*

IT'S NO SECRET that the technologic nature of radiology makes it one of those areas of medicine where practice changes almost constantly. As practitioners, *what* we must learn in order to keep up with changing technology has accelerated, and most of us see that as a challenge.

But technology can also present us with a chance to change *how* we learn, and that's a tremendous opportunity.

Since 2004, RSNA has employed an electronic audience response system (ARS) at its annual meeting. Each year, it outfits more and more lecture rooms with these handheld keypads, and encourages faculty to use them. As a teacher, what excites me most about this technology is that it is a tool that has transformed the traditional lecture.

Like so many great ideas, ARS is simple: I present information to a large audience, and then get feedback on the effectiveness of my teaching. The system is anonymous, so audience members can be frank without risk of embarrassment. The system is also immediate, as it happens in real time.

ARS gives me the chance to see what works and what doesn't, and presents an option I never before had as a teacher—to

adjust my style or content, or both, "on the fly." Audience response technology also gives my audience an option it has never had—learners can interact with one another and with the material on the spot.

RSNA has offered its members Internet tools for learning for the better part of a decade, and most of us see those tools as timesavers, bits of convenience that are perks of membership. We can take our *RadioGraphics* tests online, report our SAMs credits without having to bother with snail mail, and even get CME credit for online learning right at our workstations with the Point of Care (PoC) tool.

But a hybrid of an "old-fashioned" presentation to a large group and a "new-fashioned" way for the audience to be engaged? This is the best of both worlds.



Brandi Nicholson, M.D., is an assistant professor of radiology in the Division of Breast Imaging and associate radiology residency program director for the University of Virginia Health System. She recently presented a faculty development workshop on audience response technology at RSNA Headquarters.

### UC Davis Names Dougherty Radiology Chair

After serving as acting chair for more than two years, **Raymond Dougherty, M.D.**, has been appointed chair of the Department of Radiology at the University of California (UC) Davis in Sacramento. Dr. Dougherty is also a clinical professor of radiology at UC Davis. A specialist in abdominal imaging utilizing ultrasound, CT and MR imaging, Dr. Dougherty was a residency program director at UC Davis for 10 years.

While serving as acting chair, Dr. Dougherty secured funding for and facilitated construction of the Breast Imaging Research Lab and spearheaded the construction and opening of UC Davis' first off-campus, state-of-the-art imaging center at the Placer Center for Health in Rocklin, Calif.



### Rubin Named Radiology Chair at Duke

**Geoffrey Rubin, M.D.**, a pioneer in the development and application of CT angiography for diagnosis of cardiovascular diseases, is the new chair of the Department of Radiology at Duke University School of Medicine. Previously, Dr. Rubin served as chief of cardiovascular imaging and medical director of the 3D laboratory at Stanford University. Dr. Rubin is a member of the RSNA Education and Exhibits Committee's Vascular/Interventional Subcommittee, the Public Information Advisors Network and is a reviewer for *RadioGraphics*.



## Sign Up for *RadiologyInfo.org* Updates

Keep up with the latest information on *RadiologyInfo.org*, the RSNA-American College of Radiology public information website, by signing up to receive periodic e-mails, text messages or updates through your RSS reader.

You'll be notified about new procedures, site features, press releases, articles about new developments, updated safety information and more. Go to [RadiologyInfo.org/en/updates](http://RadiologyInfo.org/en/updates) to sign up.

## New Templates from RSNA Help Meet PQI Requirements

Fulfilling practice quality improvement (PQI) requirements (Part IV) of the American Board of Radiology (ABR) maintenance of certification (MOC) process is made easier with new ABR-approved PQI project templates created by RSNA. Go to [RSNA.org/Quality/PQI.cfm](http://RSNA.org/Quality/PQI.cfm) to get started.

### Each template:

- Describes the purpose and rationale of the project
- Lists needed resources, such as journal articles and applicable institutional policy
- Spells out what exactly is to be measured
- Provides protocols for baseline data collection and data analysis
- Describes factors that could potentially influence performance
- Provides a plan for post-intervention data collection

### Project Templates are available for:

- Appropriate Management of Indeterminate Pulmonary Nodules Found on CT
- Appropriateness of Ordering Head CT for Trauma Patients
- Catheter-Related Bloodstream Infection Reduction Program
- Communication of Significant Changes in Interpretation
- A Patient and Staff Training Program to Reduce Motion Artifacts Reducing Breath-hold Artifacts on Abdominal MR

### Talner Receives APDR Achievement Award

**Lee B. Talner, M.D.**, received the Academic Achievement Award of the Association of Program Directors in Radiology (APDR) at the annual meeting of the Association of University Radiologists. Now retired, Dr. Talner spent 24 years at the University of California, San Diego (UCSD), and became a professor of radiology in 1976. He served as chief of UCSD's diagnostic radiology residency program from 1984 to 1993, as well as section head of uroradiology. Dr. Talner moved to the University of Washington in 1993 to become director of radiology at Harborview Medical Center, professor of radiology and associate director of the radiology residency program. Dr. Talner is past-president of the APDR and the Society of Uroradiology, which awarded him its gold medal in 2006.



## Numbers in the News

# 22

Number of U.S. states which do not license, regulate or even recognize the role of radiologist assistants, sharply limiting the duties they can perform. (Read "RAs' Quickly Evolving Role Hits Roadblocks," Page 11.)

# 90

Percent of patients with 7-year survival following high-intensity focused ultrasound (HIFU) treatment for prostate cancer, according to a recently published study. (Read "HIFU Offers Promising Outcomes for Prostate Cancer," Page 9.)

# 310

Percent increase in MR imaging-related incidents since 2004, according to a U.S. Food & Drug Administration report. Patient safety experts are calling on radiologists to address the increase in accidents and a lack of federal regulations for MR imaging procedures. (Read "Spike in MR Imaging Accidents Underscores Need for Regulation," Page 5.)

# 1,915

Number of education exhibits to be presented in the Lakeside Learning Center at RSNA 2010. In addition, 598 scientific posters will be presented. (See [RSNA.org](http://RSNA.org) on Page 21 to learn how you can quickly search the online *RSNA Meeting Program* to find presentations in your areas of interest.)

## Letter to the Editor

### Issues with the "Department Chair"

THE FEATURE ARTICLE in the August 2010 issue of *RSNA News*, "The Big Hurt: Ergonomics Linked to Radiologists' Pain," and the research it references are very important for all radiologists. The subject of work-related health problems in imaging departments has received far too little attention from our societies and in our literature.

Focusing on the ergonomic challenges facing radiologists working in digital departments, the article references a survey revealing a very high percentage of related musculoskeletal complaints and headache. This is not surprising given that most imaging facilities were not designed and built with the human factors implications of our technologies in mind. Moreover, it is equally important to point out another long-term health risk posed by our specialty, barely alluded to in this article—our

work as diagnostic radiologists has become even more sedentary than it used to be in the pre-digital era. Current technology makes it possible to sit in a chair for an entire workday without ever needing to stand up or walk anywhere. Although not unique to imaging professionals, over the long term, this poses an even greater risk to our health.

To be sure, more attention needs to be focused on these problems in the form of research and education, as well as forums

conducted by our societies and at our national meetings. Workplace reengineering, smarter furniture and appliances and adaptive lighting should help. Taking a few breaks throughout the day to stretch and take a walk should be on everyone's short list and should be encouraged by every department chair, pun intended.

JASON L. PORT, M.D.  
RSNA MEMBER  
LONGMEADOW, MASS.

### IN MEMORIAM

#### Robert L. Bree, M.D.

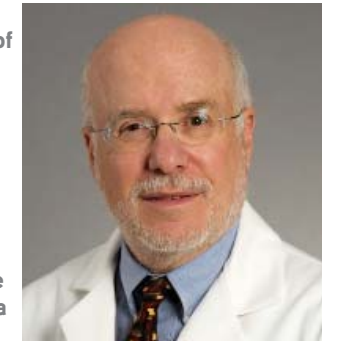
**Robert L. Bree, M.D.**, an internationally respected physician and professor of radiology at the University of Washington's Harborview Medical Center in Seattle, died on Sept. 1. He was 67.

Well known for his innovation and expertise in ultrasound, Dr. Bree earned his medical degree from the University of Michigan in 1966. After spending a decade at Beaumont Hospital in Detroit, Dr. Bree joined the University of Michigan Hospital as a professor and director of ultrasound. Many of the articles authored by Dr. Bree during this time are still considered

landmarks in ultrasound research. Dr. Bree served as chair of radiology at the University of Missouri before moving to Seattle to be closer to his family.

Dr. Bree was instrumental in passing the landmark 2009 Washington State legislation, Advanced Imaging Management, designed to ensure appropriate utilization of imaging procedures and ultimately reduce medical costs.

A member of the executive council of the Society of Radiologists in Ultrasound, Dr. Bree was a longtime RSNA member and served as a manuscript reviewer for *Radiology*.



### IN MEMORIAM

#### Igor Laufer, M.D.

A former president of the Society of Gastrointestinal Radiologists (SGR) and radiology professor at the University of Pennsylvania (Penn) in Philadelphia, **Igor Laufer, M.D.**, died of complications from cancer on Sept. 14. He was 66.

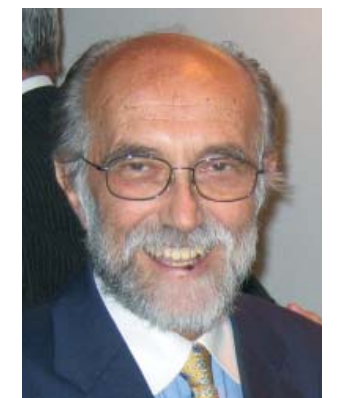
Born in what is now Slovakia, Dr. Laufer received his medical degree from the University of Toronto in 1967 and completed his radiology residency in 1972 at Beth Israel Hospital in Boston. Dr. Laufer served as Penn's chief of gastrointestinal radiology from 1976 to 1997, as residency training program director for the radiology department from 1993 to 2000 and as residency selection

director from 1999 to 2004.

Dr. Laufer is credited with pioneering techniques for performing double-contrast gastrointestinal esophagograms, double-contrast upper gastrointestinal examinations and double-contrast barium enemas.

Serving as SGR president from 1984-86, Dr. Laufer was awarded the society's Walter B. Cannon Medal in 1988 and received the Philadelphia Roentgen Ray Society's Outstanding Educator Award in 2005.

A longtime RSNA member who served on the gastrointestinal subcommittee of RSNA's Scientific Program Committee, Dr. Laufer was also a frequent contributor to *Radiology*.



## ABII Announces New Officers

THE AMERICAN BOARD OF IMAGING INFORMATIONICS (ABII) Board of Trustees announced its slate of officers to serve through May 2011.

Paul G. Nagy, Ph.D., is 2010-11 chair and Edward I. Bluth, M.D., remains vice-chair. J. Anthony Seibert, Ph.D., is secretary and

Charles M. Washington, M.B.A., R.T.(T) (ARRT), will continue as treasurer.

The following members round out the ABII Board: Richard L. Morin, Ph.D., Gloria Fabrey, M.B.A., and Chuck Socia, R.T.(R)(CT)(QM) (ARRT).

(from l-r:) Bluth, Seibert, Fabrey, Morin, Socia, Washington and Nagy.

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# Spike in MR Imaging Accidents Underscores Need for Regulation

*A nurse entering an MR imaging system room watches helplessly as scissors fly from her hand, hitting a nearby patient in the head. A patient being placed in the magnet bore in an MR imaging unit is struck by an oxygen tank. After being wheeled into the scan room on a ferromagnetic gurney, a patient is pinned to the MR imaging system along with the gurney.*

THOUGH NONE OF these patients was seriously injured, the outcome of these MR-related incidents taken from the U.S. Food and Drug Administration's (FDA) Manufacturer and User Facility Device Experience (MAUDE) database could have been worse—even deadly. In fact, experts contend that a series of converging factors has created an environment that is ripe for MR-related accidents, heightening the need for increased vigilance in adopting MR imaging safety procedures and protocols.

"At the moment, we have something of a perfect storm," said Tobias Gilk, an architect with the firm RADIOLOGY-Planning based in Kansas City, Mo., president and MRI Safety Director for Mednovus, Inc., based in Leucadia, Calif., and a former member of the American College of Radiology's (ACR) MRI Safety Committee. "The increasing number of MR procedures performed each year with increasingly strong MR magnets combined with reduced reimbursements, staff cuts, a shortage of experienced MR technologists and the lack of federal standards, add up to increased risk for MRI accidents."

The 2008 FDA accident report data show a 310 percent increase in MR imaging-related incidents since 2004, the last year in which a decline in the number of such accidents was reported. In that time period, 482 MR imaging-related incidents were reported to the FDA.

While the number of reported incidents pales in comparison to the estimated 30 million MR imaging studies performed annually in the U.S., experts say the FDA statistics don't tell the whole story and that the spike in accidents—combined with a lack of federal regulations for MR imaging procedures—has created a safety issue that should be on the radar of every radiologist.

"It gets back to who is ultimately responsible for patient safety, and that is the radiologist," said Frank Shellock, Ph.D., founder of the Institute for Magnetic Resonance Safety, Education and Research (IMRSE), a clinical professor of radiology and medicine and director of MRI studies of Biomimetic MicroElectronic Systems Implants at the University of Southern California in Los Angeles, and author of numerous books on MR imaging safety. "If radiologists are not even aware that some of these issues exist, that could be a huge problem."



## "Projectiles" are Common Accident Cause

Among the most common MR imaging-related accidents are "projectile" injuries, in which ferromagnetic objects—anything from oxygen canisters and wheelchairs to buckets, cribs and desk chairs—are pulled toward the MR imaging system room at a high speed, creating a "missile" effect. The most widely publicized incident of this type occurred in 2001, when a 6-year-old boy was killed after an oxygen tank brought into the MR imaging scanner room became magnetized and flew through the air at 20 to 30 feet per second, fracturing the boy's skull.

"Not only is the patient at risk, but so is anyone who happens to be in the same room," according to Gilk, who created and maintains the MRI Metal



The increasing strength of MR magnets and growing number of MR procedures are among the factors contributing to a 310 percent increase in MR imaging-related accidents since 2004, experts say. Following MR imaging safety guidelines can prevent most accidents, according to Tobias Gilk (left) and Frank Shellock, Ph.D., (right) who have created MR imaging safety websites (see sidebar).

“Essentially, we take the FDA numbers and multiply them by 100 and get much closer to a reasonable approximation of the true number of MR-related incidents.”

**Tobias Gilk**

Detector blog (see sidebar) featuring frequent posts and comments about MR imaging accidents. "There is an alarming number of injuries to MR technologists and service personnel."

Burn injuries—primarily related to radiofrequency coils, physiologic monitors, electronically activated devices and external objects made from conductive materials—are also common, while implanted devices pose another potential problem. ACR recommends that implanted cardiac pacemakers and implantable cardioverter/defibrillators be considered relative contraindications for MR imaging, because they can disrupt a pacemaker's electronic system and/or burn heart tissue that is in contact with the leads. This is likely to change with the U.S. release of MR-conditional pacemakers specially designed for use in patients undergoing MR imaging exams, according to Dr. Shellock. The cardiac implants are already available in Europe.

Other MR imaging-related incidents might not ever get reported, according to Emanuel Kanal, M.D., director of Magnetic Resonance Services and professor of radiology and neuroradiology at the University of Pittsburgh Medical Center. Dr. Kanal contends that the FDA reporting system—which records information on medical devices that may have malfunctioned or caused a death or serious injury—is flawed.

"While admittedly, the number of actual safety incidents/accidents is extremely difficult to accurately quantify, it is clear that the extreme majority of MR safety incidents do not make it to the FDA MAUDE database," said Dr. Kanal, whose extensive history with MR safety includes co-authoring a textbook with Dr. Shellock, and serving as an expert or consultant on hundreds of legal cases involving MR incidents in the past three decades and as the lead author on the ACR Guidance Document for Safe MR Practice. "In fact, the number of cases reported to me personally over the years is larger than what is in the FDA database, and very often these cases do not overlap."

Along with a lack of standards for which events need to be reported and definitions for what con-



This poster warning of potential hazards in an MR imaging system room can be downloaded at [imrser.org](http://imrser.org) and [MRIsafety.com](http://MRIsafety.com).

stitutes a "serious" injury, Dr. Kanal said many radiologists do not how to report such incidents, while others fear such information could be used against them if legal action is taken. Ultimately, MR imaging-related incidents go underreported, Gilk said. "Essentially, we take the FDA numbers and multiply them by 100 and get much closer to a reasonable approximation of the true number of MR-related incidents."

## Mandatory Standards Not on the Horizon

Although the ACR issued a guidance document for MR safety and the Joint Commission in 2008 issued a Sentinel Event—its highest patient advisory—on MR imaging safety, no mandatory MR imaging safety standards exist, nor are they likely to be adopted anytime soon, according to Dr. Shellock, who has been involved in MR imaging safety for 25 years and created and maintains the internationally known website, [MRIsafety.com](http://MRIsafety.com) (see sidebar).

*Continued on Page 8*

## GUIDELINES HELP PREVENT MR IMAGING ACCIDENTS

The following links offer MR imaging safety guidelines:

- MR imaging safety resource including a comprehensive list of thousands of implants and devices as well as MR imaging safety topics ([MRIsafety.com](http://MRIsafety.com))
- ACR Guidance Document for Safe MR Practice, originally published in 2002, was rewritten and released early in 2007 as the ACR Guidance Document for Safe MR Practices ([www.acr.org](http://www.acr.org))
- The Joint Commission Sentinel Event Alert on MRI safety issues ([www.joint-commission.org](http://www.joint-commission.org))
- Institute for Magnetic Resonance, Safety, Education, and Research (IMRSE) MRI Safety Guidelines ([www.imrser.org](http://www.imrser.org))
- MR safety information for patients ([www.RadiologyInfo.org](http://www.RadiologyInfo.org))

Other MR imaging-related safety sites include:

- The U.S. FDA Manufacturer and User Facility Device Experience (MAUDE) database ([www.fda.gov](http://www.fda.gov))
- The Metal Detector Blog ([www.mrimetaldetector.com/blog](http://www.mrimetaldetector.com/blog))

## MR IMAGING SAFETY PRODUCTS FEATURED AT RSNA 2010

Along with the latest in cutting-edge MR imaging technology, the Technical Exhibition at RSNA 2010 features the very latest in MR imaging safety products and devices. For more information on the RSNA 2010 Technical Exhibition, see Page 28.



# Newest CT Scanners Increase Resolution, Reduce Dosage

*Demand from the public and physicians is driving manufacturers to offer improvements in image quality, speed and coverage volume, while reducing exposure to radiation.*

ONE EXAMPLE OF advanced CT technology that offers both higher speed and reduced dose is Toshiba's Aquilion One®, a 320-slice scanner.

"This scanner takes a 6-inch swath in one rotation, and in less time than a single heartbeat," said Phil Evans, M.D., the associate vice-president of clinical imaging services at the University of Texas-Southwestern in Dallas, the first site in Texas to launch the technology introduced in 2008. "What takes 12 to 15 seconds for an ordinary scanner takes only a third of a second for the 320-slice scanner. A perfusion brain scan can now be done with much less radiation dose, which is of course an important advantage."

"We can get the perfusion scan in about five minutes, process it within 15 or 20 minutes, and it's ready to interpret," Dr. Evans said. "We are now better equipped to determine whether we are dealing with a hemorrhage or a stroke."

The scanner's ability to obtain images more quickly also minimizes motion artifact.

"Because this scanner is capable of whole-body imaging, there should be many applications for it," Dr. Evans said. "We're just starting to use it to assess cardiac function—it provides a really superb CT angiogram because you get the entire heart in one pass."

Such a scanner also has potential use for orthopedic injuries, bone tumors and evaluation of vocal cord paralysis, added Dr. Evans. "We think a 320-slice CT scanner really has the potential to impact the way we practice medicine."



Among the newest CT technology offering both speed and reduced dose is Toshiba's Aquilion® One, introduced at the University of Texas-Southwestern in Dallas in 2008. Phil Evans, M.D., (left) associate vice-president of clinical imaging services, and Michael Medina, assistant vice-president for health system imaging services at the university, oversaw the installation of the 320-slice scanner.

Image courtesy of the University of Texas-Southwestern Medical Center.

## MITA Initiative Prompts Dose Reduction Techniques

The Dose Check Initiative launched earlier this year by the Medical Imaging & Technology Alliance, a division of the National Electrical Manufacturers Association, brings together five manufacturers—GE Healthcare, Toshiba, Siemens, Royal Philips Electronics and Hitachi—specifically on the issue of

## SCANNER COMBINES PET, SPECT

CT is not the only imaging modality working to improve resolution and detector efficiency. A new technology that combines single photon emission CT (SPECT) and PET into one machine dubbed Versatile Emission CT, or VECTor, enables researchers working with small animals to see functional details smaller than a half a millimeter.

Developed by Delft University of Technology (TU) and Molecular Imaging (MI) Labs in the Netherlands, VECTor com-

bines current ultra-high resolution SPECT (U-SPECT) with a capability to capture high-energy level photons equal to those emitted in PET scans, making it possible to detect multiple tracers and molecular events simultaneously in real-time.

"VECTor will be available as an option on the established U-SPECT and U-SPECT/CT platforms," said Frederik Beekman, M.Sc., Ph.D., a professor at TU Delft, the inventor of the technology, leader of the devel-

opment team and CEO/CSO of MI Labs. "Instead of a detector ring without collimators, as used with traditional PET, we use patented pinhole collimators to detect gamma rays that are emitted after PET isotopes decay in the body.

"Radiologists will benefit from the new tracer molecules and imaging protocols that can only be tested in animals like mice," Dr. Beekman said. "U-SPECT AND VECTor can accelerate these developments tremendously."



Another new technique, Versatile Emission CT, dubbed VECTor, combines single photon emission CT and PET into one machine. Above: Frederik Beekman, M.Sc., Ph.D., inventor of VECTor.

radiation dose. Under the agreement, member companies will install safety controls to better ensure patients do not receive excessive radiation doses. Dosing checks are scheduled to begin before year-end and are meant to let scan operators know when the devices exceed recommended safety levels.

Offering optimal image quality at a lower dose was GE Healthcare's goal in designing Discovery™ CT750 HD, which delivers higher spatial resolution, better image clarity and liquid crystal display (LCD) with up to 50 percent lower radiation dose. At the core of Discovery CT750 HD is the proprietary GE Gemstone™ detector, which enables spatial resolution improvements of up to 33 percent, according to the company.

"This system was designed to meet the needs of customers looking for higher diagnostic capability with significant dose reduction," said Nilesh Shah, general manager of Global CT Marketing for GE Healthcare. "Our customers also told us that they want a highly reliable multi-purpose scanner that provides solutions for multiple clinical needs."

Another dose-reduction technique, called iterative reconstruction, enables image processing times 20-fold faster than is possible with current software. Iterative reconstruction algorithms can provide superior diagnostic image quality while reducing X-ray dose by as much as 80 percent. iDose™ from Philips Healthcare is one example of the technique.

Adaptive Statistical Iterative Re-construction (ASIR) uses statistical remodeling to diminish noise while reducing reliance on filtered back projection reconstruction techniques that were adopted soon after the invention of CT. This change allows for lower tube current, resulting in reduced dose for all CT applications to which it is applied. □



Optimal image quality at a lower dose is the promise of Discovery™ CT750 HD by GE Healthcare.

Image courtesy of GE Healthcare

“We think a 320-slice CT scanner really has the potential to impact the way we practice medicine.”

Phil Evans, M.D.

## CT ADVANCEMENTS FEATURED AT RSNA 2010

The course, "CT Technology Update: The Cutting Edge," will be offered Wednesday, Dec. 1, at RSNA 2010. To register for this and other RSNA courses, go to [RSNA.org/register](http://RSNA.org/register).

## SEE THE NEWEST CT TECHNOLOGY AT RSNA 2010

The Technical Exhibition at the RSNA annual meeting features the very latest in CT technology advancements. For more information on the RSNA 2010 Technical Exhibition, see Page 28.



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## Spike in MR Imaging Accidents Underscores Need for Regulation

*Continued from Page 6*

"It would be best if the MR imaging community would implement standards rather than wait for the government to do it, but I'm not confident that will occur," Dr. Sherlock said. "Liability frequently comes up as a sticking point with these accrediting organizations."

And because accrediting bodies compete for imaging provider participation, adding new requirements could amount to a disincentive of sorts, according to Gilk, an author of the ACR document. "It's a race to the bottom." Another factor is the intense spotlight on CT and radiation exposure. MR imaging—which does not use ionizing radiation and is therefore not linked to cancer—has avoided similar scrutiny and is even considered a "safe" alternative to CT, keeping it under the radar for regulation, Gilk said.

### Radiologists are Liable

Despite the lack of mandatory standards, radiologists are responsible for MR imaging-related accidents that occur under their purview—even if the radiologist is offsite at the time. "Sometimes radiologists are alarmed to learn that whoever signs the report is considered the supervising physician, and even if he or she is not physically present, legally it's a very clean line," Gilk said. "Radiologists need to be more directly involved with not only creating safety protocol but also with making sure guidelines are properly implemented, because ultimately, the responsibility rests with them."

Radiologists need to be involved in making the magnetic room as safe as possible, which can involve anything from making basic architectural changes and installing metal detectors to screening for ferromagnetic objects and training staff on MR imaging safety protocol.

Such safeguards will become critical as

magnet strength increases and healthcare revenues decrease, Gilk said.

"Clinically, new applications are being unveiled and we've just scratched the surface of what MR can do," Gilk said. "In fact, there is an increasing use of MR in the high-acuity area and emergency rooms. As the number of studies increase, so does the potential for accidents."

Fortunately, most accidents are preventable. "It's simply a matter of following current guidelines and putting the proper procedures and protocols in place," Dr. Sherlock said. Concluded Dr. Kanal: "The extreme majority of MR safety incidents that occur today are entirely avoidable."

Adherence to MR imaging safety measures comes down to what Gilk calls "enlightened self-interest" on the part of radiologists. "By protecting their patients, technologists and allied personal, radiologists are ultimately protecting themselves," he said. □

# HIFU Offers Promising Outcomes as Prostate Cancer Treatment

With more than 20,000 patients currently being treated in Europe and the results of a recent multicenter study in France offering promising results, researchers are hopeful that high-intensity focused ultrasound (HIFU) will emerge as a primary therapy for select patients with localized prostate cancer.

ALONG WITH impressive cancer survival rates, HIFU delivered outcomes similar to those expected with conformal external beam radiation therapy (EBRT), said Sebastian Crouzet, M.D., an associate professor in the Therapeutic Ultrasound Research Laboratory at the University of Lyon in France. Research by Dr. Crouzet and colleagues was published in the July 2010 online edition of the *European Urology* journal and presented at the 2010 American Urological Association annual meeting.

"We have followed some patients as long as 10 years and are reaching results very similar to EBRT," said Dr. Crouzet. "HIFU offers a minimally invasive alternative to more invasive surgery and radiotherapy treatments for low-risk cancers. It offers a dedicated solution before the disease progresses and requires more radical intervention."

Despite promising results, it is unclear whether HIFU—which does not yet have FDA clearance for this indication—will be approved for clinical use in the U.S. soon. HIFU is available as a treatment for prostate cancer in the United Kingdom as part of clinical trials.

"The accomplishments of French researchers are impressive and the outcomes have been good," said Graham Sommer, M.D., a professor of radiology at the Stanford University School of Medicine, who has been researching prostate ablation for the last 10 years. "Nevertheless, I don't think the technique is perfect yet."

"In addition to the lack of effective imaging, current transrectal HIFU is used to basically ablate the whole prostate, and is generally accompanied in Europe by transurethral resection to avoid urinary obstruction," Dr. Sommer continued. "This is a major issue, since transurethral resection of the prostate is a surgical procedure with associated negative side effects."

## Seven-Year Survival Rate Touted

In a six-center study conducted between 1993 and 2007, Dr. Crouzet and colleagues analyzed data on 803 patients after a mean follow-up of 42 months. The group comprised low- (36 percent), intermediate- (48 percent) and high-risk (16 percent) patients. The average Gleason Grading system score was  $\leq 6$  in 63.5 percent, 7 in 30.1 percent and  $\geq 8$  in 6.0 percent of patients. Patients received a mean of 1.4 HIFU treatments.



A six-center study in France showed that high-intensity focused ultrasound (HIFU) offered promising results for select patients with prostate cancer, according to lead researcher Sebastian Crouzet, M.D., (left) of the University of Lyon in France. At Stanford University, researchers including Graham Sommer, M.D., (right), are studying MR-guided transurethral HIFU, which may eliminate the need for a transurethral resection of the prostate prior to ablation.

Results showed an overall 7-year survival rate of 90 percent and a 7-year cancer-specific survival rate of 98 percent. Fully 96 percent of patients were metastases-free seven years after HIFU, while the 5-year biochemical (prostate-specific antigen) survival rates were 75 percent, 59 percent and 45 percent for low-, intermediate- and high-risk patients, research showed. The 7-year biochemical survival rate for low-, intermediate- and high-risk patients were 62 percent, 50 percent, and 39 percent, respectively.

“HIFU offers a minimally invasive alternative to more invasive surgery and radiotherapy treatments for low-risk cancers.”

Sebastian Crouzet, M.D.

Local control and disease-free survival rates with HIFU were similar to those expected with conformal EBRT, Dr. Crouzet said. "HIFU can be repeated when necessary several months or several years after the first session and can also be followed by a salvage radiation therapy," he added.

Study results and ongoing research have helped Dr. Crouzet identify a profile of the patient best suited for HIFU treatment.

"I think of HIFU as a complementary treatment, one that allows us to more selectively treat patients," he said. "Low- and intermediate-risk prostate cancer patients with a Gleason Grading system score below seven are the best candidates for HIFU treatment."

HIFU offers select patients with unifocal or whole-gland disease a number of advantages, including:

- Treatment is typically completed in less than four hours
- Continence sparing: 95 percent of patients undergoing a whole-gland ablation are continent after three months (according to new, not-yet published research by Dr. Crouzet and colleagues)
- Impotence rates between 20 and 50 percent—lower than or comparable to other treatment options
- Can be repeated if necessary; surgery or EBRT can also be performed after HIFU treatment

Another advantage is the progress patients make in just one HIFU treatment, Dr. Crouzet said. "We're always looking for the one-shot treatment and we're coming close to it with HIFU, with better patient selection and treatment planning," he said.

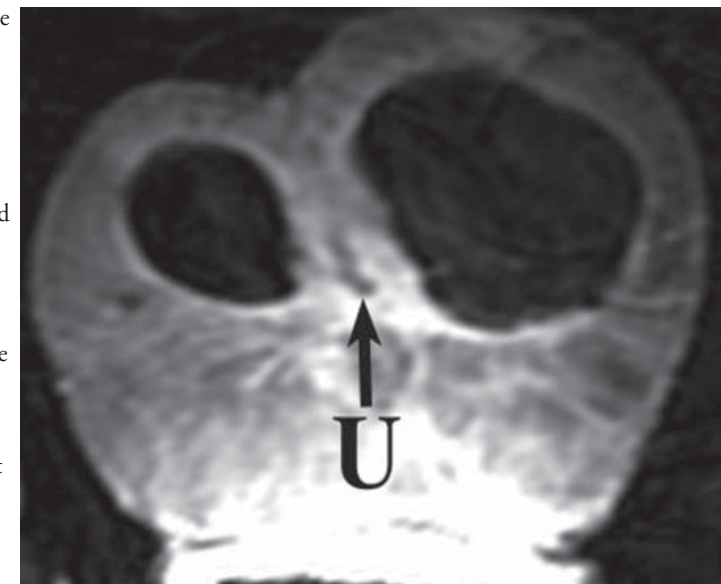
Of patients at his laboratory treated with HIFU after 2005, 80 percent received at least one HIFU treatment, up from 58 percent of patients treated there between 2000 and 2005.

"However, we must always think about the next step because recurrence is always a possibility," he added. "Unlike other treatments for prostate cancer, HIFU does not limit the use of other treatment options."

## MR Plays Critical Role in HIFU

Since beginning his research in 1993 with HIFU device prototypes, Dr. Crouzet's technique has evolved to include treatment planning with MR and fusing MR images with ultrasound.

"MR will play a major role in HIFU going forward," Dr. Crouzet said. "Because MR is more precise than ultrasound, we are getting even better outcomes with MR, including fewer side effects and complications."



With new research showing impressive cancer survival rates, researchers are hopeful that high-intensity focused ultrasound will emerge as a primary therapy for select patients with localized prostate cancer. Left: Axial contrast-enhanced image one month post-ablation in canine prostate involved with benign prostatic hyperplasia (BPH) shows complete resorption of ablated regions on either side of the urethra (U), which is preserved. The ablated regions are of size and location similar to enlarged transition lobes seen with human BPH.

"With MR, you can see what you're heating," agreed Dr. Sommer, adding that he believes MR guidance is just as crucial in HIFU of the prostate as it is in other ablation procedures.

Unlike the French researchers, who use a transrectal approach for HIFU, Dr. Sommer's group is studying MR-guided transurethral HIFU, which may eliminate the need for a transurethral resection of the prostate prior to the ablation. The transurethral technique allows the physician to preserve the urethra not only from the resection but also from the ablating sound waves.

"Our technique also looks very promising for benign prostatic hyperplasia, which could be an even more important application of HIFU than as a treatment for prostate cancer," Dr. Sommer said.

While the final outcome of HIFU research is yet to be determined, experts agree that ablation of the prostate holds promise.

"There's a lot of movement in this field with researchers going in different directions," Dr. Sommer said. "Nevertheless, prostate is another ideal area for ablation because it's just sitting there. It's a perfect target." □

### LEARN MORE

For more information on the study cited in this article, go to [rsnanews.org](http://rsnanews.org).

## HIFU TO BE DEBATED IN RSNA 2010 SESSION

"High-Intensity Focused Ultrasound: Myth or Reality?" will be presented by Christopher Comstock, M.D., on Monday, Nov. 29, at RSNA 2010. Registration is under way at [RSNA.org/register](http://RSNA.org/register).



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# RAs' Quickly Evolving Role Hits Roadblocks

*The potential for radiologist assistants (RAs) to transform radiology still faces considerable bureaucratic and political hurdles.*

IF ALL STATES IN THE U.S. eventually recognize RAs, "there will be a significant change in how we perform radiology," said Paul Ellenbogen, M.D., a diagnostic radiologist at Texas Health Presbyterian Hospital in Dallas and co-presenter of the RSNA 2010 course, "The Continuing Evolution of the Radiologist Assistant in the Medical Imaging Environment." (See sidebar)

Still in its infancy—the first RAs graduated and began entering the workforce in 2005—the RA profession has strong support from the American College of Radiology (ACR), the American Society of Radiologic Technologists (ASRT) and the American Registry of Radiologic Technologists (ARRT®), which jointly endorsed the new category in 2003. Later that year, the nation's first RA educational program began at Loma Linda University in California. Today, 13 RA education programs exist in the U.S.

Nevertheless, RAs are still trying to find a place in the big picture of healthcare. Specifically, RAs face two hurdles: First, like the Centers for Medicare & Medicaid Services (CMS), many insurers refuse to reimburse for RA services, primarily because they are not considered medical providers; and second, 22 states do not license, regulate or even recognize the role of RAs, sharply limiting the duties they can perform. Individual states regulate nonphysician practitioners such as RAs.

Another sticking point: CMS now requires personal supervision for RAs, meaning the supervising physician must be in the room during the procedure. ACR, ASRT, ARRT and the Society of Radiology Physician Extenders are advocating for direct supervision for RAs, under which the supervising physician needs only be present on the premises, immediately available to offer assistance and direction.

While ACR, ASRT and ARRT have been lobbying state legislatures to recognize RAs, many lawmakers are gun-shy about supporting such initiatives due to the increasing number of ancillary medical professionals lobbying for increased responsibilities, Dr. Ellenbogen said.

For example, nurse anesthetists are seeking to perform anesthesiologists' duties and physician assistants (PAs) want increased autonomy over patient care. The resulting "turf wars" have made legislators hesitant to support any new medical professional role, Dr. Ellenbogen said.



Ellenbogen



Lung

## RAs Create Niche

RAs and radiologic technologists (RTs) differ primarily in terms of their level of education: RAs are qualified RTs who go through additional training that qualifies them to perform selected invasive procedures.

"Radiologist assistants perform a wide variety of procedures and duties, including patient pre-procedure assessment and follow-up care and routine fluoroscopic studies along with some interventional procedures like arthrograms, paracentesis/thoracentesis and drainages," said Christine Lung, CAE, vice-president of public policy for ASRT and a co-presenter of the upcoming RSNA 2010 session.

Even in these turbulent economic times, Lung believes RAs are a boon to radiology practices and hospital departments. "Studies have shown that radiologist assistants increase efficiency in the patient care setting and patient satisfaction in the care they receive," she said.

If RAs are able to perform selected procedures and act as patient liaisons of sorts, radiologists will be able to devote more time to interpretation and diagnosis, noted Dr. Ellenbogen. "Just as the PA assists the physician, surgeon, internist or other physician, the RA assists the radiologist," he said. "If all

“If all RAs were authorized to do selected procedures, radiologists could concentrate on the more complex procedures.”

—Paul Ellenbogen, M.D.



**Although radiologist assistants (RAs) are considered a boon to radiology practices and hospital departments and have support from professional radiology organizations, they are still trying to find their place in the big picture of healthcare.**

RAs were authorized to do selected procedures, radiologists could concentrate on the more complex procedures. This would result in greater productivity by the radiologist, and in turn, lead to faster response times and possibly shortened length of patient stay."

## Roles of PAs, RAs Overlap

Meanwhile, another trend threatens to affect the RAs' role. An increasing number of PAs are finding work in radiology departments and performing most of the same duties as RAs, but with the added advantage of being licensed medical providers.

Although PAs are moving into radiology at higher rates, ACR contends that the RAs' specialized training gives them an advantage, according to Dr. Ellenbogen. "We think the RA is the better person to do the job," he said.

Even though RAs possess valuable skills, they are not able to perform many of the duties that a PA can, including making hospital rounds and discharging patients, according to Kenneth Trulson, PA-C, of Interventional Radiology and Vascular Surgery in San Jose, Calif.

"RAs are going to be relegated to the cath lab,

and that's really all they can do," he said, adding that RAs are more beneficial to outpatient radiology practices than hospital departments.

Still, Trulson thinks there is a place for both RAs and PAs in the radiology field. "I don't think anyone is invading anyone's turf," he said. "It comes down to what works for each group. We're all here to treat the patient."

Even so, many states do not allow PAs to perform radiologic procedures, Lung said.

"Since the radiologist assistant is a radiologic technologist, he or she can perform specialized technical aspects of the procedure as well as patient care duties," she said. "Radiologist assistants are specifically educated to work in radiology for radiologists and are highly skilled in radiation safety and protection by virtue of their radiologic technologist training."

Ultimately, the choice between RA and PA should be determined by the needs of the individual practice, Trulson said. "Healthcare providers need to take a little time, do their homework and find the right person to fill their needs. I think we can all coexist quite well." □

## SpeakUp

Are RAs benefiting your practice? Vote in this month's RSNA News reader poll at [rsnanews.org](http://rsnanews.org).

## RA SYMPOSIUM EMPHASIZES TEAMWORK, PATIENT SAFETY

The RA Symposium at RSNA 2010 will comprise four refresher courses designed to meet the educational needs of the RA as defined by the American Registry of Radiologic Technologists (ARRT®). Sessions are:

- Pediatric Imaging: The Radiologist and Radiologist Assistant Team Approach to Clinical Service
  - Chest Pain—Imaging Clinical Pathways with Considerations of Diagnostic, Cost and Patient Safety Issues
  - Vascular Interventional Cases: The Radiologist and Radiologist Assistant Approach to Patients in the Vascular Suite
  - The Continuing Evolution of the Radiologist Assistant in the Medical Imaging Environment
- Registration for RSNA 2010 is under way at [RSNA.org/register](http://RSNA.org/register).

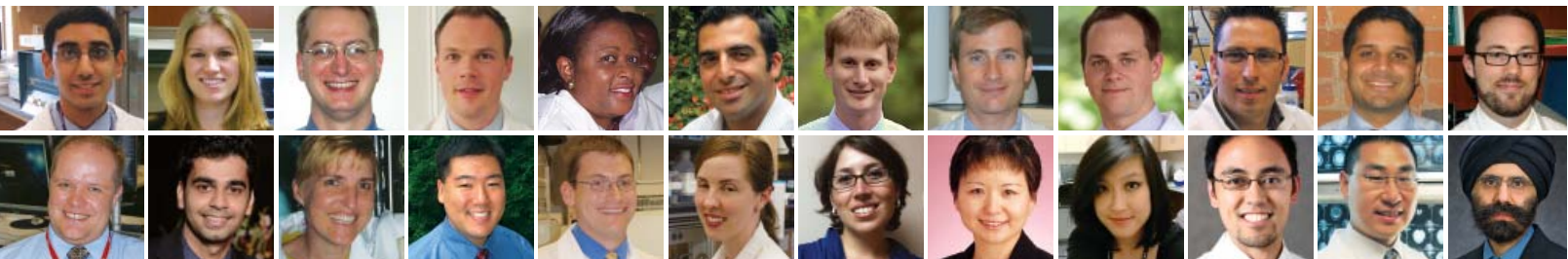


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# RSNA R&E FOUNDATION ANNOUNCES 2010 GRANT RECIPIENTS

The RSNA Research & Education Foundation funded 70 new and continuing grant projects for the 2010-2011 academic year, totaling more than \$2.2 million. Abstracts for these projects will be on display at RSNA 2010 in the R&E Foundation Booth 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.



(top row, l-r) Ali, Braun, Hamstra, Arvold, Atalabi, Jourabchi, Hope, Paxton, Higginson, Cordle, Bindra, Borrero  
(bottom row, l-r) Allen, Tavri, Salkowski, Taniguchi, Ippolito, Connolly, Resteghini, Nishino, Bahng, Cabrera, Cheng, Kalra

## RESEARCH SCHOLAR GRANT

### Hersh Chandarana, M.D.

New York University School of Medicine  
*Evaluation and Prediction of Treatment Response in Liver Metastasis undergoing Chemotherapy with use of Dual Energy CT Iodine Quantification Technique*

## SIEMENS

### Qian Dong, M.D.

University of Michigan Hospitals and Health Centers  
*Quantitative Imaging in Soft Tissue Sarcomas: Use of MRI Diffusion and MRI Perfusion Biomarkers to Predict Early Response to Neoadjuvant Chemotherapy*



### Michael S. Gee, M.D., Ph.D.

Massachusetts General Hospital  
*Evaluation of Diagnostic Magnetic Resonance (DMR) Technology for Molecular Characterization of Cancer Cells from Percutaneous Image-Guided Biopsy Specimens*

## Carestream

### Daniel Hamstra, M.D., Ph.D.

The University of Michigan Medical Center  
*Molecular Dissection of the Role of Tumor Vasculature in Radiation Sensitivity*

### Chan Hong Moon, Ph.D.

University of Pittsburgh  
*Sodium/Proton MR Imaging of Knee Cartilage in Osteoarthritis*



### Mizuki Nishino, M.D.

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*



### Myria Petrou, M.A., M.B.Ch.B.

University of Michigan Health System  
*Hyposmia, Septohippocampal Cholinergic Denervation, and Amyloidopathy in Mild Cognitive Impairment*



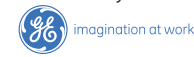
### Mark Shiroishi, M.D.

Keck School of Medicine, University of Southern California  
*Assessing The Value of Perfusion and Permeability MR Imaging to Characterize Pseudoprogression and Pseudoresponse in Patients with High-Grade Glioma*



### Zhen Jane Wang, M.D.

University of California, San Francisco Medical Center  
*Noninvasive Assessment of Renal Tumor Aggressiveness Using Hyperpolarized [1-13C] Magnetic Resonance Spectroscopic Imaging: a Pilot Study*



## RESEARCH SEED GRANT

### Omolola Mojisola Atalabi, M.B.B.S.

University College Hospital/College of Medicine, University of Ibadan, Nigeria  
*Ultrasonography in the Assessment of Renal Status During Malarial Illness Among Nigerian Children*



### Nikhil Bhagat, M.D.

Johns Hopkins University Hospital  
*The Role of Intratumoral Injection of a Novel Chemotherapeutic Agent for the Treatment of Pancreatic Adenocarcinoma*



### Camilo G. Borrero, M.D.

University of Pittsburgh Medical Center  
*Clinical efficacy of P-PRP versus L-PRP versus placebo for treatment of acute syndesmotic injury: A Prospective, Randomized, Controlled Feasibility Study*



### Simon K. Cheng, M.D., Ph.D.

Columbia University College of Physicians and Surgeons  
*The Role of TGFβ-Mediated Immunosuppression in Radiation-Induced Pneumonitis*

### Steve H. Fung, M.D.

The Methodist Hospital Research Institute, Weill Cornell Medical College  
*Detecting and Imaging Protease Activity in Head and Neck Cancers with Activatable MR Nanoprobe Contrast Agent*



### Hee Kyung Kim, M.D.

Cincinnati Children's Hospital  
*T2 Relaxation Time Mapping (T2 Map) as a Quantitative and Objective Measure of Inflammation and Fatty Infiltration of the Muscles in Children with Duchenne Muscular Dystrophy (DMD)*



### Kenneth S. Lee, M.D.

University of Wisconsin School of Medicine & Public Health  
*Acoustoelastography as an Outcome Measure for Platelet-Rich Plasma Injection Treatment of Chronic Plantar Fasciitis: a Pilot Study*



### David Wilson, M.D., Ph.D.

University of California, San Francisco  
*New 13C Hexose Probes for the Metabolic Characterization of Tumors In Vivo Using Hyperpolarized 13C Spectroscopy*

## RESEARCH FELLOW GRANT

### Rivka R. Colen, M.D.

Brigham and Women's Hospital  
*Targeted Drug Delivery of Temozolomide using "Microbubble Enhanced" MR-guided Focused Ultrasound: A Glioma Rat Model Feasibility Study*

Silver Anniversary Campaign Pacesetters Fellow Grant

### James Costello, M.D., Ph.D.

Emory University  
*MRI of Chronic Obstructive Pulmonary Disease: Biomechanical Evaluation of the Pre/Post-Transplant Lung*



### Lidia Nagae, M.D., Ph.D.

The Children's Hospital of Philadelphia  
*A Multimodal Neurobiological Imaging Study of Pediatric Mild Traumatic Brain Injury*

### Habib Rahbar, M.D.

University of Washington  
*Risk-Stratification of Ductal Carcinoma in Situ (DCIS): Development of a Predictive Model Incorporating Dynamic-Contrast-Enhanced and Diffusion Weighted MRI Characteristics at 3T for Discrimination of DCIS Subtypes*

## RESEARCH RESIDENT GRANT

### Bryan G. Allen, M.D., Ph.D.

University of Iowa Hospitals and Clinics  
*Sensitization of Lung Cancer to Chemo-Radio-Therapy Using Ketogenic Diets*

### Nils Arvold, M.D.

Massachusetts General Hospital  
*Molecular Imaging of Tumor Hypoxia Before and After Tyrosine Kinase Inhibitor Therapy in Patients with EGFR-Mutant Advanced Non-Small Cell Lung Cancer*

### Ranjit Bindra, M.D., Ph.D.

Memorial Sloan-Kettering Cancer Center  
*High Throughput Screening for Novel DNA Double-Strand Break Repair Inhibitors*

### Alvin R. Cabrera, M.D.

Duke University Medical Center  
*Investigating Changes in Tumor Vasculature with Dynamic Contrast-Enhanced MRI Following Treatment of Recurrent Gliomas with Stereotactic Radiosurgery and Bevacizumab*



### Eileen Connolly, M.D., Ph.D.

New York University School of Medicine  
*Translating the Regulation of Protein Synthesis in Inflammatory Breast Cancer to Enhanced Radiosensitivity*



### Andrew Cordle, M.D., Ph.D.

MetroHealth Medical Center  
*Neuro-Inflammatory Imaging: Superparamagnetic Iron Oxide Nanoparticle Labeling of Reactive Monocytes in Alzheimer's Disease*  
Adele Swenson Resident Grant

### Joshua Dowell, M.D., Ph.D.

University of Virginia Health System  
*Plectin-1 Targeted Nanodelivery of MRI Contrast Agent for Early Detection of Pancreatic Ductal Adenocarcinoma*



### Daniel Higginson, M.D.

The University of North Carolina at Chapel Hill  
*Retinal Oximetry: a Novel Technology for Studying Radiation-Induced Retinopathy*

### Thomas Hope, M.D.

University of California, San Francisco  
*Validation of an NSF Model in Renal Failure Rats and Evaluation of Imatinib as a Potential Treatment*

RSNA Presidents Circle Resident Grant

### Joseph Ippolito, M.D., Ph.D.

Washington University in St. Louis  
*High Throughput RNA Interference and Pharmaceutical Screens of GABA Metabolism in Prostate Cancer Hypoxia*

### Roger Lin, M.D., Ph.D.

University Hospitals Case Medical Center  
*Treating Catheter Infections with Fiber Optically Delivered Ultraviolet Light*



Cesare Gianturco Resident Grant

### Nitin Ohri, M.D.

Jefferson Medical College of Thomas Jefferson University  
*Spatial Response Patterns of Locally Advanced Non-small Cell Lung Cancer After Chemoradiation: A Secondary Analysis of ACRIN 6668 / RTOG 0235*



### Ben Paxton, M.D.

Duke University Medical Center  
*Catheter-directed Gastric Artery Embolization for Long Term Modulation of Systemic Ghrelin Levels in a Porcine Model*



### Amish Shah, M.D.

Columbia University College of Physicians and Surgeons  
*The Role of the p19H3 gene in Mesothelioma Pathogenesis, Radio- and Chemosensitivity*

### Cullen Taniguchi, M.D., Ph.D.

Stanford University  
*The Role of PHD2 in the Hematopoietic Stem Cell Niche*

### Sidhartha Tavri, M.B.B.S.

University of California, San Diego  
*Stem Cells as a 'Trojan Horse' for Ultrasound-Targeted Cell Therapy*



### Terence Williams, M.D., Ph.D.

University of Michigan  
*Characterization of Anti-Neoplastic FADD Kinase Inhibitors Identified Utilizing a Molecular Imaging-Based High Throughput Screen*

## RESEARCH MEDICAL STUDENT GRANT

### Naim Ali, B.A.

New Jersey Medical School  
*Evaluation of Combined Modality Radioimmunotherapy for Treatment of Mammary Adenocarcinoma using in vivo Bioluminescence Imaging*

### Vignesh A. Arasu, B.S.

University of California, San Francisco  
*Diagnostic Accuracy Using Signal Enhancement Ratio (SER) in MRI-Detected Secondary Breast Lesions for Patients Undergoing Preoperative Staging*



### Agnes Bahng, B.S.

Hospital of the University of Pennsylvania  
*Determination of Prognostic Factors for Vaginal Stenosis Associated with Intravaginal High-Dose Rate Brachytherapy in Patients with Endometrial Carcinoma*

### Sophia Bornstein, M.D., Ph.D.

Oregon Health & Science University  
*Stem Cell Therapy for Anorectal Dysfunction After Pelvic Irradiation*

### Kelly Braun, B.Sc., M.Sc.

Robert Wood Johnson Medical School  
*Feasibility of 3-D Conformal Accelerated Partial Breast Irradiation (APBI) for Early Stage, Node Negative Breast Cancer Patients using Acculoc Fiducial Markers: A Phase 1 Trial*

### Warren Chang, M.B.A., BA

University of Wisconsin School of Medicine and Public Health  
*Low Wall Shear Stress Promotes Atherosclerotic Plaque Progression in the Carotid Bifurcation, Carotid Siphon, and Carotid Terminus and Surrounding Segments: A Pilot Clinical Study Using High Resolution PC-MR Velocimetry and Automated Spline Interpolation*

### Joanna Jeong, M.S.

University of Cincinnati College of Medicine  
*Rapid Automated Corpus Callosum Magnetization Transfer Ratio and Morphometrics at 3T: Multiple Sclerosis Assessment*

Continued on next page

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Paul E. Berger, M.D.  
Judy & William A. Murphy Jr., M.D.  
Judy S. & C. Leon Partain, M.D., Ph.D.  
*In memory of Edward V. Staab, M.D.*

### \$1,500 – \$2,499

Sallie & Michael H. Bleshman, M.D.  
Catherine Brant  
*In memory of Earl E. Brant, M.D.*  
Terrence C. Demos, M.D.  
Nalini & Vikram S. Dogra, M.D.  
Judith & G. Donald Frey, Ph.D.  
Peg & Paul A. Larson, M.D.  
Joseph K.T. Lee, M.D.  
Chandra Lunia, M.D. & Shantilal Lunia, M.D.  
Trish & John A. Patti, M.D.  
Anne G. & Walter L. Robb, Ph.D.  
Miriam D. & Edwin J.R. Van Beek, M.D., Ph.D.

### \$500 – \$1,499

Nick & Jean Bryan  
*In honor of Susan Thomas*  
Aine M. Kelly, M.D. & Paul P. Cronin, M.D.  
Alice & Ernest J. Ferris, M.D.  
*In memory of Peggy J. Fritzsche, M.D.*  
Patricia M. Mauro, M.D. & Matthew A. Mauro, M.D.  
Martin R. Prince, M.D., Ph.D.

### \$250 or less

Ilysa C. Boridy, M.D.  
Oscar F. Carbonell, M.D.  
Patrick H. Carey, M.D.  
Maria D. Duque, M.D.  
Christopher G. Eckel, M.D.  
Joseph M. Fonte, M.D.  
Elizabeth Orvoen-Frija, M.D. & Guy Frija, M.D.  
Ayca Gazelle, M.D. & G. Scott Gazelle, M.D., Ph.D.  
Elizabeth L. Hadley, M.D.  
Amy Benusis & Douglas E. Hertford, M.D.

**YOUR DONATIONS IN ACTION**  
With an RSNA R&E Foundation grant, Rivka R. Colen, M.D., is studying targeted drug delivery using MR-guided ultrasound as a potential treatment option for brain tumors.



Loren H. Ketai, M.D.  
Cathy & Raymond E. Kohne, M.D.  
Kent T. Lancaster, M.D.  
Pamela K. Woodard, M.D. & Edward O'Donnell  
Maria T. Pettinger, M.D.  
Elmarie & Wynand J. Pretorius, M.B.Ch.B.

Laura Domene de Ramirez & Jose Luis Ramirez-Arias, M.D.  
U. Joseph Schoepf, M.D.  
Louis N. Scotti, M.D.  
MaryAnn & Frank J. Simone, M.D.  
Kathy & William J. Taylor, M.D.  
Patrick Veit-Haibach, M.D.  
Richard S. Young, M.D.

## RSNA R&E FOUNDATION ANNOUNCES 2010 GRANT RECIPIENTS

Continued from previous page

### Benjamin Johnson, B.A., M.Ed.

University of California, San Diego, School of Medicine  
*The Effects of Flip Angle and Repetition Time on the Accuracy and Repeatability of Hepatic Proton Density Fat Fraction Estimation by a Complex-data, T1-independent, T2\*-corrected, Spectrum-Modeled MRI Technique*

### Natanel Jourabchi, B.A.

University of California, Los Angeles  
*Comparison of Hepatic Tumor Ablation Margin in Radiofrequency Ablation, Cryoablation and Irreversible Electroporation: How Much Ablation Margin is Adequate?*

### Andrew Lee, B.S.

Stanford University  
*Noninvasive Imaging of Cardiac Stem Cells in a Large Animal Model*

### Benjamin Lok, B.S.

Memorial Sloan Kettering Cancer Center  
*PALB2 Recruitment to the BRCA1-BRCA2 Pathway of Homologous Recombination*

### Kathryn Lowry, B.S.

Institute for Technology Assessment, Massachusetts General Hospital  
*Modeling a Lung Cancer Screening Program in Patients with Chronic Obstructive Pulmonary Disease*

## FUJIFILM

### Michael Muely, B.S.

Pennsylvania State University, College of Medicine  
*Development of an Interface for Image Guided Neurochemical and Molecular Intervention*

### Hanmanth Neboori, B.S.

Cancer Institute of New Jersey, Drexel University College of Medicine  
*The efficacy of ABT-263 in Relapsing, Radiation Resistant, BCL-2 Over-Expressive Breast Cancer*

### David Okada, B.A.

University of Pennsylvania School of Medicine  
*Characterization of Arrhythmogenic Left Ventricular Scar Using T1rho MRI Mapping*

### Yuan James Rao, B.S. (Eng)

Washington University in St. Louis School of Medicine  
*Comparison and Correlation of FDG-PET and T2-FS MRI in the Assessment of Cervical Cancer*

## Canon

Continued on Page 44

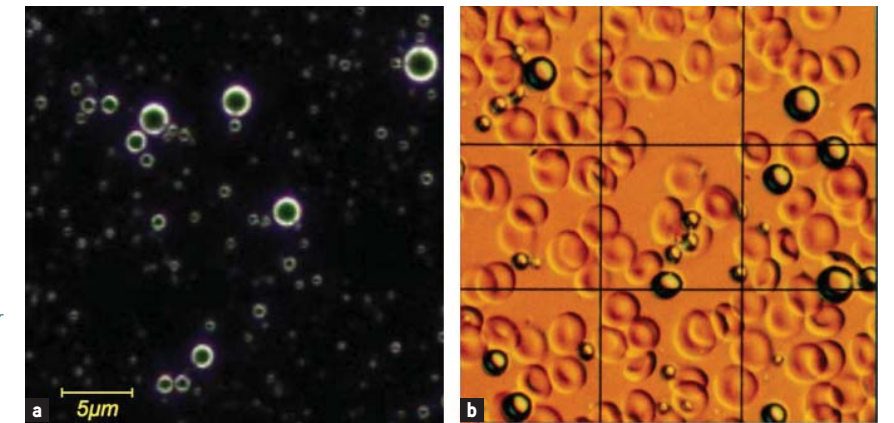
## Journal Highlights

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

### Microbubble-enhanced US in Body Imaging: What Role?

CONTRAST AGENTS for ultrasonography (US)—comprising microscopic bubbles of gas in an encapsulating shell—are unique in that they interact with the imaging process, oscillating in response to a low-intensity ultrasound field and disrupting in response to a high-intensity field. New contrast-specific imaging modes allow US to show exquisite vascularity and tissue perfusion in real time and with excellent spatial resolution.

In a State of the Art article in the October issue of *Radiology* (RSNA.org/*Radiology*), Stephanie R. Wilson, M.D., and Peter N. Burns, Ph.D., of the Foothills Medical Centre at the University of Calgary in Canada, discuss the preeminent use of contrast-enhanced (CE) US for liver mass characterization as well as newer applications including the guidance of ablative intervention, monitoring activity of bowel inflammation in Crohn disease, characterization of kidney masses, diagnosis of prostate cancer and monitoring the response of tumors to antivascular drug therapies. Adding microbubble enhancement to US elevates its role to the front line of



Contrast agents for ultrasound: (a) Lipid-coated microbubbles of perfluoropropane gas (Definity; Lantheus Medical Imaging, Billerica, Mass.) seen with a dark-field microscope. (b) Perfluoropropane bubbles with a protein shell (Optison; GE Healthcare, Milwaukee), seen here against a background of red blood cells.

(*Radiology* 2010;257:1:24-39) ©RSNA, 2010. All rights reserved. Printed with permission.

diagnosis in body imaging, the authors conclude.

“The use of bubbles as molecular and cellular probes, their targeting as a means for detection as well as drug and gene delivery, and their application as focal potentiators for minimally invasive therapies are all applications in their

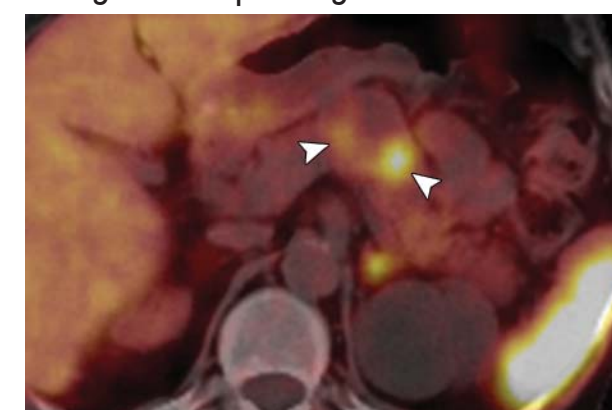
infancy,” Drs. Wilson and Burns write. “The coming years are likely to see an unprecedented union of US imaging with a unique series of injectable constructs that will transport an already versatile imaging modality to the forefront of the interface between diagnosis and therapy.”

### Pancreatic Endocrine Tumors: Radiologic-Clinicopathologic Correlation

PANCREATIC ENDOCRINE TUMORS (PETs) are predominantly well-differentiated pancreatic or peripancreatic tumors that demonstrate endocrine differentiation. Knowledge of the characteristic clinical, pathologic and radiologic features of PETs is important in evaluating and managing patients with a suspected clinical syndrome or pancreatic mass.

In an article in the October monograph issue of *RadioGraphics* (RSNA.org/*Radiographics*), Rachel B. Lewis, L.C.D.R., M.C., U.S.N., of the Armed Forces Institute of Pathology (AFIP) in Washington, D.C., and colleagues review current literature along with 136 cases of PET that were accessioned into AFIP radiology archives from January 1995 to December 2009. The authors also discuss clinical, pathologic and radiologic features of these tumors, as well as their staging, prognosis and treatment.

“PETs are a group of neoplasms with



Nonfunctioning cystic pancreatic endocrine tumor that was incidentally discovered in a 53-year-old woman. Axial 68Ga-DOTA-TOC-fused positron emission tomography-CT image shows uptake (arrowheads) within the periphery of the mass.

(*RadioGraphics* 2010;30:1445-1464) ©RSNA, 2010. All rights reserved. Printed with permission.

diverse clinical findings but common imaging features. Most are well-differentiated, circumscribed and hypervascular at CT and MR imaging, and they often demonstrate marked high signal intensity on T2-weighted MR images. Smaller tumors tend to be more homogeneous than larger tumors, and heterogeneity from cystic

degeneration, necrosis or calcification is more common in larger tumors,” the authors conclude.

This article meets the criteria for 1.0 AMA PRA Category 1 Credit™. CME is available in print and online.

## RadioGraphics

## Radiology in Public Focus

Press releases were sent to the medical news media for the following articles appearing in the latest issue of *Radiology*.

### Self-embedding Behavior: Radiologic Management of Self-inserted Soft Tissue Foreign Bodies

PERCUTANEOUS RADIOLOGIC TREATMENT of self-embedded soft tissue foreign bodies (STFBs) is safe, precise and effective for radiopaque and non-radiopaque foreign bodies, including those at risk for fragmentation during traditional operative removal techniques.

As part of a larger longitudinal study over the past decade evaluating the use of image-guided foreign body removal (IGFBR) for the treatment of STFBs, Adam S. Young, B.S., of the Department of Radiology at Nationwide Children's Hospital in Columbus and The Children's Radiological Institute, and colleagues identified a subgroup of adolescent patients who deliberately embed objects into the soft tissues in order to effect bodily harm. Along with providing the first series report of self-embedding behavior (SEB) as a distinct pathologic behavior, the authors demonstrate the efficacy and clinical impact of IGFBR in the treatment of STFBs and discuss the radiologist's unique role in recognizing the behavior and initiating intervention and treatment.

This diagnostic responsibility is similar to the role of the radiologist in the initial diagnosis and intervention of child abuse, the authors conclude.

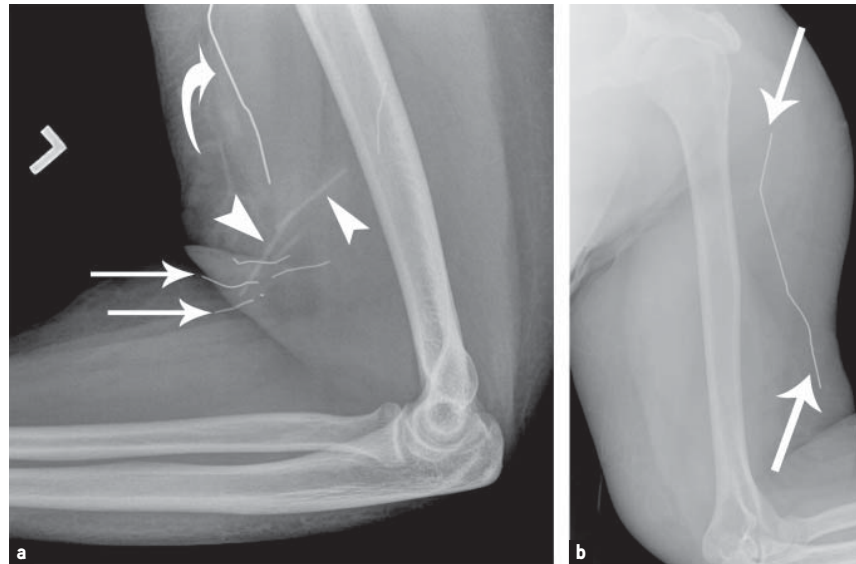
"Awareness of SEB may result in radiologists being the first physicians to identify SEB and rapidly mobilize an interdisciplinary team for early and effective intervention and treatment," the authors write.

### Atrial and Ventricular Functional and Structural Adaptations of the Heart in Elite Triathletes Assessed by Cardiac Magnetic Resonance Imaging

CARDIAC ADAPTATIONS in elite triathletes are characterized by a balanced increase in left ventricle (LV) and right ventricle (RV) myocardial mass, wall thickness, ventricular dilation and diastolic function.

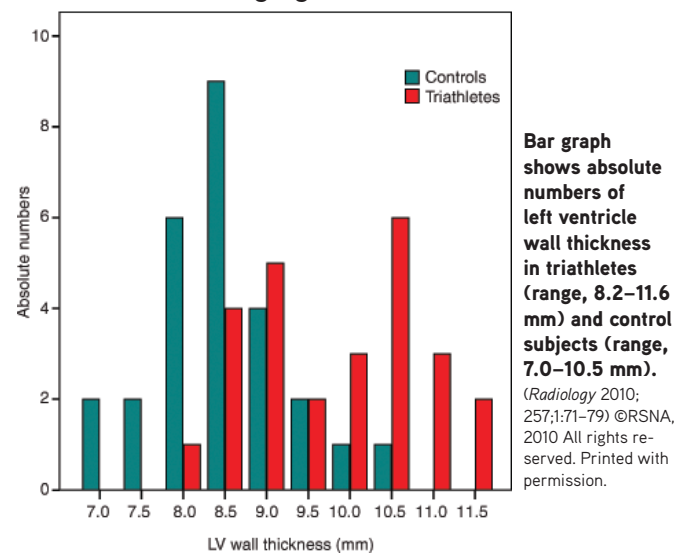
In a study of 26 professional male triathletes (mean age 27.9) and 27 male controls (mean age 27.3), who underwent cardiac MR imaging, Michael Scharf, M.D., of the University of Erlangen-Nuremberg in Germany, and colleagues discovered that the prevalence of left atrial (LA) enlargement is substantially higher and LA dilation is accompanied by LV remodeling as an adaptation to training in elite triathletes. Results also showed that LV and RV end-diastolic volumes (EDV) in elite triathletes are significantly increased above the normal ranges of EDV as measured on cardiac MR imaging, whereas values for LV and RV myocardial mass do not exceed normal ranges.

"The similar LV remodeling index in athletes and controls and the strong positive correlation between LV myocardial mass and EDV indicate a balanced eccentric adaptation of the heart. The indexed ratio for end-systolic LA volume to EDV indicates pronounced LA dilation," the authors conclude.



**Radiographs from two episodes of self-embedding behavior (SEB) in a 17-year-old girl. (a) Lateral radiograph of elbow shows nine foreign bodies, including metal staples (straight arrows), unfolded paper clip (curved arrow) and graphite fragments (arrowheads). (b) Oblique radiograph of left humerus shows 16-cm unfolded paper clip (arrows) embedded in the belly of a biceps muscle during second episode of SEB, 14 months after the episode described in a. The patient embedded a second identical paper clip into the belly of a right biceps muscle during same (second) episode.**

(*Radiology* 2010;257:1:233-239) ©RSNA, 2010 All rights reserved. Printed with permission.



**Bar graph shows absolute numbers of left ventricle wall thickness in triathletes (range, 8.2–11.6 mm) and control subjects (range, 7.0–10.5 mm).**

(*Radiology* 2010; 257:1:71-79) ©RSNA, 2010 All rights reserved. Printed with permission.

### Addressing Overutilization in Medical Imaging

RADIOLOGISTS SHOULD BE at the forefront of a movement to develop a national strategy addressing overutilization of imaging services and increasing accountability in radiology and healthcare in general for the appropriate utilization of medical imaging and radiation.

In an article drawing on information released at the 2009 American Board of Radiology Foundation summit, "Medical Imaging: Addressing Overutilization in an Era of Healthcare Reform," William R. Hendee, Ph.D., of the Medical College of Wisconsin in Milwaukee, and colleagues identify the key forces driving overutilization and discuss ways to reduce their influence through a collaborative national effort.

Factors identified as drivers of overutilization include the payment mechanism and financial incentives in U.S. healthcare, the practice behavior of referring physicians and self-referral. Recommended solutions include a national collaborative effort to develop evidence-based appropriateness criteria for imaging, decision support at the point of care and management of self-referral and defensive medicine.

"Many factors contribute to the overutilization of medical imaging, some of which are beyond the ability of the radiology community to 'heal itself,'" the authors conclude. "However, there are many avenues that radiologists and their colleagues in medical physics and radiation oncology can take to reduce the overutilization and improve the performance of imaging services."

### Radiation Doses and Cancer Risks from Breast Imaging Studies

A single breast-specific gamma imaging (BSGI) or positron emission mammography (PEM) study is associated with a radiation-induced fatal cancer risk higher than or comparable to that of annual screening mammography in women aged 40–80 years.

In an article comparing recent literature on radiation doses from radiologic procedures and organ doses from nuclear medicine procedures, along with Biologic Effects of Ionizing Radiation (BEIR) VII age-dependent risk data, R. Edward Hendrick, Ph.D., of the School of Medicine at the University of Colorado in Denver, estimates the lifetime attributable risks (LARs) of radiation-induced cancer incidence and mortality from screen-film mammography, digital mammography, digital breast tomosynthesis, dedicated breast CT, BSGI and PEM.

A single BSGI or PEM examination involves a lifetime risk of inducing fatal cancer greater than or comparable to that of a lifetime of annual screening mammography in women starting at age 40 years, results showed. In addition, digital breast tomosynthesis and dedicated breast CT involve cancer risks that are one to two times those of digital or screen film mammography, Dr. Hendrick discovered.

"BSGI and PEM devices are being marketed to breast centers and private physicians' offices as problem-solving adjunctive tools and, in some cases, second-look devices after mammography and US," Dr. Hendrick concludes. "The associated risks and potential benefits of these procedures, even as diagnostic adjuncts to mammography, should be communicated to patients through informed consent."

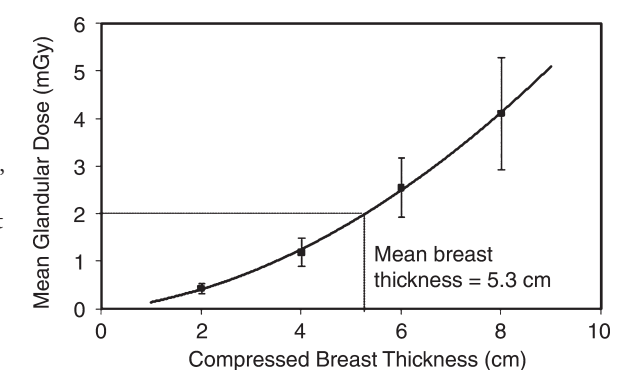
### Media Coverage of RSNA

In August 2010, media outlets carried 169 RSNA-related news stories. These stories reached an estimated 74 million people.

August coverage included Gannett News Service, *Chicago Tribune*, *Orlando Sentinel*, *Cincinnati Enquirer*, *The Charleston Gazette*, *South Florida Sun-Sentinel*, *Patriot News*, *Times of Northwest Indiana*, *Health & Medicine Week*, *Diagnostic Imaging*, *Science Letter*, *The Dr. Joy Browne Show* (nationally syndicated radio), *Marketwatch Radio Network*, *Joan Hamburg Program* (WOR-AM, New York, N.Y.), *The Joey Reynolds Show* (WOR-AM, New York, N.Y.), *Medline Plus*, *Earthtimes.org*, *iVillage.com*, *USNews.com* and *RT-Image.com*.

### October Outreach Activities Focus on Breast Cancer Awareness

To highlight National Breast Cancer Awareness Month in October, RSNA distributed public service announcements (PSAs) focusing on the importance of regular screening mammograms. In addition to the PSAs, RSNA distributed the "60-Second Checkup" radio program focusing on mammography screening.



**Mean glandular dose (MGD) per view as function of compressed breast thickness, measured by using material equivalent to 50 percent glandular tissue, 50 percent fatty tissue (18), for 38 screen film mammography (SFM) units. Error bars represent 1 standard deviation in measured MGDs at each compressed breast thickness across all 38 SFM units. Solid line is best quadratic fit of MGD versus compressed breast thickness.**

(*Radiology* 2010;257:1:246-253) ©RSNA, 2010 All rights reserved. Printed with permission.

## For Your Benefit

### RSNA 2011 Membership Renewal Under Way

RSNA membership renewal for 2011 is under way online, by e-mail or phone.

To use myRSNA® to pay your membership dues online, click "myRSNA" at the top of the [RSNA.org](http://RSNA.org) homepage or go to [myrsna.org](http://myrsna.org). After logging onto myRSNA, click Membership Renewal in the My Profile section. Before beginning the renewal process, take a moment to update your profile with current contact information and save your changes.

All RSNA members have access to RSNA journals online. Because online access to *Radiology* and *RadioGraphics* is tied to membership status, if your payment has not been received by December 31, 2010, your online subscriptions will be automatically inactivated.

Practices can take advantage of RSNA's group billing option. For more information on the option and/or to renew membership by phone, contact the RSNA Membership Department toll-free at 1-877-RSNA-MEM or at 1-630-571-7873, or send an e-mail to [membership@rsna.org](mailto:membership@rsna.org).

### Member Question of the Month

#### Why do you give to the RSNA R&E Foundation?

E-mail us your answer at [tellus@rsna.org](mailto:tellus@rsna.org). Respondents featured in an upcoming issue of *RSNA News* will receive a small gift featuring the new RSNA logo.

**Previous question: What is your biggest challenge in incorporating new technology on the job?**

As a radiologist in a little hospital in the outskirts of Milan in northern Italy, I can say without any doubt that the passage from a single-slice CT to a 64-slice machine has represented a "giant leap forward."

The biggest challenge has been to "tune up" to the full potential of our new CT—the winning method is introducing new techniques into your daily activity in order to set up your skills and get prepared before the opening of the new facility, so you can ultimately add value to your practice.

**Alberto Fumagalli, M.D.  
Melzo, Italy**

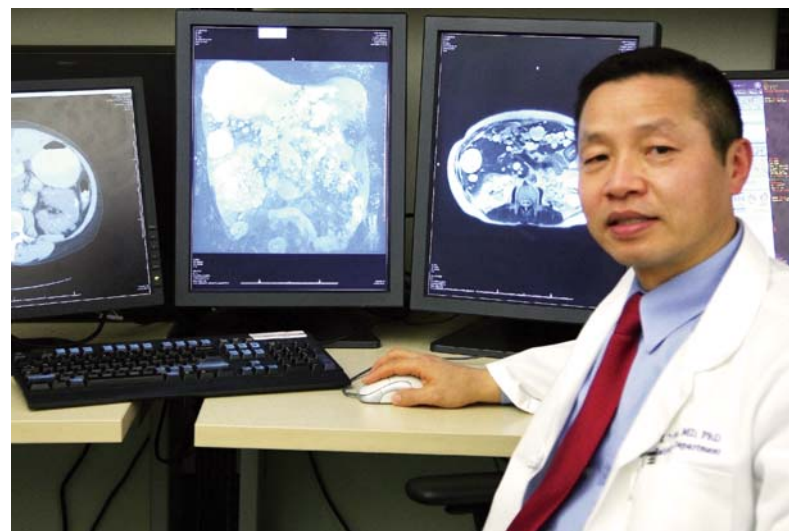
## R&E Foundation Grant Recipient Continues as Reviewer

After receiving two RSNA Research & Education (R&E) Foundation grants early in my career, I was seriously bitten by the research bug and felt compelled to continue my involvement in the grant process by serving as a reviewer with the RSNA R&E Radiology Research Study Section.

Along with wanting to give back to the organization that benefitted my career so substantially, I was also interested in mentoring new junior investigators and getting to know scientists in the imaging community. My last six years as an R&E reviewer have given me the opportunity to achieve these goals, which I find highly rewarding.

Since securing a 1997 Research Resident Grant and a 1999 Research Seed Grant from R&E, I received more than \$12 million in National Institutes of Health grants to pursue research, and in 2010 became chair of the Department of Radiology at the University of Pittsburgh. I believe the R&E grants were crucial in igniting the flame that has fueled the continued growth of my academic career.

As a department chair, I am interested in mentoring medical students and exposing them to the radiology and imaging research that is so critical to their career development.



Along with serving as chair in the Department of Radiology, Kyongtae (Ty) Bae, M.D., Ph.D., is a professor of radiology and bioengineering at the University of Pittsburgh School of Medicine.

## Education and Funding Opportunities



### NIH Grantsmanship Workshop

November 27 • McCormick Place, Chicago

RSNA WILL HOLD a National Institutes of Health (NIH) Grantsmanship Workshop on Saturday, November 27, from 1 to 5 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. Speakers are: Robert J 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, Elizabeth Burnside, M.D., M.P.H., of the University of Wisconsin in Madison, John Haller, Ph.D., of NIH/National Institute of Biomedical Engineering and Bioengineering, and Michael Vannier, M.D., of the University of Chicago. Register online at [RSNA2010.RSNA.org](http://RSNA2010.RSNA.org). Registration fee is \$35.

### Writing a Competitive Grant Proposal

REGISTRATIONS ARE being accepted for the 2011 RSNA Writing a Competitive Grant Proposal program, a grant writing session 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 course that combines didactic and small group interactive sessions and is designed to help radiologic researchers understand and apply the key components of writing

a competitive grant proposal. Topics to be covered are 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 of and tools for getting started on the grant process. Faculty includes: G. Scott Gazelle, M.D., Ph.D., M.P.H., of Massachusetts General Hospital in Boston, Robert Nor-

dstrom, Ph.D., of the National Cancer Institute in Bethesda, Md., Ruth Carlos, M.D., 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](http://RSNA.org/CGP). Contact Fiona Miller at 1-630-590-7741 or [fmiller@rsna.org](mailto:fmiller@rsna.org) for further information.

February 11-12, 2011  
RSNA Headquarters,  
Oak Brook, Ill.  
**Registration Deadline—January 5**

### Medical Meetings

December 2010 – March 2011

#### DECEMBER 9-11

American Society for Radiation Oncology (ASTRO), Chicago Hilton, Chicago  
• [www.astro.org](http://www.astro.org)

#### JANUARY 17-21, 2011

Integrating the Healthcare Enterprise (IHE®) North American Connectathon, Hyatt Regency Chicago  
• [www.ihe.net/Connectathon](http://www.ihe.net/Connectathon)

#### JANUARY 28-31, 2011

Indian Radiological & Imaging Association (IRIA), 63rd Annual Congress, Hotel Ashok, Chankya Puri, New Delhi, India  
• [www.iriadeli2011.com](http://www.iriadeli2011.com)

#### JANUARY 29-30, 2011

Society of Breast Imaging (SBI), Applications and Interpretation of Breast MRI; Fairmont, Miami • [www.sbi-online.org](http://www.sbi-online.org)

#### FEBRUARY 12-17, 2011

International Society for Optics and Photonics (SPIE), Medical Imaging 2011, Lake Buena Vista Orlando, Fla. • [www.spie.org](http://www.spie.org)

#### FEBRUARY 20-24, 2011

Healthcare Information and Management Systems Society (HIMSS), Annual Conference and Exhibition, Orlando, Fla.  
• [www.himssconference.org/](http://www.himssconference.org/)

#### MARCH 6-9, 2011

Society of Thoracic Radiology, Annual Meeting, Hyatt Regency Coconut Point, Bonita Springs, Fla. • [www.thoracicrad.org](http://www.thoracicrad.org)

### Real Estate, Retirement are Focus of RSNA 2010 Financial Seminars

NAVIGATING CHALLENGING economic times requires an evolving financial strategy and updated tools to stay ahead of the curve, according to two experts scheduled to present financial seminars at RSNA 2010.

"Effective Real Estate Investment Strategies," will be presented by J. Michael Moody, M.B.A., an investor and commercial real estate developer for more than 15 years, on Saturday, Nov. 27. The course is designed to provide a strong foundation and working knowledge of real estate, including finding, evaluating, financing, acquiring and selling investment property.

The second seminar, "Asset Protection and Retirement Plan-

ning in the New Era," offering information on dealing with retirement and real estate plans and protecting assets from creditors, will be presented on Monday, Nov. 29, by Barry Rubenstein, B.S., J.D., L.L.M., a practicing attorney and former adjunct professor of taxation at the College of Business of the University of Oregon.

These seminars do not qualify for *AMA PRA Category 1 Credit*™. Additional fees apply and you must be registered for RSNA 2010 to enroll.

To register, go to [RSNA.org/register](http://RSNA.org/register). For more information, contact the RSNA Education Center at 1-800-381-6660 x7772 or e-mail [jcomerford@rsna.org](mailto:jcomerford@rsna.org).

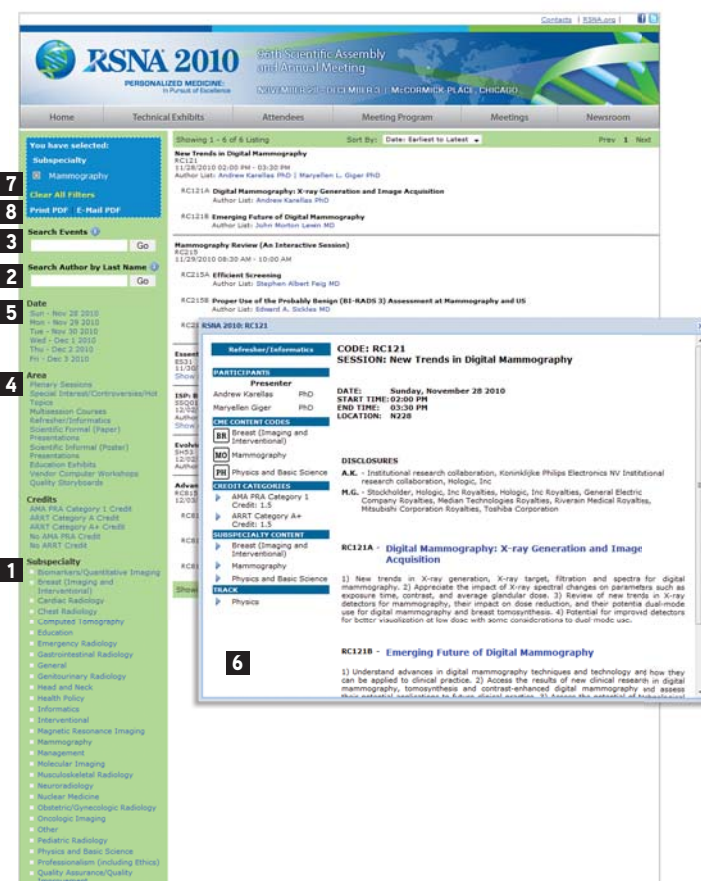
RSNA.org

# Using the Online RSNA Meeting Program

THE ENHANCED online *RSNA Meeting Program* offers detailed information about each of the hundreds of presentations happening at RSNA 2010, in an easy-to-search format. Start by going to [RSNA2010.RSNA.org/search](http://RSNA2010.RSNA.org/search).

Use the links on the lefthand sidebar to filter your search by:

- 1 Subspecialty.** Choose the kind of content you are seeking—for example, click “Mammography” to see all sessions identified as having mammography content. You can choose just one or multiple subspecialties.
- 2 Author.** Enter the last name of the presenter you want to see. Unsure about the spelling? Enter just the first few letters and the system will search possible matches for you.
- 3 Keyword.** In the “Search Events” box, enter keywords pertaining to your area of interest, such as “angiography.” Adding more keywords will refine your search—for example, “CT angiography.”
- 4 Area.** Select the kinds of RSNA annual meeting sessions—refresher courses, education exhibits, scientific presentations, etc.—in which you are interested.
- 5 Date.** Not going to be at RSNA 2010 the entire week? Narrow your search based on the days you’ll be attending.
- 6 Find out more.** Click titles within the results list to read abstracts, learning objectives and other session information.
- 7 Narrowed your search too much?** Click individual filters to remove them from your search, or click “Clear All Filters” to start over.
- 8 Take your schedule with you.** Click “Print PDF” to print your final schedule right away, or “E-Mail PDF” to have an electronic copy sent to you.



### Using a Smartphone?

Go to [m.rsna.org](http://m.rsna.org) to search the program using the RSNA 2010 mobile site. Click “Search Program” and then “Search” in the upper left-hand corner. Use the dropdown boxes to create the filters described above.

## COMING IN NOVEMBER

While the days of double-digit salary increases are becoming a distant memory for radiologists, experts believe this year's flat compensation rates are likely to show a rebound in 2010. Next month, *RSNA News* analyzes 2009 data from the American Medical Group Association (AMGA) 22nd Annual Medical Group Compensation and Financial Survey and asks the experts what radiologists can expect in coming years.

## Retrospective

Celebrating 20 Years of *RSNA News*

### Headlines

Remembering radiologic topics that made the news. This month's feature: a sampling of RSNA annual meeting themes past.



### A Theme is Introduced

A story on the cover of the Fall 1993 issue of *RSNA News* touted the upcoming annual meeting, the first one to have not only a logo but also a theme, “Today's Radiologist”:

“The explosion of scientific knowledge since World War II has thrust RSNA members into a high-tech era of unprecedented technical innovation. To prepare for the future, today's radiologists maintain strong ties with colleagues at home and from around the world in manufacturing, medical physics, hospital administration, radiation technology and the allied sciences. Therefore, the meeting logo depicts the roots of radiology, symbolized by a basic X-ray tube, and the international scope of the field, exemplified by the globe.”



### Crossword Answer

Here are the answers to the 20th anniversary crossword from our July 2010 issue. Missed the puzzle and still want to give it a try? Go to [rsnanews.org](http://rsnanews.org) to try an interactive version, complete with timer and optional clues. A new puzzle will be published in print and online with the November 2010 issue of *RSNA News*.



# Scientific, Education Programs Propel RSNA 2010 to a New Level



Patient-tailored care, dose-reduction efforts, healthcare policy and emerging technology are among the compelling issues slated to make headlines at RSNA 2010. Along with the latest in education exhibits and scientific presentations, attendees can choose from a diverse roster of refresher courses, self-assessment modules (SAMs), applied science, integrated science and practice sessions, and workshops encompassing every specialty.

Evolving techniques and technology as well as patient safety are among the issues reflected in scientific courses planned for RSNA 2010, according to Robert Quencer, M.D., chair of the RSNA Scientific Program



Quencer

“Among these are the evolution in state-of-the-art techniques in all imaging modalities, standardization of patient imaging results, considerations in increasing quantitative data in reports, ongoing efforts in patient radiation dose reduction and development of individualized patient-centric imaging,” Dr. Quencer said.

RSNA 2010 features a record number of education exhibits, said RSNA Board Liaison for Education Richard L. Baron, M.D. “The meeting presents a wide range of education materials in many different formats tailored to each individual’s optimal learning style.



Baron

Wisely campaign, a joint effort to educate the community and provide resources for radiation dose optimization,” continued Dr. Baron, chair of the RSNA Education Committee.

Refresher courses offer an up-to-date review of all aspects of diagnostic radiology, radiation oncology and medical physics, said Valerie P. Jackson, M.D., RSNA Refresher Course Committee chair. “Many new offerings focus on practical clinical problems and quality issues,” Dr. Jackson said. “There is also a wide variety of courses on informatics, healthcare policy and radiation safety, and a continuation of the popular ‘Hands On’ and ‘How To’ workshops.”

“Reducing unnecessary radiation is an important task for the imaging community and will be addressed in refresher courses, exhibits and a special interest session covering the official launch of the Image

This year, RSNA received 11,470 abstract submissions—814 more than last year. Over the summer, the committees and subcommittees selected 1,915 abstracts for education exhibits, 49 for quality storyboards, 1,769 for formal scientific papers and 679 for scientific posters.

## Breast Imaging

Continuing last year’s successful combined breast/nuclear medicine series, RSNA 2010 features a second vertical series highlighting emerging technologies including non-contrast MR imaging, digital tomosynthesis, ultrasound elastography and quantitative breast MR imaging, said Robyn L. Birdwell, M.D., chair of the Scientific Program Subcommittee. “We will also see more integrated science and practice (ISP) sessions: a combined-modality mammography, ultrasound and MR imaging CAD session, an advanced digital application session and a diagnostic ultrasound session,” Dr. Birdwell said. “Abstract submission numbers were high and varied, with an increase in studies regarding diffusion-

weighted imaging, automated whole-breast ultrasound and molecular composition breast mapping.”

Notable education exhibits in breast imaging range from multiple-modality imaging to molecular imaging, said Education Subcommittee Chair Cherie M. Kuzmiak, D.O. “This year emphasizes advances in MR of the breast, including its role in neoadjuvant chemotherapy and diffusion-weighted imaging. Other noteworthy topics include cone-beam breast CT and breast-specific gamma imaging.”

## Cardiac Radiology

Hot topics in cardiac radiology science include dose- and noise-reduction algorithms for cardiac CT angiography and improved CT evaluation of plaque and lesions, said Scientific Program Subcommittee Chair Andre J. Duerinckx, M.D., Ph.D. “There is great interest in new CT technology—256-slice, 128-slice dual-source and, to a lesser extent, 320-slice CT,” Dr. Duerinckx said. He also noted important outcomes in studies involving smokers and patients with diabetes.

“Attendees can expect to see high-level education exhibits on the gamut of congenital and acquired heart disease, with much of the focus on cardiac CT and MR, including technical advances,” said Linda B. Haramati, M.D., Education Exhibits Subcommittee Chair. “Since cardiac imaging covers such a broad range of topics, these exhibits are of great interest and practical utility for pediatric, emergency, chest and cardiac radiologists.”

## Chest Radiology

Driven by public concern regarding CT safety, this year’s program features a number of sessions focusing on dose-reduction methods, according to Warren B. Gefter, M.D., Scientific Program Subcommittee chair. “One of the most promising dose-reduction methods is iterative reconstruction,” Dr. Gefter said. “Decreasing image noise allows significant dose reduction without sacrificing image quality.”

Overall, this year’s scientific sessions emphasize functional over structural imaging and quantitative over subjective interpretations, Dr. Gefter said.

“I am personally very excited about the functional lung imaging session,” he added. “Until now, most pulmonary functional imaging has been done with MR, but this year’s papers will demonstrate dual-energy CT together with non-radioactive xenon gas for functional ventilation imaging, with great promise for asthma and other airway disorders.”

Other notable topics in chest radiology include CT-guided ablation procedures—including radiofrequency, cryotherapy and microwave—for treating inoperable primary lung cancers and pulmonary metastases, Dr. Gefter said. “In response to the recent H1N1 outbreak, the pulmonary infections session emphasizes diagnostic and prognostic chest radiographic and CT findings in this pandemic.”

Chest education exhibits also focus largely on CT applications for infection, especially influenza A, and the “continued inroads” of CT into angiography, said Education Exhibits Subcommittee Chair Sanjeev Bhalla, M.D. “Another hot area is the increasing multimodality approach to thoracic oncology, using CT to help predict who has responded and who will respond to treatment.” Attendees should pay close attention to the increasing role of dual-energy CT and diffusion-weighted MR, Dr. Bhalla added.

Refresher courses covering new guidelines for thoracic imaging based on proposals for the Fleischner Society, Society of Thoracic Radiology and other organizations, are of note, according to Dr. Jackson.

## Emergency Radiology

“Salient topics in emergency radiology this year include methods to decrease CT radiation and optimization of imaging utilization in the emergency department, especially CT pulmonary angiography,” said Jorge A. Soto, M.D., Scientific Program Subcommittee Chair. Incorporating imaging studies from other institutions into PACS,

optimizing CT protocols for trauma and non-trauma patients and the growing use of CT-assisted autopsy are among the noteworthy topics to be covered, Dr. Soto said.

A record number of engaging, high-quality education exhibits cover a wide spectrum of issues reflecting important trends in emergency medicine, said Education Exhibits Subcommittee Chair Kathirkamanathan Shanmuganathan, M.D.

“Exhibits focus on important traumatic and non-traumatic entities head-to-toe, covering the central nervous system, chest, abdomen, pelvis and extremities,” Dr. Shanmuganathan said. “New trends include demonstrating MR’s utility in evaluating acute abdominal pain and dual-energy CT in the acute emergency setting.” Several exhibits illustrate current applications of multidetector CT and ultrasound in diagnosing and triaging acute traumatic and non-traumatic injuries, he said.

## Gastrointestinal Radiology

Hepatic imaging is a hot topic for focal as well as diffuse liver disease in this year’s scientific sessions, according to Benjamin M. Yeh, M.D., Scientific Program Subcommittee Chair.

“In particular, we’re seeing intense explorations of the value of cross-sectional imaging techniques with and without hepatobiliary contrast material to improve the detection and characterization of liver lesions and evaluate hepatocellular carcinoma,” Dr. Yeh said. “We’re also seeing promising developments in our noninvasive imaging options to detect, quantify and monitor diffuse liver disease.” He noted promising results for radiation dose strategies, including iterative reconstruction and reduced kVP for abdominal organ imaging.

“Further developments in contrast-enhanced ultrasound and MR provide options for imaging workup and validate quantitative methods that could be useful in the near future for monitoring cancer therapy—in particular, perfusion imaging in the liver and pancreas,” Dr. Yeh said.

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Education Exhibits Subcommittee Chair William C. Small, M.D., Ph.D., said this year's gastrointestinal exhibits have a particularly strong representation of MR techniques. "They include the use of high-field magnets, advanced imaging techniques including diffusion-weighted applications and investigation of varied contrast materials," he said. "Enteric imaging using both multidetector-row (MD) CT and MR techniques are popular topics as well." Presentations reflect a strong interest in pancreaticobiliary problem solving and multi-energy MDCT, Dr. Small said.

### Genitourinary Radiology/ Uroradiology

MR imaging techniques are undergoing further refinement with high interest in prostate imaging, said Erick M. Remer, M.D., Scientific Program Subcommittee Chair, adding that new developments will be presented in the ISP session, "Prostate MRI: Ready for Prime Time."

Series courses include "The Abdominal Incidentaloma," with practical discussions on incidental discoveries in the kidneys, adrenals, liver and pancreas, as well as "Female Pelvis 2010," exploring MR techniques in benign and malignant disease, imaging the pregnant patient and emergency imaging, continued Dr. Remer. "There is continued interest in renal mass imaging and determining response to antiangiogenic therapies for metastatic renal carcinoma, he noted. One ISP session addresses the important question, "The Renal Mass Diagnostic Imperative: What Research Do We Need?"

Attendees can expect to increase knowledge of dynamic contrast-enhanced MR imaging, diffusion-weighted imaging, elastography and functional renal imaging techniques such as blood oxygen level-dependent MR imaging, Dr. Remer said.

Trends in diffusion-weighted imaging, particularly of the prostate gland, contrast-enhanced ultrasound of renal lesions, post-ablation appearances of renal tumors and dual-energy CT for stone detection and characterization are reflected in this year's



education exhibits as well, said Silvia D. Chang, M.D., Education Exhibits Subcommittee chair.

Innovative refresher courses include, "Contrast Issues 2010: What the Experts Really Do for Allergies, CIN, NSF, and Extravasation," "Reporting and Management of Incidental Abdominal Masses" and a new case-based course on GU emergencies, Dr. Jackson said.

### Health Services Education, Research, Policy and Practice

Presentations continue to focus on radiation and safety in imaging, said Ruth C. Carlos, M.D., M.S., Scientific Program Subcommittee Chair. "There is an increasing use of decision modeling as an adjunct or potential replacement to randomized controlled trials and more robust methods of estimating utilization," she said. Scientific presentations and ISPs focus on value-added imaging and evidence-based utilization, said Dr. Carlos, who noted a continued rise in the quality of abstracts and international submissions.

One new session covers hot topics in residency training, including revising the residency curriculum, the new American Board of Radiology examinations, Residency Review Committee requirements and teaching systems-based practice, according to Dr. Jackson.

### Informatics

Interest in mobile computing and decision support is on the upswing, said Keith J. Dreyer, D.O., Ph.D., Scientific Program Subcommittee Chair. "The quality of hypothesis-driven submissions has stayed strong; however, there is an increasing trend—in quantity and quality—toward applied science," Dr. Dreyer said.

Provocative topics include a CT pulmonary angiography ordering system, radiation dose reporting systems, a resident learning infrastructure, a Medical Imaging Resource Center (MIRC®) viewer application for iPhone® and data mining of radiology and pathology reports, Dr. Dreyer said.

To learn more about Informatics offerings at RSNA 2010, see Page 38.

### Musculoskeletal Radiology

"We received a large number of submissions detailing new procedures including dry needling tendons and fascia, autologous blood injections, treatment of meralgia paresthetica and ozone therapy for treating chronic cutaneous ulcers," said Michelle S. Barr, M.D., Scientific Program Subcommittee Chair. She added that advances in tumor imaging continue to be a focus, including promising new research using 3.0 T diffusion-tensor imaging to study peripheral nerves adjacent to soft tissue tumors. "This new technique could

impact confidence in limb salvage tumor surgeries," she said.

Cartilage studies remain popular, with presentations on cationic contrast agents in glycosamine quantification of articular cartilage and 7.0 T MR, Dr. Barr said. "A particularly creative study describes the effects of body position changes on cartilage deformation."

Dr. Barr noted another study evaluating cartilage abnormalities and their relationship to quadriceps muscle imbalances using a vastus lateralis/vastus medialis ratio, calling the research "exciting for athletes and non-athletes." A European paper quantifies changes in ultra-endurance runners during the 4.5 km 2009 Trans Europe Foot Race, Dr. Barr said.

"We accepted abstracts on topics ranging from patella tendon and hamstring anterior cruciate ligament reconstruction to cytogenic advances in musculoskeletal diseases," said Education Exhibits Subcommittee Chair Tod G. Abrahams, M.D. Exhibits also feature advanced imaging techniques, including the use of iterative decomposition of water and fat with echo asymmetry and least-squares estimation (IDEAL) for decreasing metal artifact, 3.0 T whole-body MR imaging for spinal metastases, high-resolution 3D diffusion-weighted MR neurography for small peripheral nerves and 4.0 T digital subtraction angiography

multidetector CT for preoperative vascular assessment of bone tumors, Dr. Abrahams said. "Participants will obtain a wide breadth of knowledge."

### Neuroradiology/Head and Neck

This year's session features extensive offerings in neuroradiologic clinical applications, according to Scientific Program Subcommittee Chair David B. Hackney, M.D.

"There are strong trends in ear, nose and throat radiology moving into physiologic imaging—diffusion, perfusion and, to a lesser extent, nuclear medicine studies," Dr. Hackney said. Advanced imaging techniques such as diffusion, voxel-based morphometry and volumetrics are emerging for diagnosing and predicting outcome in patients with cognitive disorders, he said.

Diagnosis and characterization of Alzheimer disease and other cognitive disorders are other hot topics, Dr. Hackney continued. Important new studies involve ground-breaking ideas including dual-energy CT to optimize the energy of monochromatic CT for imaging the instrumented spine, correlation of hippocampal volumetry and Pittsburgh Compound B in Alzheimer disease, a high incidence of cerebellar infarction in patients with migraine, diffusion abnormalities in cognitively normal subjects who are ApoE2 carriers and

diffusion-tensor imaging of Parkinsonian syndrome using voxel-based morphometry, Dr. Hackney said.

### Nuclear Medicine

This year, attendees have the opportunity to learn about the initial clinical experience of using integrated PET/MR units, said Homer A. Macapinlac, M.D., Scientific Program Subcommittee Chair. "We offer interesting whole-body oncologic imaging comparisons between PET/CT and MR," he said. "Clinical imaging studies also highlight non-fluorodeoxyglucose radiopharmaceuticals for molecular imaging in oncology, neurology and cardiology applications."

This year's nuclear medicine education exhibits offer increased quality and variety, along with more acute focus on PET and molecular imaging, noted Laurie E. Gianturco, M.D., Education Exhibits Subcommittee Chair.

### Pediatric Radiology

This year, five integrated sessions will combine invited speakers with scientific paper presentations on fetal imaging, pediatric chest imaging, pediatric cardiac imaging and two pediatric neuroradiology sessions, according to Scientific Program Subcommittee Chair Marvin D. Nelson Jr., M.D. "In addition, there will be scientific sessions on radiation dose reduction and monitoring, pediatric gastrointestinal and

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musculoskeletal applications," Dr. Nelson said.

"Interest remains strong in dose reduction techniques as well as in emerging techniques for body MR imaging," said Caroline L. Hollingsworth, M.D., Education Exhibits Subcommittee Chair. "Cardiac imaging is also a popular topic. Novel approaches used for neuroimaging in children will be seen in the education exhibits as well."

State-of-the-art pediatric protocols in CT and MR for optimal imaging algorithms and radiation dose techniques are other noteworthy topics, Dr. Hollingsworth said.

## Physics

CT dose reduction is a strong trend in physics, said Scientific Program Subcommittee Chair Martin J. Yaffe, Ph.D., who also noted a downturn in computer-aided detection abstracts and an increased focus on image-guided therapy.

Provocative ideas include mapping of cerebral oxidative metabolism with MR imaging, molecular breast imaging, time-of-flight CT angiography and in vivo characterization of tissue thermal properties of the kidney in high-intensity focused ultrasound, Dr. Yaffe said.

CT and CT dose are major education issues as well, according to Anthony Seibert, Ph.D., Education Exhibits Subcommittee Chair. "Optimization, the importance of establishing protocol reviews, iterative recon-

struction techniques, understanding CT dose indicators and evaluations of image quality are on display," said Dr. Seibert.

Technological MR imaging innovations, teaching and understanding MR physics, and image quality and artifacts are major themes, Dr. Seibert continued. "Presentations include diffusion-weighted acquisition methods, reviews of MR image artifacts and their causes, all-important issues related to MR imaging safety, education of clinical MR through images and a 'ridiculously' easy explanation of K-space."

More exhibits review multimodality devices and their physics, Dr. Seibert said. "Several ultrasound presentations discuss artifacts as well as elastography techniques with examples of clinical utility," he said. "Exhibits also explore digital tomosynthesis presentations beyond breast applications, including reconstruction methods and pulmonary nodule detection, as well as fluoroscopy and radiography dose reviews and digital radiography exposure monitoring standards."

## Radiation Oncology and Radiobiology

In the few years since it was introduced, the Bolstering Onco-radiologic and Onco-radiotherapeutic Skills for Tomorrow (BOOST) program has experienced considerable growth, said Scientific Program Subcommittee Chair Chung T. Chung, M.D. "The program includes longitudinal radiologic and oncologic presentations with related scientific presentations in lymphoma,

central nervous system, breast, lung, prostate and head and neck."

This year's program also includes presentations in basic biology, gynecology, sarcoma, gastroenterology, quality of life/outcomes and benign tumors, Dr. Chung said. Hot topics are tumor targeting using molecular imaging, MR and CT and stereotactic body radiotherapy, he noted.

## Vascular/Interventional Radiology


While vascular interventions continue to decline, there has been an explosion in cancer-related interventions, said Scientific Program Subcommittee Chair John A. Kaufman, M.D., noting that oncologic intervention abstracts represent 25 percent of the subcommittee's submissions. Hot topics focus on treating new tumors such as mesothelioma and new technologies including irreversible electroporation. Issues such as drainage and biopsy contribute to the strong showing in basic interventional radiology, Dr. Kaufman added. "Important topics are long-term outcomes of liver ablation, clinical service by interventional radiologists, new treatments for metastatic cancer, and patient experience in interventional radiology and improved treatment experience with lower cost for liver embolization."

Interventional oncology submissions were plentiful for education exhibits as well, said Michael D. Darcy, M.D., Education Exhibits Subcommittee chair. "But there is still great diversity spanning all aspects of interventional radiology," Dr. Darcy said.



A wide spectrum of scientific and educational offerings, along with a robust technical exhibition and plentiful amenities, means RSNA 2010 attendees can tailor their annual meeting experiences to their unique combinations of needs and interests.

## Find It Online

Look for this icon  to find more information online. To use course or session numbers, access the online program by going to [RSNA2010.RSNA.org](http://RSNA2010.RSNA.org) and click Meeting Program. Search the program by entering the course or session number in the Search Events box.

## Get Info on the Go with New Technology

### Text for Meeting and Shuttle Help

No matter where you are at McCormick Place, help is nearby—just text your meeting question to 36263 for a prompt answer. Wondering where to pick up a shuttle or which one to take? Text 36263. Standard messaging rates apply.




## Wayfinders

Finding your way around the RSNA annual meeting has never been easier. Stop at one of the new "wayfinders" located throughout McCormick Place to see a detailed floor plan of the convention center. Use the touchscreen to enter where you want to go, such as a specific event, restaurant or even the restroom, and get turn-by-turn directions that you can print to take with you.




## Mobile Site

The RSNA 2010 website is your source for the very latest, up-to-date information on the annual meeting program, meeting services and more. The site is now available in a mobile edition, making it easy to access and browse from smartphones.

 [m.RSNA.org](http://m.RSNA.org)


## RSNA Meeting Program Online

The online *RSNA Meeting Program* offers detailed information about each of the hundreds of presentations happening at RSNA 2010, in an easy-to-search format. See Page 21 for more information on how easy it is to find the annual meeting offerings that best meet your needs.

 [RSNA2010.RSNA.org/search](http://RSNA2010.RSNA.org/search)

## Plan Ahead for the Technical Exhibition

Available on the annual meeting website are detailed maps of the RSNA 2010 technical exhibit halls. Browse a comprehensive, up-to-the-minute list of the exhibitors and their products and services to map your visits to the exhibit floors. Search exhibitors by product category, keyword and more.

 [RSNA.org/showcase](http://RSNA.org/showcase)

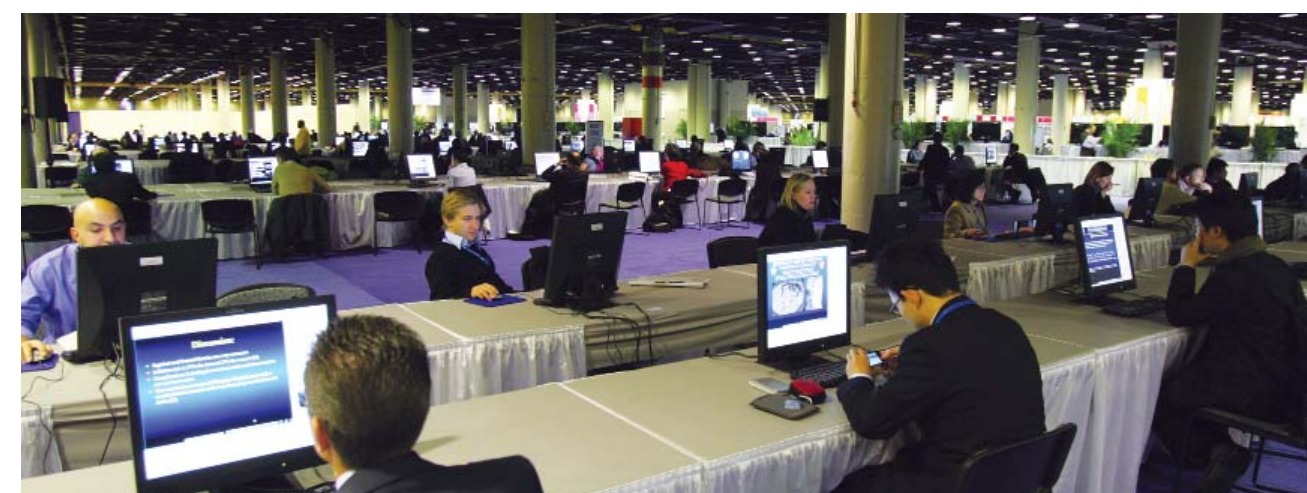
Technical Exhibits at RSNA 2010 will feature more than 600 exhibitors spanning three halls: Hall A in the South Building, Hall B in the North Building, and Hall D in the Lakeside Center. A balanced mix of companies will be located in each hall. Commercial vendors will conduct workshops in Hall D, Lakeside Center.

After you arrive at RSNA 2010, pick up a copy of the new *RSNA Technical Exhibition Guide*, which will provide detailed floor plans of the exhibits areas, along with a directory of exhibiting companies and their contact information.

## 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.





## See RSNA Services Redo

Check out the newly redesigned RSNA Services area (see illustration at right) in its can't-miss location on Level 3 of the Lakeside Center. Anchored by the all-new RSNA Plaza, the RSNA Services area is your place to ask questions, get answers and see demonstrations of RSNA's exceptional services and new initiatives in these areas:

- Career Connect
- RSNA Store
- Membership
- Performance Solutions
- myRSNA
- Journals, News & *RadiologyInfo.org*
- Research & Education Foundation

## Popular Help Stations Move to Grand Concourse

When you're traveling through the Grand Concourse at McCormick Place, be sure to stop by the Media Wall, where counters for the following services are now located:

- Tours & Events
- Chicago restaurant reservations
- Member recognition ribbons
- Help Center

## Enjoy Lower Prices at Food Courts, Bistro RSNA

A new Illinois law that overhauled work rules at McCormick Place has reduced prices for some food at the convention center. According to Chicago Restaurant Partners, prices on all non-branded (Starbucks, for example, is not included) menu items have been cut 20 percent. A meal such as a cheeseburger with french fries or individual pizza with side salad, along with a drink, is now available for about \$9.50 plus sales tax.

Prices are also reduced at Bistro RSNA, a McCormick Place premium dining option that gives attendees the opportunity to enjoy lunch at their convenience. Bistro RSNA provides a delicious variety of menu options, including several fresh and healthy



foods, international cuisine and hearty regional favorites. The ticket price of \$21 covers the entree, soup and salad, choice of beverage and dessert. There are Bistro RSNA locations in the all technical exhibit halls and the Lakeside Learning Center. Purchase tickets online before Nov. 5 and save another \$2.50.

[www.bistrotickets.com](http://www.bistrotickets.com)

## 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 with American Board of Radiology representatives or in various subspecialties. Topic facilitators are present at Bistro tables Monday through Wednesday from 12:15 p.m. to 1:15 p.m. Topics this year are:

### Monday

- ABR/Maintenance of Certification
- Breast Imaging in the Era of Molecular Medicine
- Contrast-enhanced Ultrasound: Where Are We in 2010?
- Interventions in the Female Pelvis
- Managing Your Emergency Room Radiology Practice
- Musculoskeletal Intervention
- Residency Review Committee
- Small Bowel Enterography

### Tuesday

- ABR/Maintenance of Certification
- Breast: General Discussion
- Cardiovascular Imaging in the Era of Molecular Medicine
- CT Angiography: Strategies for Technique Optimization
- Lung Nodules/Lung Cancer
- Pediatric Chest and Cardiac
- Peripheral Vascular Disease Imaging and Interventions
- Spine

### Wednesday

- ABR/Maintenance of Certification
- Emerging Technologies in Breast Imaging
- Female Pelvis: MR Imaging, Emergency Radiology, and Imaging the Pregnant Patient
- Interventional Oncology
- Musculoskeletal Interventions
- Nuclear Medicine: General Discussion
- Sports-related Musculoskeletal Injuries
- Stroke Imaging

## Expand Your Horizons, Get Credit

### RSNA-ESR Oncology Symposium

Essentials in Oncologic Imaging: What Radiologists Need to Know is presented jointly by RSNA and the European Society of Radiology on Wednesday. Topics include principles of



imaging Essentials in Oncologic Imaging and reporting; lung, colon, pancreatic, kidney, ovarian, liver and prostate cancers; terminology, definitions and buzzwords; lymphoma; musculoskeletal neoplasms; and chemo and radiation therapy-induced toxicity.

[SR41-42](#)

### SAMs

More than 30 American Board of Radiology-qualified self-assessment modules (SAMs) will be offered during RSNA 2010 to assist participants in fulfilling maintenance of certification (MOC) requirements. Courses offered as SAMs are indicated in the Meeting Program with an **S** icon.

## Special Interest, Controversies and Hot Topic Sessions

### Early Sessions Return This Year

These sessions, offered throughout the week, address important radiology-related topics that are late breaking or particularly controversial, or require in-depth analysis. In addition, Controversies sessions at 7:15 a.m. on Monday, Tuesday and Thursday and Hot Topic sessions at 7:15 a.m. Monday–Thursday give attendees more opportunities to work critical topics into their course schedules. Sunrise inbound shuttle service, beginning at 6:30 a.m., will get you to McCormick Place in time.

### "Presents" Sessions

The latest installments in RSNA's series highlighting international radiology explore the very latest developments around the world.

### China Presents

This session, offered in conjunction with the Chinese Society of Radiology, features the

latest in radiology research from China. Among the topics to be covered in the session, scheduled for Monday, 10:30 a.m. – 12:00 p.m., are fMRI of prostate cancer, outcomes after wingspan stenting of severe intracranial stenosis, acupuncture research by MR imaging and a radiologic study of severe acute respiratory syndrome (SARS).

[SSC17](#)

### Latin America Presents

This session takes a look at Latin American contributions to imaging science and the role of imaging in endemic diseases in Latin America. Scheduled for Tuesday, 10:30 a.m. – 12:00 p.m., the session also will feature presentations on virtual multidetector CT pneumoesophagoscopy and hysteroscopy in Argentina and embolization of prostatic adenomas in Brazil.

[SSG17](#)

### Quality Showcase

Selected Quality Storyboard authors will share their successful quality improvement projects in a special interest session on Monday from 4:30 to 6:00 p.m. in Room E353A. All Quality Storyboards will be on display in the Lakeside Learning Center throughout the week.

[S124](#)

## Explore Quantitative Imaging, Biomarkers

### Quantitative Imaging Reading Room

The Quantitative Imaging Reading Room educational showcase highlights products and applications that integrate quantitative analysis and structured reporting into the image interpretation and reporting process.

Located in the Lakeside Learning Center, the quantitative imaging showcase brings together various related efforts to provide visual and experiential exposure to the concepts of quantitative imaging and imaging biomarkers.

### QIBA (Quantitative Imaging Biomarkers Alliance)

Learn more about quantitative imaging and the ongoing work of the Quantitative Imaging Biomarkers Alliance (QIBA) committees at the QIBA area adjacent to the Quantitative Imaging Reading Room. Gain a better understanding of how quantitative imaging will impact your practice by attending the special interest session, Imaging Biomarkers for Clinical Care and Research, on Monday from 4:30 to 6:00 p.m. in Room S404CD.

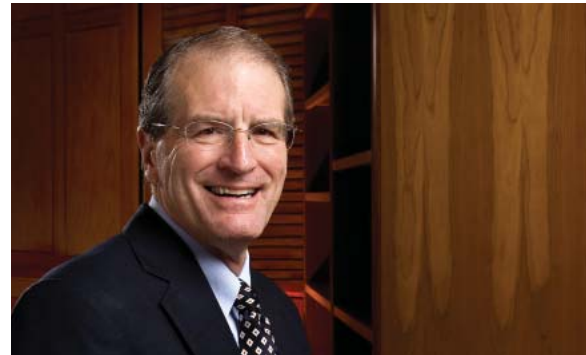
[S123](#)



# RSNA 2010 Gold Medalists



Hussey



Brody



Zerhouni

RSNA will award three individuals its Gold Medal—RSNA's highest honor—at the 96th Scientific Assembly and Annual Meeting. They are David H. Hussey, M.D., William R. Brody, M.D., Ph.D., and Elias A. Zerhouni, M.D.

A major voice in radiation oncology from the very beginning of his distinguished career, 2005 RSNA President **David H. Hussey, M.D.**, is internationally known for his outstanding contributions to patient care, research and training of medical students and residents.

"In addition to being a top clinician and researcher in his field, Dr. Hussey has provided remarkably dedicated and effective service to the radiologic sciences year after year," said 2010 RSNA President Hedvig Hricak, M.D., Ph.D., Dr(hc). "Through his leadership of crucial national organizations, he has played an integral role in shaping the radiologic professions as we know them and encouraging them to work together for the benefit of patients everywhere."

"I have been attending RSNA meetings regularly since the first year of my residency in 1965—it was the first scientific meeting I attended as a physician and, as such, made a significant impact on me in some of the most formative years of my career," said Dr. Hussey, a clinical professor at the University of Texas Health Science Center in San Antonio since 2001.

Dr. Hussey earned his bachelor's degree from Beloit College in Wisconsin and his Medical Doctor degree from Washington

University School of Medicine in St. Louis. He continued his medical training with an internship and a radiology residency at the University of Iowa and a radiation therapy fellowship at the University of Texas MD Anderson Hospital and Tumor Institute.

Between 1969 and 1983, Dr. Hussey was on the faculty at MD Anderson Hospital, where he directed the Fast Neutron Therapy program. He then spent a year in private practice before moving to the University of Iowa to head the radiation oncology division for 15 years. He returned to Texas in 2001, joining the faculty of the University of Texas Health Science Center San Antonio.

Dr. Hussey's research has included a clinical evaluation of fast neutron therapy using the Texas A&M Variable Energy Cyclotron, while his practice has covered a broad range of neoplasms, focused on head and neck, testicular and prostate cancers.

In addition to his service to RSNA, Dr. Hussey served as president of the American Radium Society and the American Society for Therapeutic Radiology and Oncology (ASTRO, now the American Society for Radiation Oncology). He also was a member of the board of trustees of the American Board of Radiology, where he contributed significantly to the recertification examination in radiation oncology.

Dr. Hussey has been honored with Distinguished Alumni awards from the MD Anderson Cancer Center and the Washington University Medical School and fellowships in the American College of Radiology and ASTRO.

A unique combination of innovator, engineer, entrepreneur and physician-scientist, **William R. Brody, M.D., Ph.D.**, earned a national reputation for his fierce devotion to investing in research and education while presiding over two of the world's most prestigious medical research institutions.

"Bill Brody is a rare combination of scientist, clinician, engineer, statesman, business leader, educator and concert pianist," Dr. Hricak said. "He is not only a highly cultured individual, but also a warm, wise and fiercely loyal friend to the institutions he has led and to the individuals that stood by his side in his many fields of endeavor. His vision has propelled into preeminence every entity that he headed."

"While my career has taken me away from direct participation in the field of radiology, I was fortunate to be able to be active in the transition to the second century revolution in diagnostic imaging," Dr. Brody said. "Some of my most memorable and enjoyable times were spent preparing for the RSNA meeting, stimulated by the anticipation of

new discoveries and the introduction of new technology. Even when I'm not able to attend the meeting, I still feel a rush of adrenaline around the last week of November. And the bonds of friendships formed through the radiology community remain strong even today."

Appointed president of the Salk Institute for Biological Studies in 2009, Dr. Brody served the preceding 12 years as president of The Johns Hopkins University, where he forged a deepened commitment to undergraduate education, diversity, the community and research.

A prolific innovator, Dr. Brody holds two U.S. medical patents and has made significant contributions in medical acoustics, CT digital radiography and MR imaging.

The Stockton, Calif., native received his Bachelor's and Master of Science degrees in electrical engineering from the Massachusetts Institute of Technology and his Medical Doctor degree and doctorate, also in electrical engineering, from Stanford University.

Following post-graduate training in cardiovascular surgery and radiology at Stanford, the National Institutes of Health and the University of California, San Francisco, Dr. Brody served as a professor of radiology and electrical engineering at Stanford University from 1977 to 1986.

He followed that position with a 1987–1994 term as the Martin Donner Professor and director of the Department of Radiology, professor of electrical and computer engineering, and professor of biomedical engineering at Johns Hopkins, and radiologist-in-chief of The Johns Hopkins Hospital.

Renowned for his achievements in biomedical engineering, Dr. Brody is a member of the National Academy of Engineering and the Institute of Medicine.

Dr. Brody is proud to include the RSNA Gold Medal among his lengthy list of professional accomplishments.

"I am humbled to be honored as a Gold Medalist and have my name placed alongside those to whom I looked up in the early days of my radiology career," Dr. Brody said.

While many in the medical community came to know the name **Elias A. Zerhouni, M.D.**, during his tenure as director of the National Institutes of Health (NIH) and current assignment as a U.S. presidential science envoy, radiologists have long benefitted from his visionary leadership and prolific research.

"Dr. Zerhouni's story exemplifies why openness to individual talent and imagination have made the U.S. richly successful," Dr. Hricak said. "He has contributed to the greatness of this country and provided a model for others to follow."

Dr. Zerhouni is a senior adviser at Johns Hopkins Medicine in Baltimore, Md., and was named a U.S. presidential science envoy in November 2009. He served as NIH director from 2002 to 2008.

Clinical, scientific and administrative leadership fueled Dr. Zerhouni's success in a variety of endeavors, ranging from implementing reform and launching new programs at the National Institutes of Health to helping create the Institute for Cell Engineering at Johns Hopkins Medicine.

As the 15th director of the NIH, Dr. Zerhouni oversaw the world's largest biomedical research and development agency, with more than 27,000 employees and a yearly budget of \$29.5 billion. He spearheaded a series of reforms that led to the successful passage of the NIH Reform Act of 2006 by the U.S. Congress. He also launched programs including the Roadmap for Medical Research and the Pioneer, New Innovator and Pathway to Independence grant programs.

Prior to joining NIH, Dr. Zerhouni served as chair of the Russell H. Morgan Department of Radiology and Radiological Science as well as executive vice-dean of the Johns Hopkins University School of Medicine from 1995 to 2002.

Dr. Zerhouni's research has focused on developing novel quantitative imaging methods for CT and MR imaging. He holds several patents.

Presenting the RSNA 2007 Eugene P. Pendergrass New Horizons Lecture, "Major Trends in the Imaging Sciences," Dr. Zerhouni declared that imaging would redefine itself in the era of "P4 medicine."

"Medicine will be predictive, personalized, preemptive and finally participatory, in which we shift to a cooperative network made up of patients and healthcare providers," he said.

Dr. Zerhouni was elected to the Institute of Medicine of the National Academy of Sciences in 2000. He has received the gold medal of the American Roentgen Ray Society, two Paul C. Lauterbur awards from the Society of Computed Body Tomography & Magnetic Resonance and the Special Presidential Award of the European Congress of Radiology. He has received the Fleischner Society Medal, been elected a fellow of the International Society for Magnetic Resonance in Medicine and received the International Society of Radiology Bécclère Medal.

# RSNA 2010 Honorary Members/ Special Presidential Award



Manelfe



McCall



Sugimura

Honorary Membership in RSNA is presented for significant achievements in the field of radiology. At RSNA 2010, Honorary Membership will be given to Claude Manelfe, M.D., of Auch, France; Iain McCall, M.D., D.M.R.D., F.R.C.R., of Shrewsbury, United Kingdom; and Kazuro Sugimura, M.D., of Kobe, Japan.

**Claude Manelfe, M.D.**, has spent his career at the forefront of developments in interventional neuroradiology while also leaving his mark in the global radiology movement.

"Professor Manelfe has had an extraordinary career marked by scientific creativity and service," said 2010 RSNA President Hedvig Hricak, M.D., Ph.D., Dr. h.c. "His contributions helped bring about the present high standards of the neuroradiology field."

Dr. Manelfe is a professor emeritus at the Université Paul Sabatier in Toulouse, France, where he served as professor and chair of diagnostic radiology from 1974 to 2004. He also headed the Department of Diagnostic and Therapeutic Neuroradiology at Toulouse's Purpan University Hospital from 1975 to 2003.

A biography published when Dr. Manelfe was awarded honorary membership in the American Society of Neuroradiology (ASNR) in 1999 noted how, during Army service in Paris in the mid 1960s, he met René Djindjian, M.D., himself a pioneer in spinal and superselective neuroangiography. With Dr. Djindjian's help, Dr. Manelfe assembled a key group of young neuroradiologists who would chart the course for interventional neuroradiology in France and Europe in the next decade.

In 1970 Dr. Manelfe received the first scientific prize of the European Society of Neuroradiology and helped found the French Society of Neuroradiology. He would go on to lead both organizations almost 30 years later.

An appointment in 1981 to a visiting professor position at the University of California, San Francisco, would prove pivotal for Dr. Manelfe, as he returned to France with experience in the emerging field of MR imaging and would go on to develop some of the first clinical applications of MR in neuroradiology.

Two years later Dr. Manelfe co-founded, with Pierre Lasjaunias, M.D., Ph.D., the European Course of Neuroradiology. He also helped found the World Federation of Neuroradiological Societies.

As president of the International Society of Radiology (ISR) from 2006 to 2008, Dr. Manelfe oversaw the launch of ISR's first virtual congress in 2007 and the 25th International Congress of Radiology in 2008 in Marrakech, Morocco, just the second time the congress had been held in Africa.

His hundreds of publications include the 1992 textbook *Imaging of the Spine and Spinal Cord*.

Dr. Manelfe has received numerous honors for his work, including the Schinz medal of the Swiss Society of Radiology, Bécélère medal of the International Society of Radiology, and honorary memberships in the Argentinean Society of Neuroradiology and ASNR.

**Iain McCall, M.D., D.M.R.D., F.R.C.R.**, is the quintessential radiology educator.

Dr. McCall has spent much of his musculoskeletal radiology career working alongside radiologists in training and helping improve radiologic education. His leading-edge studies of spinal degeneration and pain, meanwhile, have informed countless radiologists across the globe.

"Professor McCall exemplifies the best that our field has to offer," Dr. Hricak said. "His dedication and his generous efforts to reach out to transitional countries are inspiring."

Since 1996 Dr. McCall has been a professor of radiologic sciences at the University of Keele in Staffordshire, U.K. For the past 33 years he has also worked as a consultant musculoskeletal radiologist at the Robert Jones & Agnes Hunt Orthopedic & District Hospital.

Dr. McCall served as editor of *Skeletal Radiology* from 1997 to 2007, was deputy editor of *Clinical Radiology* from 1987 to

1994 and has been editor of *Imaging Management* since 2006.

As registrar for the National Royal College of Radiologists in the U.K.—one of more than a dozen positions he held in the organization—Dr. McCall promoted the importance of management issues and advised a national radiologic benchmarking program.

As president of the radiology section and chairman of the professional organization committee for the European Association of Radiology (EAR), Dr. McCall revised the five-year radiologic curriculum. As vice-president, Dr. McCall helped merge EAR with the European Congress of Radiology and was the first elected president of the new European Society of Radiology.

Dr. McCall initiated an outreach teaching program for the International Skeletal Society, with teams of radiologists running

three-day courses in countries lacking well-developed specialist musculoskeletal programs across Asia, North Africa, India, Europe and recently in South America.

Dr. McCall has received many honors, including honorary membership in the German, French, Austrian and Hellenic radiology societies and the European Society of Skeletal Radiology, the founders gold medal of the International Society of Radiology and the gold medal of the Turkish Society of Radiology.

"American radiology has been an inspiration to me from my early years in the specialty in science education and latterly in service provision," Dr. McCall said. "I have worked closely with RSNA and its officers during my work for European radiology and the European Society of Radiology—this has been both developmental and constructive.

It is a very great honor for me to be awarded RSNA honorary membership."

Although he began his radiology career in Japan, **Kazuro Sugimura, M.D., Ph.D.**, credits a 1988 research fellowship in the U.S. with establishing his path to becoming an internationally known radiologist, educator and researcher.

After earning his medical degree and doctorate from Kobe University School of Medicine in Hyogo, Japan, Dr. Sugimura traveled to San Francisco to pursue a research fellowship in the Department of Radiology at the University of California. At the university, Dr. Sugimura met two world-renowned radiologists who had a significant impact on his early career and influenced the trajectory of his future—Alexander Margulis, M.D., and Dr. Hricak.

CONTINUED ON PAGE 36

## Special Presidential Award

RSNA presents its Special Presidential Award to individuals who have made significant contributions to the field of radiology or the radiologic sciences. At RSNA 2010, the Special Presidential Award will be given to Hans G. Ringertz, M.D., Ph.D., of Linköping, Sweden.

During his nearly 50 years in medicine, there is virtually nothing that **Hans G. Ringertz, M.D., Ph.D.**, hasn't done to preserve, defend, expand and advance radiology.



Ringertz

"Professor Ringertz is the proverbial man for all seasons," said 2010 RSNA President Hedvig Hricak, M.D., Ph.D., Dr. h.c. "He is the pioneer of pediatric MR imaging, a world leader in radiation safety, and headed one of the most prestigious university radiologic departments in the world. His membership on and presidency of the Nobel committee always ensured biomedical imaging a fair review."

Since 2006, Dr. Ringertz has been a professor of radiology at Linköping University Hospital in Linköping, Sweden, and chairman of the board for the university's Centre for Medical Imaging

Science and Visualization. He was a professor and chairman of radiology at the Karolinska Institute in Stockholm from 1984 to 2006 and has served as a professor emeritus since.

Dr. Ringertz published in 1960–1961 some of the first peer-reviewed papers on the molecular structure of myelin. He completed his biophysics doctorate at Karolinska Institute in 1969 with a thesis on the detailed molecular structure of purins and their degradation. In 1984, he published some of the earliest peer-reviewed papers on MR imaging in children and neonates while a visiting professor at the University of California San Francisco (UCSF).

During his career Dr. Ringertz has researched pediatric cardiac, urogenital and oncologic imaging, with specific focus on measurements in pediatric radiology

especially for evaluation of normal versus abnormal size of structures and organs. He has also been a radiation protection advocate, with longtime service to many organizations including the International Commission on Radiation Protection.

Dr. Ringertz served for 20 years on the Nobel Assembly for Physiology and Medicine, which he chaired in 2003.

Dr. Ringertz received RSNA honorary membership in 1997. He also has received honorary membership in numerous other societies around the globe and the gold medal of the European Congress of Radiology (ECR) in 2005.

"This very special award is a great honor for me," Dr. Ringertz said. "Personally I owe most of whatever achievement I have had in my professional career to my mentors, most of whom are American. With that background, getting first RSNA honorary membership and now the special presidential award strikes me as unreal—it is I who should express my gratitude to American radiology for all the possibilities it has given to me."



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 24.25 AMA PRA Category 1 Credits™ at RSNA 2010 plenary sessions.

Previews of selected lectures will appear in the November issue of *RSNA News*.

## Saturday

12:00 – 2:00 p.m.

### AAPM/RSNA Physics Tutorial for Residents

Communicating Radiation Dose, Risks, and Benefits in Medical X-Ray Imaging

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

1:00 – 5:00 p.m.

### NIH Grantsmanship Workshop\*\*

Moderator: Robert J. Nordstrom, Ph.D.

### Effective Real Estate Investment Strategies\*\*

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

2:15 – 4:15 p.m.

### AAPM/RSNA Tutorial on Equipment Selection

PET/CT and SPECT/CT

Organizer: Jerry A. Thomas, M.S.

## Sunday

8:30 – 10:15 a.m.

### Presentation of Gold Medals

• David H. Hussey, M.D.

• William R. Brody, M.D., Ph.D.

• Elias A. Zerhouni, M.D.

(See Pages 31-32 for honoree biographies)

### Dedication of 2010 Meeting Program to the memory of Peggy J. Fritzsche, M.D.

#### President's Address

Oncologic Imaging: A Guiding Hand of Personalized Cancer Care

Hedvig Hricak, M.D., Ph.D., Dr. h.c.,  
RSNA President

## Special Lecture

Personalized Cancer Treatment

John Mendelsohn, M.D.

## Annual Oration in Diagnostic Radiology

Evaluation and Management of Focal Pulmonary Lesions: New Findings, Innovative Strategies, and the Quest for Personalized Approach

Christian J. Herold, M.D.

10:45 a.m. – 12:15 p.m.

## Oncodiagnosis Panel

Ewing Sarcoma

Ruth F. Lavigne, M.D., Mark J. Kransdorf, M.D.,  
Mark D. Murphey, M.D., H. T. Temple, M.D., Lars  
Wagner, M.D.

4:00 – 4:10 p.m.

## Report of the RSNA Research & Education Foundation

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

4:10 – 5:45 p.m.

## Image Interpretation Session

Moderator: Susan M. Ascher, M.D.

Panelists: Richard L. Baron, M.D., Mauricio Castillo, M.D., William P. Dillon, M.D., John R. Mayo, M.D., Mark D. Murphey, M.D., Mini N. Pathria, M.D., Caroline Reinhold, M.D., Valerie Vilgrain, M.D., Charles S. White, M.D., Ronald J. Zagoria, M.D.

## Monday

1:30 – 2:45 p.m.

## Presentation of Honorary Memberships

• Claude H. Manelfe, M.D.

• Iain W. McCall, M.D.

• Kazuro Sugimura, M.D.

(See Pages 33-34 for honoree biographies)

## Eugene P. Pendergrass New Horizons Lecture

Strategies for the Earlier Detection of Cancer

Sanjiv S. Gambhir, M.D., Ph.D.

## Special Lecture

Real Reform: Facing the Complexity of Health Care

Atul Gawande, M.D.

1:30 – 2:45 p.m.

## AAPM/RSNA Basic Physics Lecture for the Radiologic Technologist

Hybrid Imaging

Organizer: Douglas E. Pfeiffer, M.S.

1:30 – 5:45 p.m.

## Physics Symposium

Fundamentals for Clinical Dosimetry

Moderator: David W.O. Rogers, Ph.D.

4:30 – 7:30 p.m.

## Asset Protection and Retirement Planning in the New Era\*\*

Barry Rubenstein, B.S., J.D., LL.M.

## Tuesday

1:30 – 2:35 p.m.

## Special Address

President Bill Clinton

(Tickets required. Go to [RSNA2010.RSNA.org](http://RSNA2010.RSNA.org) to obtain tickets and to learn how attendees without tickets can view the lecture in one of the simulcast rooms.)

## RSNA 2010 Honorary Members

CONTINUED FROM PAGE 34

"It is no exaggeration to say that this encounter with Drs. Margulis and Hricak offered me a new chapter in my life as a radiologist," Dr. Sugimura said.

Dr. Hricak noted that Dr. Sugimura displayed a rare combination of talent, dedication and kindness as a fellow, and working with him was a delight. "After his fellowship was over, it was not a surprise to see him quickly take on important leadership roles in his home country at a remarkably young age," she said. "His vision and dedication built the field of women's imaging in Japan and the excellence of his research established Japan as an important player in genitourinary MR imaging research worldwide. Furthermore, his friendliness and remarkable leadership skills have helped bring about close international collaboration in the field."

## Wednesday

1:30 – 2:45 p.m.

## Announcement of Education Exhibit Awards

## Presentation of Special Presidential Award

• Hans G. Ringertz, M.D., Ph.D.

(See Page 34 for honoree biography)

## Presentation of the Outstanding Educator Award

• Gillian B. Lieberman, M.D.

• Kitt Shaffer, M.D., Ph.D.

## Presentation of the Outstanding Researcher Award

• Charles A. Mistretta, Ph.D.

(Biographies of the 2010 Outstanding Researcher and Outstanding Educators will appear in the November issue of *RSNA News*.)

## Dedication of the 2010 Annual Oration in Radiation Oncology to the Memory of Frank L. Hussey Jr., M.D.

"RSNA meetings refresh me and give me the power for the next year," said Dr. Sugimura, an RSNA member since 1984. "I believe that my mission is to convey my deep impression about this meeting to Japanese radiologists."

Embracing the deep commitment to the specialty demonstrated by his American mentors, Dr. Sugimura returned to Japan, where he encouraged many young radiologists to follow a similar path.

Dr. Sugimura began his prestigious academic career in 1980 as an assistant professor of radiology at Kochi Medical College and in 1994 became a professor and chair of radiology at Shimane Medical University. In 1999, Dr. Sugimura was appointed a professor and chair of radiology at Kobe University School of Medicine, and in 2001, he assumed his

## Annual Oration in Radiation Oncology

Single-Dose Radiation Therapy (SDRT): A changing Paradigm Evolving from Intensity-modulated Radiation Therapy

Zvi Y. Fuks, M.D.

## Thursday

1:30 – 1:40 p.m.

## Inauguration of RSNA Board of Directors for 2011

1:40 – 1:50 p.m.

## Introduction of 2011 AAPM Officers and Council Chairmen

1:50 – 2:45 p.m.

## RSNA/AAPM Symposium

Digital Media and Design: Slicing Through Complexity in Medical Imaging

Moderator: Jeffrey H. Siewerdsen, Ph.D.

## Friday

12:45 – 3:15 p.m.

## Friday Imaging Symposium

Nontraumatic After-hours Radiology

Moderator: Suresh K. Mukherji, Ph.D.

current position as a professor and chair of radiology at Kobe University Graduate School of Medicine.

Dr. Sugimura is also revered for his work in women's imaging. In 1996 he served as one of the directors-at-large for the Society for the Advancement of Women's Imaging in the U.S. and in 2000 established the Japanese Society for the Advancement of Women's Imaging. Since 2000, Dr. Sugimura has served on the *RadioGraphics* Women's Imaging Panel for RSNA.

"I am very proud and deeply honored in being awarded RSNA Honorary Membership," Dr. Sugimura said. "I continue to take part in the RSNA meeting and to make this outstanding meeting known to more radiologists in Japan and Asia."

# Courses, Presentations and Demonstrations Examine Critical Topics



## Associated Sciences Program

Among the topics to be tackled during the RSNA 2010 Associated Sciences Program are regulatory and business ethics and the role of ethics in clinical excellence. The program is sponsored by the Associated Sciences Consortium, 12 organizations representing radiologic nurses and technologists, radiology business managers and administrators and other allied professionals. Associated Sciences sessions for RSNA 2010 are:

### Monday, November 29

- Ethical Dilemmas: Regulatory and Business Ethics in Medicine Today
- Ethical Dilemmas: The Vital Role of Ethics in Clinical Excellence
- Picking Up the Pieces: Forensic Radiography Following Mass Disasters
- Imaging Facility Design in an Age of Diminishing Resources

### Tuesday, November 30

- Who's Driving Radiology: Trends in Hospital/Radiologist Alignment
- The Clinical Impact of Molecular Imaging
- New Regulations and Their Impact on Radiology Practice
- Managing Risk for Optimal Patient Safety

### Wednesday, December 1

- Radiology's Changing Dynamics
- Imaging through a Cross-cultural Lens: A Global Perspective on Ethics, Standards and Human Resource Issues

### ASRT@RSNA 2010

This 1½-day education program for radiologic technologists will kick off with a session on forensic radiology and radiography—past, present and future. Technologists may earn continuing education credit through ASRT@RSNA 2010, which begins Wednesday afternoon and runs all day Thursday.

### Wednesday, December 1

- Forensic Radiology and Radiography: Historical Perspective, Current Status, and Future Challenges
- Multimodality-Proficient Cardiac Imaging Technologist
- Integrating Imaging into Radiation Therapy
- Current Trends in Imaging

### Thursday, December 2

- The Improbable is Very Probable
- Multidisciplinary CT Operation Gap Analysis: Findings, Follow-through and Future Practice—A Canadian Perspective
- Trauma Care in the United Kingdom: The Changing Roles of Radiographers
- ACR and Intersocietal Accreditation Commission (IAC) Accreditation
- Digital Imaging: What Every Radiographer Needs to Know
- Lateral Violence and Bullying in the Workplace

## Informatics

### Latest in Image Sharing, Performance Solutions Area Headline Informatics Offerings

Informatics demonstrations at RSNA 2010 highlight the latest in image sharing technology as well as solutions for uniform reporting, effective radiology searching and more.

### IHE® Image Sharing Demonstration—South Building (Hall A), Booth 2852

At the Integrating the Healthcare Enterprise (IHE®) Image Sharing Demonstration, learn 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 be made 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.

### Performance Solutions Area—RSNA Services (Lakeside Center Ballroom, Level 3)

Visit these kiosks to take guided tours of RSNA's free informatics technology-based tools to improve performance in research, education and clinical care:

- Medical Imaging Resource Center (MIRC®)—set of free software tools to support radiology teaching files and imaging clinical trials
- RadLex®—comprehensive lexicon for standardized indexing and retrieval of radiology information resources
- Reporting—free library of best-practices report templates that creates uniformity and improved communication

Also featured in this area will be demonstrations of myRSNA™, the personalized radiology web portal available exclusively to RSNA members.

## Informatics Courses

Learn more about using RSNA's performance solutions, as well as other radiology topics such as advanced imaging tools and literature searches, in Informatics refresher courses. See the online *RSNA Meeting Program at RSNA 2010*. [RSNA.org](http://RSNA.org) for titles and times and to register.

### 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](http://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 the National Network of Libraries of Medicine (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.





## Refresher Courses

More than 300 refresher courses on traditional and cutting-edge topics will be offered at RSNA 2010. Refresher courses:

- Require advance registration\*
- Are conducted in a multiple- or single-instructor lecture format
- Offer *AMA PRA Category 1 Credit™* for physicians and Category A+ CE credit for technologists

\* Onsite refresher course ticketing has been eliminated. All ticketed courses must be confirmed prior to November 24 to guarantee a seat. Registrants without tickets will be allowed entrance into a course after all ticketed registrants have been seated.

For more information or to register, go to [RSNA2010.RSNA.org](http://RSNA2010.RSNA.org).

## Digital Presentations

This year's digital presentations offer a vast array of electronic education and scientific posters covering a wide variety of specialties and modalities.

The 1,915 education exhibits and 679 posters in the Lakeside Learning Center can be viewed on computers within each subspecialty in lounge areas known as "communities," which also allow for group viewing of scientific posters and/or electronic education exhibits. During the lunch period, those computers are reserved for CME discussions.

Education exhibits will be presented as backboard panel exhibits, standalone computer demonstration exhibits, or electronically; all scientific posters are presented electronically.

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.

Education exhibits are designed to review the diagnosis of a specific condition using either a single modality or multi-modality 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.

In addition to the computers located in each subspecialty community lounge, dedicated computers are also available for viewing all electronic science and education presentations.

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 29.

## Eye on Chicago

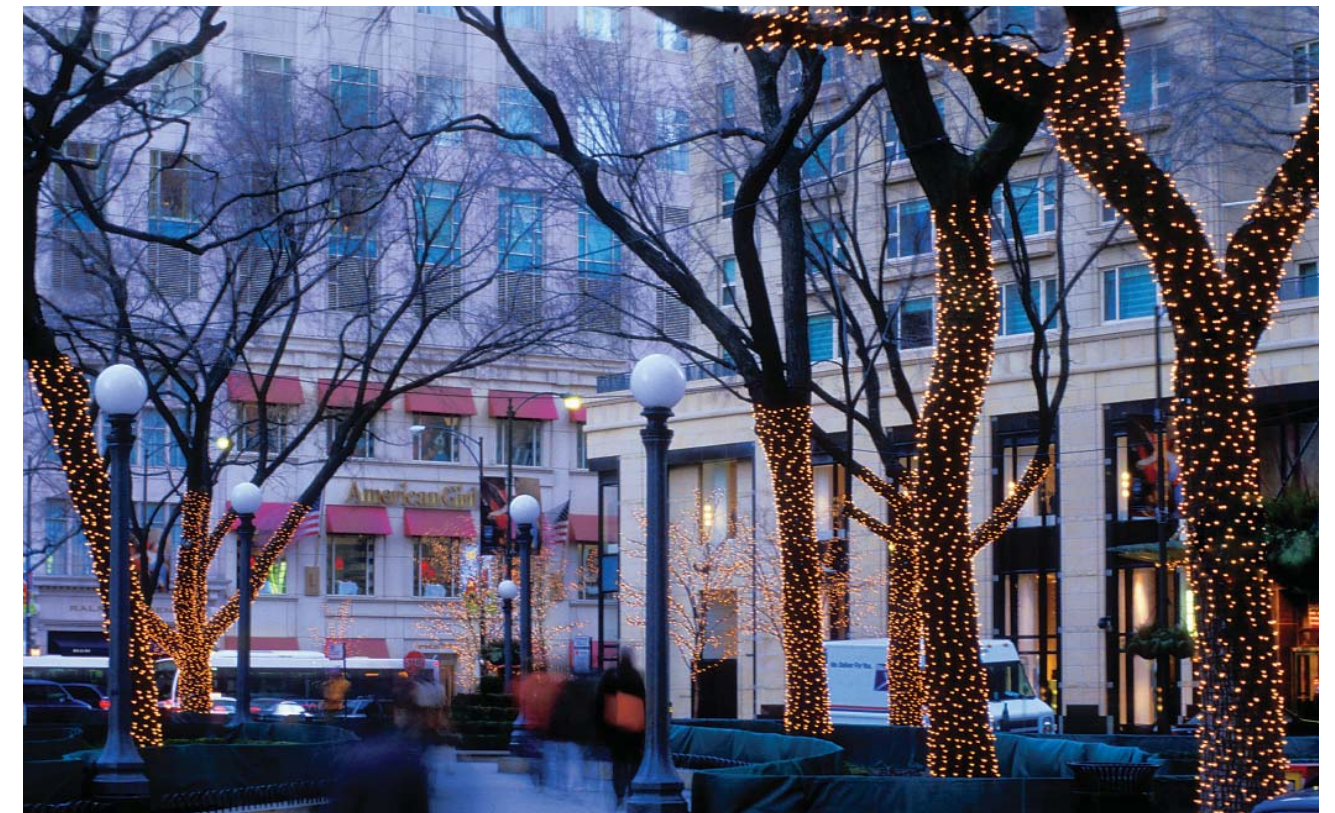
### The Windy City Welcomes You

With their "We're Glad You're Here®" program, Mayor Richard M. Daley and the Chicago Convention & Tourism Bureau welcome RSNA 2010 attendees and exhibitors to the Windy City. Before you travel, visit [www.choosechicago.com/rsna](http://www.choosechicago.com/rsna) for tools like these to help plan your Chicago stay:

- MyChicagoTrip Planner—create sight-seeing itineraries based on your schedule and interests. Itineraries include links to more information, including maps, and can be downloaded e-mailed to friends and family.
- "Affordable Chicago" video—learn more about Chicago attractions offering free admission, inexpensive travel options such as the "L" trains and how you can schedule a free tour of the city's highlights guided by a Windy City resident.
- Searchable Calendar of Events—discover special events and attractions taking place during RSNA 2010.
- Sweet Deals Chicago—find out where you can use your American Express card to enjoy discounts on dining, shopping, entertainment and more.

Once you're in Chicago, look for:

- "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.
- 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.
- Chicago kiosk near the media wall in the McCormick Place Grand Concourse, offering help with restaurant reservations and information about special offers and discounts.



# Housing & Registration News



## Final Advance Registration

North Americans who register for RSNA 2010 by November 5 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 forms are received by October 22. Registration will be accepted after these dates but will be processed at the increased onsite rate. Attendees must obtain badges, tickets and other conference materials at the McCormick Place Convention Center.

### Housing

The deadline for housing reservations and changes through RSNA is **November 5**. After that date, you can contact the hotel directly. For more specific information, go to [RSNA.org/register](http://RSNA.org/register).

### Exclusive Air Discounts

RSNA's special discount agreement with United Airlines is not available to the general public. *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*. You can also call United (1-800-521-4041) or your personal travel agent and mention the United promotional code to be eligible for discounted fares.

International travelers can receive up to a 20 percent discount with the Star Alliance network by calling the reservation office of any participating Star Alliance member airline and quoting Convention Code: UA16S10. Booking office information is available at [www.staralliance.com/conventionsplus](http://www.staralliance.com/conventionsplus).

Custom travel itineraries can be booked through Gant Travel—RSNA's official domestic travel agency for the past decade—Monday–Friday, 7:00 a.m. to 6:00 p.m. Central Time. Additional taxes and booking fees will apply to airline ticket prices and after-hours emergency assistance. Contact Gant Travel at 1-877-613-1192, international +1 011 630-227-3873 or [RSNA@ganttravel.com](mailto:RSNA@ganttravel.com).

### Important Dates for RSNA 2010

<b>October 22</b>	International deadline to have full-conference materials mailed in advance
<b>November 5</b>	Final discounted advance registration, housing and course enrollment deadline to have full-conference materials mailed in advance
<b>Nov. 28 – Dec. 3</b>	RSNA 96th Scientific Assembly and Annual Meeting

### Onsite Registration

Those who registered after the mail deadline and/or who did not receive badges in advance should go to the Professional Registration, Already Registered, line in the Lakeside Center Ballroom. Those who did not register in advance and wish to obtain a badge should proceed to the New Registration line in the ballroom.

### Hours of Operation

Saturday, Nov. 27  
12:00 p.m. – 6:00 p.m.

Sunday, Nov. 28 – Thursday, Dec. 2  
7:30 a.m. – 5:00 p.m.

Friday, Dec. 3  
7:30 a.m. – 12:00 p.m.

For more information about registering for RSNA 2010, visit [RSNA2010.RSNA.org](http://RSNA2010.RSNA.org), e-mail [reginfo@rsna.org](mailto:reginfo@rsna.org), or call 1-800-381-6660 x7862.

### Registering for RSNA 2010

There are four ways to register for RSNA 2010:

#### 1. Internet — Fastest way to register!

Go to [RSNA.org/register](http://RSNA.org/register)

#### 2. Fax (24 hours)

1-800-521-6017  
1-847-996-5401

#### 3. Telephone

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

#### 4. Mail

Experient/RSNA 2010  
568 Atrium Drive  
Vernon Hills, IL 60061 USA

### Registration Fees

By Nov. 5	After Nov. 5	
\$ 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

## Tours & City Events

### Jazz Performance Benefits R&E Foundation

Enjoy world-class Latin jazz performances in one of the city's finest jazz clubs while benefitting RSNA's Research & Education (R&E) Foundation. Both performances are among the RSNA-sponsored tours and events at RSNA 2010.

The Craig Russo Latin Jazz Project will perform at 8 p.m. and 10 p.m., Monday, Nov. 29, at the Jazz Showcase at Dearborn Station, 806 S. Plymouth Court. Craig Russo, M.D., a neuroradiologist and RSNA member, and his group will treat you to a rich listening experience in one of the country's most renowned acoustic jazz listening rooms. The price is \$25 person and a portion of the proceeds will benefit the R&E Foundation.



RSNA teams up with In the Loop—Chicago (ITLC) and Bloomingdale's to offer Tours & Events packages. View architectural wonders, explore unique neighborhoods, learn a new cooking technique and more. Ticket packages allow you to combine selected tours and events for even more

savings. Enroll for RSNA Tours and events online when registering for the annual meeting or adding courses at [RSNA.org/register](http://RSNA.org/register). The RSNA Tours & Events brochure is available at [RSNA2010.RSNA.org](http://RSNA2010.RSNA.org).

# Navigating RSNA 2010

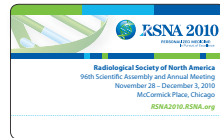
## Name Badge

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 2010 Pocket Guide is an important, easy-to-use reference guide with two main sections:

### Overview of RSNA 2010

- 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, 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



## RSNA Meeting Program online, Official Meeting Bag and Lanyard

Finding presentations to fit your schedule at RSNA 2010 is easier than ever using RSNA's online program and user-friendly search engine (See *RSNA.org*, Page 21, for more details). Abstracts and learning objectives will not be published in the printed program but will instead be available online only along with the complete roster of special interest/controversies/hot topic sessions, multisession and refresher/informatics courses and vendor computer workshops.

Along with searching for courses by title and name of presenter, users can search the online program by day, area and subspecialty, and sort findings from earliest to latest. The program will remain online after the meeting.

One complimentary copy of the *RSNA 2010 Program in Brief*, official meeting bag and lanyard are available with the presentation of a voucher at the distribution counters located in the Lakeside Center, Level 2, Hall E (near coat check), or in the Grand Concourse, Level 3. Additional copies of the *Program in Brief* will be available for purchase at the RSNA Store.

The full *RSNA Meeting Program* online is available at [RSNA2010.RSNA.org](http://RSNA2010.RSNA.org).

## 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 McCormick Place. Each day's education will also be available online at [RSNA.org/bulletin](http://RSNA.org/bulletin).

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.

## Technical Exhibition Guide

The *Technical Exhibition Guide* is the most up-to-date source of information for navigating the annual meeting. In addition to floor plans and contact information for the more than 600 technical exhibitors, the Guide provides a detailed map of the Lakeside Learning Center. Distributed in bins adjacent to the *Daily Bulletin*, the *Technical Exhibition Guide* is an essential navigational tool for RSNA attendees and a great traffic builder for exhibitors.

## 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 hours. Check signage 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 to the McCormick Place Convention Center Station in just 7 minutes. Stations are located within walking distance to 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 [RSNA2010.RSNA.org](http://RSNA2010.RSNA.org) and click on 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 operated by FedEx Office on the Grand Concourse – Level 2.5.
- **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 2010, will be available at the Help Center (Grand Concourse, Level 3) and at Professional Registration (Lakeside Center Ballroom) to assist with questions.

## RSNA R&E FOUNDATION ANNOUNCES 2010 GRANT RECIPIENTS

*Continued from Page 15*

**Nancy A. Resteghini, B.A., M.S.**  
Brigham and Women's Hospital  
*Characterization of Breast Cancer and Receptor Status in Correlation with Magnetic Resonance Imaging (MRI) Morphology and Kinetics*

**Gabriel Rudd-Barnard, M.S.**  
University of Southern California, Keck School of Medicine  
*A Comparison of Systolic and Diastolic 3D First-Pass Myocardial Perfusion Imaging in Patients with Arrhythmia*

**Jean-Claude M. Rwigema, B.S. (Eng)**  
University of Pittsburgh  
*Evaluation of Strategies for Radiation Damage Mitigation Using Small Molecule Mitochondrial Targeted Drugs*

**Abizer Sakarwala, B.S., M.S.**  
University of Cincinnati Medical Center  
*Value of 3Tesla MRI in Detecting and Targeting Lesions for Transrectal Ultrasound Guided Biopsies in Patients with High Clinical Suspicion of Prostate Cancer*

**Michael W. Tee, B.S.**  
Cleveland Clinic Foundation  
*Evaluation of Gradient Index in Quantifying Toxicity Risk from Gamma Knife Radiosurgery of Pituitary Adenomas*

**Benjamin Wang, B.S.**  
University of Pennsylvania  
*Glycine Detection with MRI Through Chemical Exchange-Dependent Saturation Transfer (CEST) Imaging*

**Shota Yamamoto, B.S.**  
University of California, Los Angeles, David Geffen School of Medicine  
*Radiogenomic Analysis of Prostate Cancer Utilizing Gene Expression Profiling and Advanced MRI*

**Yao Yu, B.S.**  
University of California, Davis  
*Determination of the Optimal Image Guided Radiation Therapy Protocols for the Treatment of Head and Neck Cancers*


**PHILIPS**  
sense and simplicity

### EDUCATION SCHOLAR GRANT

**Julia Fielding, M.D., and Alfred D. Llave, M.D.**  
University of North Carolina at Chapel Hill  
*Meeting the Challenges of Radiology Resident Education in the 21st Century: Redefining the Radiology Classroom through RAD-SHARE, Radiology (See, Hear And Respond Education), A Collaborative Pilot Endeavor*  
Henry P. Pendergrass, M.D. Scholar Grant

**Marilyn Goske, M.D.**  
Cincinnati Children's Hospital Medical Center  
*Developing a "Best Practice" National Registry for CT Scans in Children*  
Harvey and Jean Picker Scholar Grant

**Mannudeep K. Kalra, M.D.**  
Massachusetts General Hospital  
*CT Virtual Autopsy for Radiation Dose Reduction and Radiological-Pathological Correlation Training Programs*

 imagination at work

**Aine Kelly, M.D.**  
University of Michigan  
*The Influence of Evidence-based Teaching Methodology on Appropriate Imaging Utilization in a Large Academic Radiology Department*

 imagination at work

**Jie Li, M.D.**, Beijing Cancer Hospital & Beijing Institute for Cancer Research, Peking University School of Oncology and **Elizabeth A. Morris M.D.**, Memorial Sloan-Kettering Cancer Center

*Developing an Educational Program on Breast Imaging for the Chinese Radiology Society with International Cooperation*  
Derek Harwood-Nash Scholar Grant

**Lonie R. Salkowski, M.D.**  
University of Wisconsin School of Medicine and Public Health  
*A Paradigm Shift in Teaching Anatomy: Development of New Educational Methods for Health Care Professionals to Learn Anatomy through Radiology Correlation*

**PHILIPS**  
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### RSNA/AUR/APDR/SCARD RADIOLOGY EDUCATION RESEARCH DEVELOPMENT GRANT

**Jeanne Hill, M.D.**  
Medical University of South Carolina  
*Achieving Excellence in Communication Skills: Development and Implementation of an Objective Structured Clinical Examination to Evaluate Radiology Specific Communication Skills*

**Nina Kowalczyk, Ph.D.**  
The Ohio State University, College of Medicine  
*Best Practices in Creating a Critical Thinking Educational Environment for Radiation Science Students*



# Chicago Restaurants Offer Something for Every Taste at RSNA 2010



No matter what your mood or palate, Chicago offers a wide variety of dining options for even the most discriminating tastes. Because the nightlife is equally renowned, we've added a selection of Chicago's finest clubs and lounges to explore after a full day at RSNA 2010. More information about Chicago and its many attractions is available from the Chicago Convention and Tourism Bureau website at [www.choosechicago.com/RSNA](http://www.choosechicago.com/RSNA).

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

## AMERICAN

### 676 Restaurant and Bar

676 N. Michigan; 1-312-944-6664

This Omni Chicago Hotel restaurant overlooking the Magnificent Mile boasts a moonscape mural on the ceiling. Menu highlights include flatbreads, a raw bar and "charcuterie," a selection of antipasti meats. *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. Adding to the drama, some fish are boned table-side. *Very Expensive*

### Blackbird

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

This trendy hot spot serves contemporary American cuisine with seasonal emphasis. *Expensive*

### Chicago Firehouse Restaurant

1401 S. Michigan; 1-312-786-1401

Escargot and vegetable strudel share the appetizer menu at this restaurant housed in a turn-of-the-century firehouse, complete with the original fire

poles. Casual or formal dining is available and wines are mostly American. *Expensive*

### 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*

### NEW Deca

160 E. Pearson; 1-312-573-5160

Alongside the fountain in the lobby of the Ritz Carlton, this art deco-themed brasserie presents reasonably priced entrees, a large selection of salads and even sliders in a sophisticated setting. *Moderate*

### NEW Epic

112 W. Hubbard; 1-312-222-4940

American food with a French flair is served in a setting worthy of this restaurant's name. Two kitchens serve around 200 in the split-level dining room while the Chicago skyline is showcased through the 24-foot windows. *Expensive*

### Eve

840 N. Wabash Avenue; 1-312-266-3383

This upscale Gold Coast spot maintains a casual but sophisticated ambience and offers a modern menu with a signature dish of grilled lobster sausage with chanterelles, bacon and maple bechamel. *Expensive*

### The Gage

24 S. Michigan; 1-312-372-4243

Housed in a 1930s hat factory across from Millennium Park, the Gage offers an atmosphere accentuated by brass, leather and subway tile. Comfort food is paired with a roster of 30 bottled beers and interesting small-batch whiskeys. *Moderate*

### NEW Gemini Bistro

2075 N. Lincoln Avenue; 1-773-525-2522

Set in a former pharmacy, classic American food with European influences is featured on a menu offering small, medium, large and extra-large plates. *Moderate*

### NEW Gilt Bar

230 W. Kinzie; 1-312-464-9544

The gastropub menu begins with a selection of "on toast" starters that leads to small plates such as roasted bone marrow, pork meatballs, white grits with cheddar and kennebec

fries. Head to the basement to sample the cash-only Curio cocktail lounge. *Moderate*

### NEW Girl & the Goat

809-13 W. Randolph; 1-312-492-6262

The seasonal menu features three main sections—vegetables, meat and fish—using local ingredients. The open kitchen allows diners to view the staff, including owner/chef and "Top Chef" winner Stephanie Izard, preparing their meals. Reservations recommended. *Moderate*

### graham elliot

217 W. Huron; 1-312-624-9975

Graham Elliot Bowles 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*

### 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*

### Hub 51

51 W. Hubbard; 1-312-828-0051

The menu of this eclectic River North spot offers fare 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*

### 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*

### MK, The Restaurant

868 N. Franklin; 1-312-482-9179

Creative contemporary dishes superbly offset by this stylish ambience. Exposed bricks and beams reflect the building's past as a paint factory. *Expensive*

### 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*

### North Pond

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 located in the heart of Lincoln Park on a pristine lagoon with a city skyline view. *Expensive*

### One Sixtyblue

1400 W. Randolph; 1-312-850-0303

Sophisticated contemporary cuisine served to a sophisticated clientele in a setting to match. *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*

### 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*

### 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 unmistakably 1940s Loop-style restaurant. *Expensive*

### NEW Prairie Fire

215 N. Clinton; 312-382-8300

This downtown location features many favorites from sister restaurant Prairie Grass Café in the Chicago suburbs. Local farms and seasonal ingredients are featured. *Moderate*

### Province

161 N. Jefferson; 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*

### The Publican

837 W. Fulton Market; 1-312-733-9555

It's 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*

### Rhapsody

65 E. Adams; 1-312-786-9911

Conveniently tucked inside the Symphony Center with an outside entrance on Adams Street, Rhapsody boasts a conservatory-style dining room filled with food, wine and the art lovers. *Expensive*

### NEW Ria

11 E. Walton; 1-312-880-4400

The eclectic menu at this new restaurant in the Elysian Hotel uses few words to describe its few items, but reviewers insist that quality trumps quantity. *Expensive*

### NEW Sable

505 N. State; 1-312-755-9704

Many items at this contemporary spot in the Hotel Palomar come in both large and small portions to allow for sharing. Coined a "gastro-lounge," the menu features a large number of vegetarian selections and focuses on pairing with an extensive cocktail selection. *Moderate*

### Sixteen

401 N. Wabash; 1-312-588-8030

The restaurant in Donald Trump's new Chicago building features 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*

### 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*

### Viand Restaurant

155 E. Ontario; 1-312-255-8505

American bistro with a focus on comfort foods is a hit with 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*

## ASIAN

### ajasteak

660 N. State; 1-312-202-6050

Kobe and Wagyu beef, wasabi-buttermilk 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*

### 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. *Very 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. *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 that also features seafood, duck, beef and chicken. *Moderate*

### 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 Carbine 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*

### Japonais

600 W. Chicago; 1-312-822-9600

Combining industrial and chic decor in a converted industrial building, Japonais offers traditional Japanese sushi and smoked duck topped off with the Tokyo Tower—a huge helping of ice cream, sorbets and cookies. *Expensive*

### Le Colonial

937 N. Rush; 1-312-255-0088

In the heart of Rush Street, this French-Vietnamese masterpiece vividly recaptures French colonial Southeast Asia. Sugar cane-wrapped shrimp, sea bass and filet mignon enhance the sophisticated menu. *Expensive*

### Meiji

623 W. Randolph; 1-312-887-9999

Try the tempura appetizer made with vegetables from the Japanese mountains or haru maki made with three types of fish, crab and avocado. Patrons and chefs socialize at this restaurant named for the Japanese Meiji period. *Moderate*

### 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 housed film reels, which left small, romantic niches cleverly filled with tables. *Expensive*

### 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*

### 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*

## CAJUN/CREOLE

### 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*

## CUBAN

### Habana Libre

1440 W. Chicago; 1-312-243-3303

It may be worth practicing some Spanish for this Cuban food. 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*

## FRENCH

### NEW Balsan

11 E. Walton; 1-312-646-1400

The décor of Balsan, located in the European-styled Elysian Hotel, was inspired by fashion designer Coco Chanel. The trendy brasserie offers selections from the raw bar as well as house-made charcuterie and several organ meat dishes. *Expensive*

### Everest

440 S. LaSalle; 1-312-663-8920

Enjoy Alsatian emphasis in French cuisine served on the 40th floor with a dramatic city view. *Very 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*

### 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 the glass. *Moderate*

### Tru

676 N. St. Clair; 1-312-202-0001

Considered one of the top restaurants in the city, Tru juxtaposes flashy, contemporary dishes against a stunning white dining room. This exciting, trendy experience is one block off Michigan Avenue. *Very Expensive*

## FUSION

### Roy's

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*

**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*

**INDIAN**

**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*

**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*

**ITALIAN**

**312 Chicago**

136 N. LaSalle; 1-312-696-2420  
Situating 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 of Michigan Avenue, offers steak, lobster and regional fare in a classic setting. *Expensive*

**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*

**NEW Cibo Matto**

201 N. State; 1-312-239-9500  
A 30-foot ceiling fresco and a 2,000-bottle wine tower set the grand stage for the newest restaurant in the Wit Hotel featuring upscale Italian cuisine. *Expensive*

**Coco Pazzo**

300 W. Hubbard; 1-312-836-0900  
Tuscan cuisine served in a fabric-

draped studio, complete with a beautiful bar. *Expensive*

**Osteria Via Stato**

620 N. State; 1-312-642-8450  
Get the feeling of dining in Italy with waiters swooping in serving 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*

**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 essentially transforms this Chicago eatery into his Naples home. *Moderate*

**NEW Prosecco**

710 N. Wells; 1-312-951-9500  
The menu at this River North restaurant provides the opportunity to sample cuisine from all 20 regions of Italy including homemade pastas and risottos. Prosecco also offers the city's largest selection of the restaurant's namesake beverage. [*cost level?*]

**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*

**Riccardo Trattoria**

2119 N. Clark; 1-773-549-0038  
Since 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*

**Rosebud**

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

**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*

**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 extremely popular destination boasts white tablecloths, large windows and first-class service. *Very Expensive*

**NEW Terzo Piano**

159 E. Monroe; 1-312-443-8650  
This glass-enclosed space on the top floor of the new Modern Wing of Art Institute of Chicago provides sweep-

ing panoramic views of the Loop, Millennium Park and Grant Park. Traditional Italian fare presented with a contemporary flair. Lunch daily but dinner served only Thursdays. *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*

**Tuscany**

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

**LATIN AMERICAN**

**Carnival**

702 W. Fulton Market; 1-312-850-5005  
The 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*

**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*

**MEDITERRANEAN**

**NEW The Purple Pig**

500 N. Michigan Avenue; 312-464-1744  
Anitpasti, charcuterie, "smears" and fried specialties share this pork-focused menu that includes Italian, Spanish and even New Orleans influences. The affordable wine list rounds out the casual experience. *Inexpensive*

**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*

**MEXICAN**

**DeCero**

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

**NEW DeColores**

1626 S. Halsted; 1-312-226-9886  
This two-story restaurant in Pilsen doubles as a gallery for local artists. The menu features family recipes

including the signature chicken poblanillo served with a six-hour mole sauce. Creative margarita and michelada mixes are available for BYOB. *Inexpensive*

**Tepatulco**

2558 N. Halsted; 1-773-472-7419  
Tepatulco, named for the chef-owner's 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*

**NEW Xoco**

449 N. Clark; 312-334-3688  
Those patient enough to wait in line and take countertop seating will be rewarded by chef Rick Bayless's Mexican street-food outpost featuring wood-baked tortas and caldos with ingredients from local farms. Save room for warm homemade churros for desert and a hot chocolate that wins rave reviews in the Windy City. *Inexpensive*

**Zapatista**

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

**Zocalo**

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

**RUSSIAN**

**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*

**SEAFOOD**

**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*

**C-House**

166 E. Superior; 1-312-523-0923  
Marcus Samuelsson's Chicago

endeavor emphasizes seafood and raw bar selections but still offers trusty steak and chop entrees. The modern room's exposed wine cellar separates C-House from the lobby of the Affinia Chicago Hotel. *Expensive*

**Cape Cod Room**

140 E. Walton; 1-312-932-4625  
The Cape Cod Room at the venerable Drake Hotel serves fresh seafood in a comfortable, cozy setting reminiscent of a seaside saloon. *Expensive*

**Devon Seafood Grill**

39 E. Chicago; 1-312-440-8660  
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*

**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. *Moderate*

**Shaw's Crab House**

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

**SPANISH**

**Café Ba-Ba-Ree-bal**

2024 N. Halsted; 1-773-935-5000  
At this festive hotspot, rhythmic Spanish music greets guests before the hosts can. Café Ba-Ba-Ree-bal specializes in paella, sangria and tapas. *Inexpensive*

**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 giant windows in the stunning Spanish modern room offer beautiful views of Grant Park. *Moderate*

**STEAK**

**Chicago Chop House**

60 W. Ontario; 1-312-787-7100  
This restaurant features 1,400 photos of musicians, gangsters and every Chicago mayor. *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 and appetizers such as angry lobster share the menu with unreasonably large steaks. *Expensive*

**Gene & Georgetti**

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

**N9NE Steakhouse**

440 W. Randolph; 1-312-575-9900  
A place to watch for celebrities and professional athletes, N9NE 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*

**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*

**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 Steakhouse**

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

**SUSHI/JAPANESE**

**NEW Macku Sushi**

2239 N. Clybourn; 1-773-880-8012  
Chef/owner Macku Chan and his family have been delivering Japanese cuisine to Chicagoans for more than 15 years. The family now serves their sushi and sashimi specialties at their namesake restaurant. *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*

**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*

**VEGETARIAN**

**Green Zebra**

1460 W. Chicago; 1-312-243-7100  
Vegetarians rarely have an extensive 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*

**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*

**DESSERT**

**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 \$33 all-you-can-eat chocolate buffet on Friday and Saturday evenings. *Moderate*

**WINE BAR**

**Pops for Champagne**

601 N. State; 1-312-266-7677  
This nationally renowned lounge located at River North's historic Tree Studios offers a raw bar and underground jazz club. Choose from 120 champagnes by the bottle and seven by the glass. *Expensive*

**DOWNTOWN CHAINS**

**California Pizza Kitchen**

835 N. Michigan; 1-312-787-7300  
52 E. Ohio St.; 1-312-787-6075

**Ed Debevic's**

640 N. Wells; 1-312-664-1707

**Hard Rock Café**

63 W. Ontario; 1-312-943-2252

**PF Changs**

530 N. Wabash; 1-312-828-9977

**Portillo's**

100 W. Ontario; 1-312-587-8910

**Rainforest Café**

605 N. Clark; 1-312-787-1501

**"Rock n Roll" McDonalds**

600 N. Clark; 1-312-867-0455

**Explore Chicago's Nightlife**

**CLUBS AND LOUNGES**

**Carmine's**

1043 N. Rush St.; 1-312-988-7676  
The bar in this popular restaurant is the perfect gather place after dinner in the Rush Street area.

**Coq d'Or**

Drake Hotel, 140 E. Walton Pl.; 1-312-787-2200  
Enjoy an oversized "executive-sized cocktail" while listening to a lounge act and soaking in the old-style Chicago atmosphere.

**Excalibur Nightclub**

632 N. Dearborn St.; 1-312-266-1944  
People of all ages visit the stone castle to enjoy dancing, comedy, interactive shows, live music and a late-night kitchen.

**Redhead Piano Bar**

16 W. Ontario St.; 1-312-640-1000  
Enjoy an oversized "executive-sized cocktail" while listening to a lounge act and soaking in the old-style Chicago atmosphere.

**Signature Lounge**

875 N. Michigan Ave.; 1-312-787-9596  
The fantastic views from the 96th floor of the John Hancock Center are memorable, especially at sunset.

**BLUES CLUBS**

**Buddy Guy's Legends**

700 S. Wabash Ave.; 1-312-427-1190  
It's the real deal. In addition to experiencing real Chicago blues, you may also see the legendary Buddy Guy talking with patrons and performers.

**Blue Chicago**

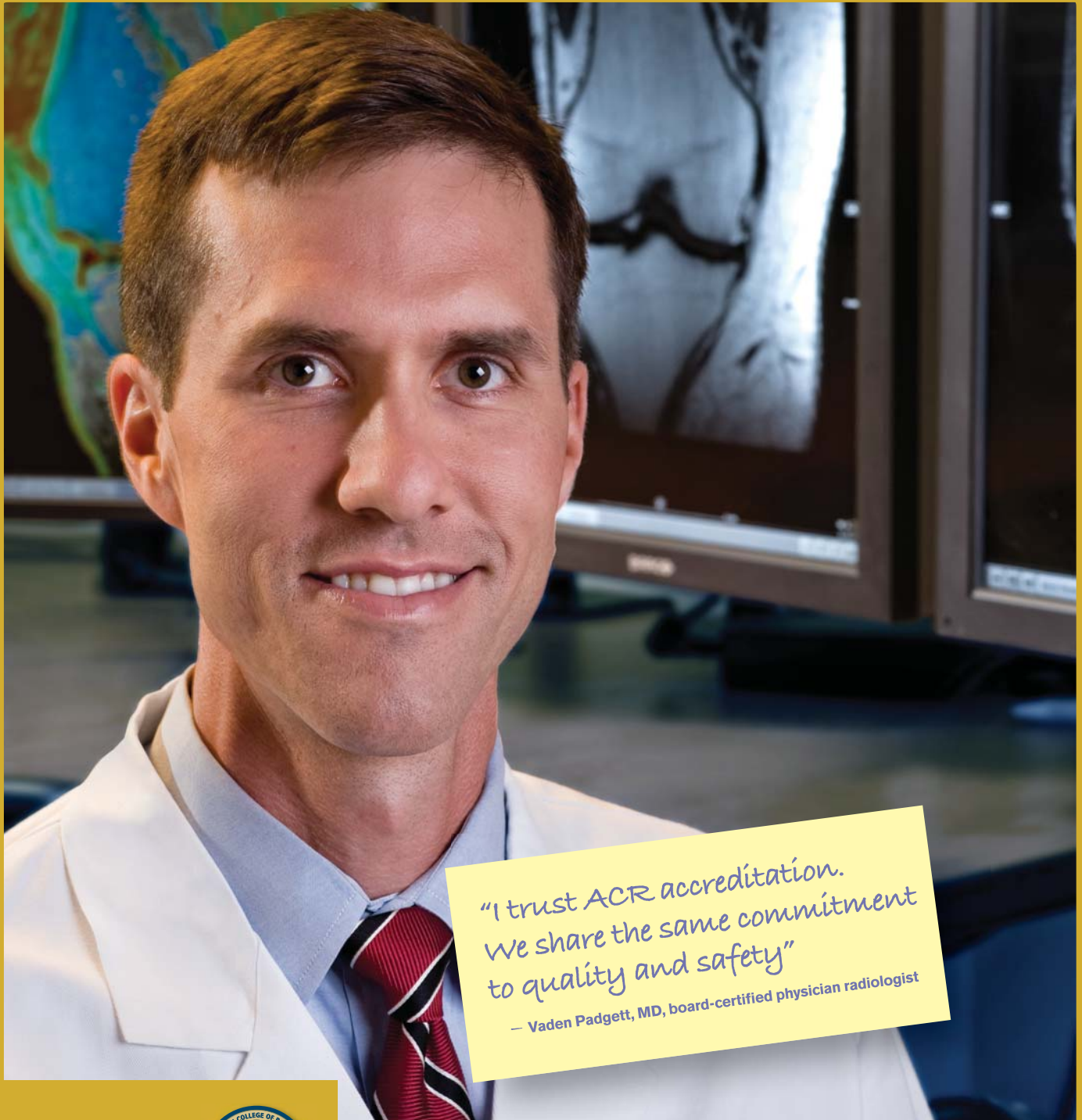
536 and 736 N. Clark St.; 1-312-661-0100  
This is the only two-for-the-price-of-one blues in Chicago. Both clubs feature authentic Chicago blues bands fronted by well-respected female singers.

**House of Blues**

329 N. Dearborn St.; 1-312-923-2000  
Check the schedule to see which nationally known bands are playing. The complex also offers several restaurants and bars.

**Kingston Mines**

2548 N. Halsted St.; 1-773-477-4646  
This popular North Side venue offers two stages so patrons switch rooms instead of taking a mandatory break with the band.



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