

# RSNA<sup>®</sup> *News*



## Medical Isotope Shortage Threatens Patient Care

### Also Inside:

- Technique “Lights Up” Iron in Brains of Patients with Parkinson Disease
- R&E Silver Anniversary Campaign Calls on Radiologists to Continue Legacy
- Ozone Gas Used to Relieve Lower Back Pain
- Patient Portals Move Toward Widespread Use

**RSNA 2009 Course Enrollment  
Begins June 30**

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## Distinguished Honorees and Lecturers

THE RSNA Board of Directors has announced the honored lecturers and distinguished award recipients to whom the Society will pay tribute at the 95th Scientific Assembly and Annual Meeting. They are:



RSNA 2009  
Quality Counts

### GOLD MEDALISTS



**Gary M. Glazer, M.D.**  
Stanford, Calif.



**Brian C. Lentle, M.D.**  
Victoria, British Columbia



**David C. Levin, M.D.**  
Philadelphia

### HONORARY MEMBERS



**Lizbeth Kenny, M.D.**  
Sydney, Australia



**Borut Marincek, M.D.**  
Zurich, Switzerland



**Ho Young Song, M.D.**  
Seoul, Korea

▪ Detailed information about each of these honorees and presenters will be published in future editions of RSNA News.

### ANNUAL ORATION IN DIAGNOSTIC RADIOLOGY

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



**Daniel C. Sullivan, M.D.**  
Durham, N.C.

### ANNUAL ORATION IN RADIATION ONCOLOGY

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



**Bruce G. Haffty, M.D.**  
New Brunswick, N.J.

### EUGENE P. PENDERGRASS

#### NEW HORIZONS LECTURE

*Qualitative and Quantitative Ways of Understanding Clinical MR Images*



**Graeme M. Bydder, M.B.Ch.B.**  
San Diego

## New! ASRT @ RSNA 2009

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



### Wednesday – December 2

- Why We Should Talk to Parents about Radiation Safety Issues
- Technologist Perceptions and Practice

Related to Radiation Exposure Dose Trends in the United States

- Living on the Edge of Technology and Complexity: The Law of Unintended Consequences
- Challenges and Issues of Managing Technology: The Manager's Perspective

### Thursday – December 3

- Update on the Development of Breast Tomosynthesis
- Customer Service in the Imaging World

- More Is Not Better When We're Talking about Radiation Exposure in Kids
- Challenges and Issues of Managing Technology: The Educator's Perspective
- Equipment Replacements: Implementation, Challenges, and Rewards in a 24-Hour Operation
- Challenge and Change in Radiographers' Roles

## RSNA 2009 Associated Sciences Program

**T**HE Associated Sciences Consortium has announced the topics for its refresher course series at RSNA 2009. Ten refresher courses will be held Monday, Tuesday and Wednesday.

### Monday – November 30

- Where is the Radiologist? Radiology's Changing Dynamics: Operations in Today's Economy—Balancing Viability and the Regulatory Minefield
- Where is the Radiologist? Radiology's Changing Dynamics: The Present and Future Medical/Legal Issues that We Face
- Compliance with the Supervision Rules and Accreditation Requirement: The Impact on Reimbursement
- Architecture That Makes a Difference: Design Guidelines for Tomorrow's Imaging Environment

### Tuesday – December 1

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

### Wednesday – December 2

- Why and How Far Health Care IT is Behind Our Non-Health Care IT Brethren: Continued from RSNA 2008
- Imaging in the Operating Room



The Associated Sciences Consortium comprises AHRA: The Association for Medical Imaging Management, American Association of Medical Dosimetrists (AAMD), American Institute of Architects–Academy on Architecture for Health (AIA-AAH), American Society of Radiologic Technologists (ASRT®), Association for Radiologic and Imaging Nursing (ARIN), Association of Educators in Imaging and Radiologic Sciences, Inc. (AEIRS), Association of Vascular and Interventional Radiographers (AVIR), Canadian Association of Medical Radiation Technologists (CAMRT), International Society of Radiographers and Radiological Technologists (ISRRT), Radiology Business Management Association (RBMA), Section for Magnetic Resonance Technologists (SMRT-ISMRM) and SNM—Technologists Section (SNM-TS).

For more information about RSNA 2009, go to [RSNA2009.RSNA.org](http://RSNA2009.RSNA.org) and click Advance Registration. Course enrollment begins June 30.

## Canon U.S.A. Funds R&E Research Medical Student Grant

Canon U.S.A. has committed to donate \$50,000 over five years to endow an RSNA Research & Education (R&E) Foundation Research Medical Student Grant. The endowment will be in addition to their current Research Medical Student Grant. Canon

grants were awarded this year to Chintan Shah, B.S., of the Cleveland Clinic Foundation, for "Evaluation of Hippocampal Damage and Episodic Memory Loss in Multiple Sclerosis Using DTI," and Kristina Hoot, Ph.D., of the

Oregon Health & Science University, for "Efficacy of Targeted Molecular Therapies Combined with Irradiation on Skin Squamous Cell Carcinomas."

"Canon U.S.A. is proud to once again support the Research Medical Student Grant," said

Tsuneo Imai, Canon U.S.A.'s senior director and general manager. "Our grant supports the vision of the R&E Foundation—improving patient care by supporting research and education in radiology."

Canon has been an R&E Foundation Vanguard company since 1999. The new commitment will be applied to the Silver Anniversary Campaign, which has raised \$14 million to fund radiology research and education. See page 14 for news on the campaign's progress and projections for the future.

"Canon U.S.A. will continue to commit to our global community and invest in the future of the individuals and institutions that will advance radiologic research, education and practice," said Imai.

## NIH Biennial Report Illuminates Research Activities

The National Institutes of Health (NIH) has announced the publication of the first Biennial Report of the Director, providing an integrated portrait of NIH research activities. The report makes it easier for Congress, advocacy groups and the general public to understand the agency's programs, according to NIH. The report is available through the Research Portfolio Online Reporting Tool (RePORT) Web site at [biennialreport.nih.gov](http://biennialreport.nih.gov).

### MEDICAL IMAGING COMPANY NEWS

#### Phillips Acquires Traxtal

■ Royal Philips Electronics, of Amsterdam, The Netherlands, has acquired Traxtal, a Toronto-based developer of minimally invasive instruments and software for image-guided intervention and therapy. Traxtal will become part of the ultrasound business within the Philips Healthcare sector. Philips has had a partnership with Traxtal since 2006.

## McClennan Receives ARRS Gold Medal

RSNA News editor **Bruce L. McClennan, M.D.**, a professor of diagnostic radiology at Yale University School of Medicine and an attending radiologist at Yale New Haven Hospital, received the gold medal of the American Roentgen Ray Society (ARRS) at its recent annual meeting.

Also receiving ARRS gold medals were **Carol Rumack, M.D.**, and **Thomas Budinger, M.D., Ph.D.** Dr. Rumack is a professor of radiology and pediatrics at the University of Colorado Denver School of Medicine. Dr. Budinger is a professor in the Bio-engineering and Electrical Engineering and Computer Sciences Department

at the University of California, Berkeley, and senior scientific advisor at the Lawrence Berkeley National Laboratory in Berkeley.

ARRS also named **Bradley Foerster, M.D.**, as the 2009 ARRS Scholar, **Srini Tridandapani** as the 2009 ARRS/Elio Bracco Scholar and **Nabile Safdar** as the 2009 Berlin Scholar. Residents in Radiology Award recipients were **Jennifer Kohr, M.D.**, who received the President's Award,



Bruce L. McClennan, M.D.



Carol Rumack, M.D.



Thomas Budinger, M.D., Ph.D.

and **David Karow, M.D., Ph.D.**, and **Jenny Hoang, M.B.B.S.**, who received Executive Council Awards.

## AIUM Bestows Honors

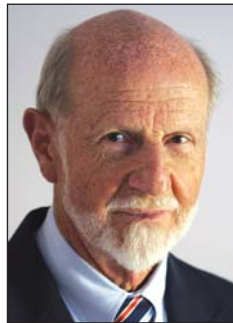
**Lawrence Platt, M.D.**, a clinical professor of obstetrics and gynecology at the David Geffen School of Medicine at the University of California in Los Angeles, has received the 2009 Joseph H. Holmes Clinical Pioneer Award of the American Institute of Ultrasound in Medicine (AIUM).

Dr. Platt, whose research includes prenatal diagnosis, ultrasound in obstetrics and gynecology and the biophysical assessment of the fetal condition, served as AIUM president from 1999 to 2001. He maintains a private practice in Los Angeles.

The 2009 Holmes Basic Science Pioneer Award was presented to **Ernest Feleppa, Ph.D.**, director of the Frederic Lizzi Center for Biomedical Engineering at Riverside Research Institute in New York.

The William J. Fry Memorial Lecture Award was presented to **Alfred Kurtz, M.D.**, a professor of radiology at Jefferson Medical College and Thomas Jefferson University Hospital in Philadelphia.

The 2009 Distinguished Sonographer Award was presented to **Jean Spitz, M.P.H., R.D.M.S.**, director of the Nuchal Translucency Quality Review Program at the Maternal-Fetal Medicine Foundation and an obstet-



Ernest Feleppa, Ph.D.



Alfred Kurtz, M.D.

ric and gynecologic sonographer at Edmond Renaissance Physicians, Edmond, Okla.

AIUM also presented its 2009 Memorial Hall of Fame awards posthumously to: **Fred Winserbeg, M.D.**, longtime chief of radiology at Lincoln Hospital in New York and a pioneer in diagnostic ultrasound; **Martin Resnick, M.D.**, a professor of urology and chair of the Department of Urology at Case Western Reserve University School of Medicine in Cleveland and an accomplished urology researcher; and **Horace Thompson, M.D.**, a former AIUM president regarded by many as the "father" of obstetric and gynecologic ultrasound.



Jean Spitz, M.P.H., R.D.M.S.

## Thrall Named to NIH Advisory Committee

**James H. Thrall, M.D.**, radiologist-in-chief at Massachusetts General Hospital and a professor of radiology at Harvard Medical School, both in Boston, has been selected to serve on the National Institutes of Health (NIH) Advisory Committee to the Director. The committee advises the NIH director on policy and planning issues. Dr. Thrall serves as chair of the board of chancellors of the American College of Radiology and received the RSNA gold medal in 2008.



James H. Thrall, M.D.

## SPR Announces Awards

**T**HE Society of Pediatric Radiology (SPR) presented the following awards at its recent annual meeting:

**Charles A. Gooding, M.D.**, chief of pediatric radiology at the University of California San Francisco (UCSF) for 40 years, received the gold medal for his contributions to pediatric radiology and his role as founder, president and chairman of the board of directors of the Radiology Outreach Foundation, which sends educational materials to developing countries. Dr. Gooding served as 1998 SPR president and as chairman of the board.

**Kenneth Fellows, M.D.**, received the SPR Pioneer award for his contributions to pediatric radiology, particularly in cardiovascular imaging. Dr. Fellows successfully progressed through the academic ranks at Children's Hospital/Harvard University, where he worked until 1997 as an associate professor in radiology and an associate in cardiology.

The Singleton Taybi Award for lifetime accomplishments in education went to **Lane Donnelly, M.D.**, radiologist-in-chief of the Department of Radiology and Pediatrics at Cincinnati Children's Hospital. Dr. Donnelly has written some of the most popular textbooks on pediatric radiology, including *Fundamentals of Pediatric Radiology* (2001).

SPR Honorary Member awards went to **Dolores Bustelo, M.D.**, **Pedro Daltro, M.D.**, **Antônio Soares de Souza, M.D.**, and **Cristian Garcia, M.D.**

Dr. Bustelo is head of pediatric imaging at CETAC, a diagnostic imaging clinic in Curitiba, Brazil. Dr. Daltro specializes in pediatric chest CT at Instituto Fernandes Filgueiras in Rio de Janeiro,



**Kenneth Fellows, M.D.**



**Lane Donnelly, M.D.**



**Dolores Bustelo, M.D.**



**Pedro Daltro, M.D.**



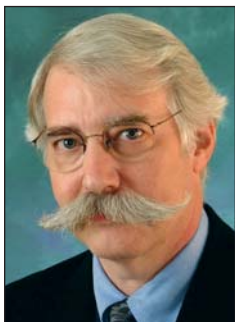
**Antônio Soares de Souza, M.D.**



**Cristian Garcia, M.D.**

Brazil. Dr. Soares de Souza is chair of the Department of Radiology at the School of Medicine in São José do Rio Preto, Brazil, and president of the Latin American Society of Pediatric Radiology. Dr. Garcia is a professor and chair of the Department of Radiology of the School of Medicine at Catholic University of Chile.

### Irish is Physician of the Year



**Craig Irish, M.D.**

**Craig Irish, M.D.**, has been named the 2009 Physician of the Year by Fairview Hospital, a Cleveland Clinic hospital. Recipients are nominated by medical staff and selected by their peers.

Since joining the hospital staff in 1980, Dr. Irish has served in various leadership roles including chair of the Department of Radiology. He currently chairs the Credentials Committee. He is past-president of the Northeast Ohio Ultrasound Society (NEOUS) and the Cleveland Radiological Society (CRS).

### VIEWING TECHNOLOGY

## Question of the Month

**Q** I would like to implement teleradiology and view chest images at home on my desktop monitor but I have been told this is poor practice. Why is this?

[Answer on page 18.]

IN MEMORIAM

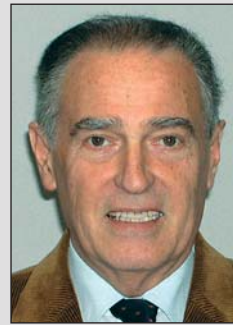
**Antonio Chiesa, M.D.**

Antonio Chiesa, M.D., a progressive educator and leader in head and neck radiology whose dedication helped transform the specialty in Italy and throughout Europe, died on April 26 of cancer. He was 72.

Born in Vincenza, Italy, Dr. Chiesa earned his medical degree in 1961 from the University of Padua Medical School where he practiced until 1982. He then moved to the University of Brescia, where he held positions as chair of the Department of Radiology

and director of the Postgraduate School of Radiology until his retirement in 2007.

A respected international educator, Dr. Chiesa gave presentations in 22 countries and authored more than 150 publications on head and neck radiology, radiological planning and computer applications. He served on the editorial boards of *European Radiology*, the *Journal of Digital Imaging* and other Italian and



Antonio Chiesa, M.D.

European journals.

Dr. Chiesa served as president of the European Society of Head and Neck Radiology from 1994 to 1996 and of the European Congress of Radiology in 2005. He received RSNA

Honorary Membership in 2005 and was awarded the gold medal of the European Society of Radiology (ESR) in 2009.



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

MY TURN

Medical Device Evaluations: Current Process Off-Track

THE SYSTEM for bringing new medical devices to clinical practice is fundamentally flawed. The current situation involving mechanical devices for stroke intervention is a case in point. A more systematic method that involves coordination of the U.S. Food and Drug Administration (FDA), Centers for Medicare and Medicaid Services (CMS) and National Institutes of Health (NIH) would benefit Americans.

FDA approval requires clinical trials establishing safety and technical efficacy. Technical efficacy means that the device does what it is supposed to do—for example, the retriever removes a thrombus. Devices are different than drugs, where efficacy is measured by clinical outcome.

CMS bases its reimbursement decision on clinical data and input from physician specialty groups and industry. The level of evidence varies. In the

case of mechanical stroke intervention, data were limited to a single large prospective case series compared to historical controls. The device was effective in removing thrombus but there was little evidence that patient outcome improved.

A randomized trial to prove efficacy of endovascular interventions is needed or we have no direct proof that we are doing

anyone any good. Issues related to patient selection also remain unresolved. Existing trials are recruiting very slowly, due in part to the strong financial disincentive for a hospital or physician to participate in a clinical trial with a medical arm.

A better system may be for a pre-determined period of provisional approval and reimbursement after FDA



Colin P. Derdeyn, M.D.

approval, with mandatory outcomes reporting. This would allow physicians to gain experience, make design iterations and optimize patient selection. If outcome data were compelling, no randomized trial would be needed. Otherwise, an NIH-funded trial could then be designed.

Reimbursement would be limited to device use in the trial until completion.

Such a new track would allow proof of efficacy for devices that truly benefit our patients.

*Colin P. Derdeyn, M.D., is a professor of radiology, neurology and neurological surgery and program director for endovascular surgical neuroradiology at the Mallinckrodt Institute of Radiology at Washington University in St. Louis, where he is also director of a National Institutes of Health-funded stroke clinical trials research center. Dr. Derdeyn serves on the RSNA News Editorial Board.*

My Turn

ONE RADIOLOGIST'S VIEW

# Medical Isotope Shortage Threatens Patient Care

**A** COMBINATION OF factors must be addressed in order to solve an ongoing, worldwide medical isotope shortage, according to nuclear medicine physicians and radiation oncologists who are being forced to delay or cancel elective—and occasionally even emergency—procedures.

Those factors include a virtual halt in U.S. production of medical isotopes, the aging of international reactors with no replacements planned and concerns about the use of highly enriched uranium (HEU) in light of terrorism.

“It takes a nuclear reactor to make the medical isotopes in the amounts needed,” said James Ponto, M.S., B.N.C.P., a clinical professor of pharmacy and chief nuclear pharmacist at the University of Iowa Hospitals and Clinics in Iowa City. “In nuclear medicine, 80 percent of all imaging uses technetium-99m (Tc99m), which is produced from the decay of the radioisotope molybdenum 99 (Mo-99).

Nuclear medicine society SNM estimates that at least 80 percent of the nearly 20 million nuclear medicine procedures each year in the U.S. use Tc-99. The medical isotope can be labeled to a variety of substances that localize in various organs and tissues or otherwise act as tracers of biologic function. Common diagnostic imaging procedures include myocardial perfusion imaging for coronary artery disease and bone imaging to detect spread of cancer to the bones. Other procedures include evaluation of diseases of the kidney, liver and biliary system, lungs, brain and gastrointestinal tract.

Since Mo-99 decays with a half-life of 66 hours, pharmacies and hospitals can’t stockpile it—once it’s gone, it’s gone. “A shortage is inevitable if nuclear



**James Ponto, M.S., B.N.C.P.**  
University of Iowa



**Milton J. Guiberteau, M.D.**  
University of Texas Medical School

reactors are shut down,” said Ponto.

## U.S. Depends on Foreign Sources

There is no reliable domestic supply of Mo-99, said Homer A. Macapinlac, M.D., a professor and chair of the Department of Nuclear Medicine at the University of Texas M.D. Anderson Cancer Center. Instead, five commercial nuclear reactors—located in Canada, The Netherlands, Belgium, France and South Africa—produce 95 percent of the world’s supply.

1990 saw the closure of the last U.S. reactor producing Mo-99. Plans to build a new facility in New Mexico were dismissed due to cost concerns, with the thought that Canada could produce medical isotopes at much lower cost—in fact, two reactors had been operating at Chalk River Laboratories in Canada since 1947 and 1957. The 1947 reactor closed in 1992. The other continues to make medical isotopes today; however, the reactor was shut-

down in late May due to a water leak and was not expected to be running again for a month.

In 2000, Canada built two new facilities to replace the older ones at Chalk River. Technical issues arose, however, as officials sought to fully commission the new reactors and

development was halted in May 2008.

“The plan that everyone depended upon went away,” said Ponto. “It’s scary. It’s a very fragile system.”

Both the remaining Chalk River reactor and the Petten reactor in The Netherlands have been shut down several times in the past year for regular maintenance and emergency repairs.

“The reactors in Canada and The Netherlands are 40 to 50 years old, said Milton J. Guiberteau, M.D., a professor of clinical radiology at the University of Texas Medical School in Houston. Dr. Guiberteau chairs the Nuclear Medicine Subcommittee of the RSNA Scientific Program Committee. “The

*It's a very fragile system.*

**James Ponto, M.S., B.N.C.P.**



reactors are at the outer limits of their useful lives.”

### **Solution Lies in Coordinating Reactor Shut Downs, Building New Facilities**

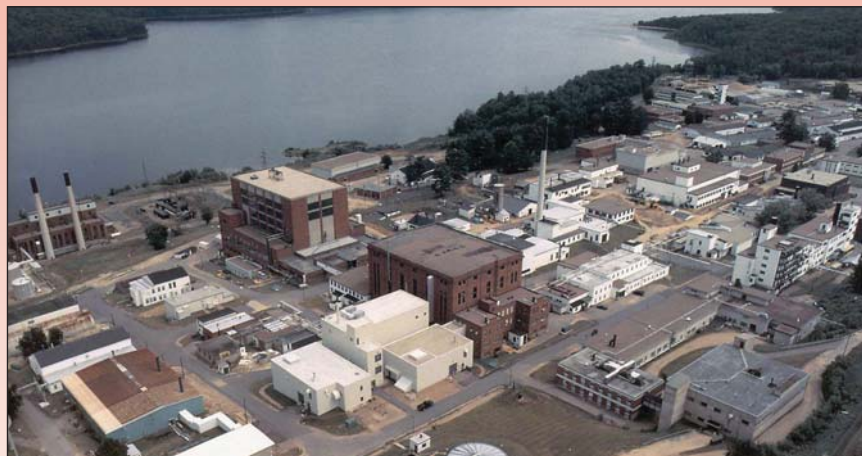
France’s Nuclear Safety Authority held a meeting in January to discuss better coordination of nuclear reactor shut downs to avoid future delays in getting medical isotopes distributed around the world. Discussion focused on synchronizing unit maintenance shut downs to allow remaining reactors to take up the slack, said Dr. Guiberteau. A follow-up meeting will be held this summer.

Beyond shutdown coordination, experts look to replace the aging reactors with new ones or convert other currently commercial reactors; however, time and cost concerns must be considered. SNM has identified the University of Missouri in Columbia and the Babcock and Wilcox commercial facility in Lynchburg, Va., as promising new sites, but construction and approval by the U.S. Nuclear Regulatory Commission (NRC) and the Food and Drug Administration (FDA) means these facilities won’t be operational for at least another five to 10 years.

Mo-99 is produced by the fission of HEU. Dr. Macapinlac said the commercial site in Lynchburg wants to use lower enriched uranium (LEU), because the federal government is discouraging use of HEU for fear of terrorism. However, it is not yet clear if it is practical to use LEU for medical isotope production due to substantially lower yields, increased volume of radioactive waste and overall increased cost.

A January 2009 National Academy of Sciences report said the elimination of HEU is technically and economically feasible. While SNM leaders agreed with the long-term goal of eliminating HEU, they questioned the accuracy of the cost estimates and noted that the report failed to describe a solution to the shortage in the short-term.

Ponto said the University of Missouri reactor, which has received some funding from the Department of Energy



The National Research Universal (NRU) reactor located at Chalk River Laboratories in Canada is among the five international commercial nuclear reactors currently producing 95 percent of the world’s supply of molybdenum 99 (Mo-99). Almost all of the 16 million nuclear medicine procedures performed annually in the U.S. use technetium-99m, made from the decay of Mo-99. Nuclear medicine physicians are concerned about isotope shortages that are occurring as the NRU reactor and others experience more frequent age- and maintenance-related shutdowns.

Image courtesy of the Canadian Nuclear Association.

and the State of Missouri, may be ready sooner than the five- to 10-year timeframe if all goes smoothly, but still faces many NRC and FDA obstacles. Noted Dr. Guiberteau: “We need to prepare pathways to get regulatory agency approval as quickly as possible. Both safety and speed are essential.”

### **New Facility Will Isolate New Isotopes**

Meanwhile, the U.S. Department of Energy has awarded \$550 million to Michigan State University in Lansing to build the Facility for Rare Isotope Beams (FRIB). The FRIB site won’t just be making medical isotopes, however—some of the facility’s resources will be used for isolating new isotopes.

Sources interviewed for this story applauded RSNA, SNM and the American College of Radiology for forcing the government to take notice

of the isotope shortage. “Regular and emergency procedures have been delayed almost to the point that this is a national security issue,” said Ponto. “Our economic problems may cause more delays in getting new facilities built, but at least we are seeing some firm planning for the future.”

“There are at least 16 million reasons why we need medical isotopes produced domestically,” added Dr. Macapinlac, reiterating the number of nuclear medicine procedures performed annually that use Tc-99m.

“We must ensure patient needs are not compromised,” Dr. Macapinlac continued. “This is the place for the government to place its stimulus money. The fruits of the atomic energy program continue to be harvested. We need to water this tree.” □

## **Nuclear Medicine at RSNA 2009**

RSNA and SNM will sponsor Case-Based Review of Nuclear Medicine at RSNA 2009.

Topics and presenters will be:

- Head & Neck Cancers—Michael Graham, M.D., Ph.D.
- Cancers of the Thorax—George Segall, M.D.
- Cancers of the Abdomen and Pelvis—Dominique Delbeke, M.D., Ph.D.
- Sarcoma/Melanoma/Lymphoma—Eric Rohren, M.D., Ph.D.

Registration for Case-Based Review of Nuclear Medicine and all

RSNA 2009 courses begins June 30. For more information, go to [RSNA2009.RSNA.org](http://RSNA2009.RSNA.org).



# Ozone Gas Used to Relieve Lower Back Pain

**A** MINIMALLY INVASIVE technique that uses oxygen and ozone to alleviate lower back pain associated with herniated disks is proving to be a cost-effective treatment.

The procedure involves injecting a mixture of oxygen and ozone directly into the injured disk using image-guidance. As a result, the disk's volume is reduced and so are pain and inflammation. Researchers who conducted a meta-analysis of 48 peer-reviewed studies on the treatment—that included more than 8,000 patients—confirmed its effectiveness. They predict the treatment could become widely adopted in the U.S. within the next several years.

“A small reduction in volume is a big reduction in pressure,” said study author Kieran J. Murphy, M.D., who presented the results at the Society of Interventional Radiology annual meeting in San Diego in March. “The benefit of ozone over other treatments, which generally work by removal or local dissolution of disk material, is that ozone just reduces the volume a little bit and lets the injured disk heal itself.”

Dr. Murphy, an interventional neuroradiologist and vice-chair and chief of medical imaging at the University of Toronto, said the standard surgical treatments for herniated disk are open discectomy and microdiscectomy, both of which involve removal of disk material and require longer recovery times than the ozone treatment.

Americans spend at least \$50 billion each year on low back pain, the most common cause of job-related disability and a leading contributor to

missed work, according to the National Institute of Neurological Disorders and Stroke, a part of the National Institutes of Health.

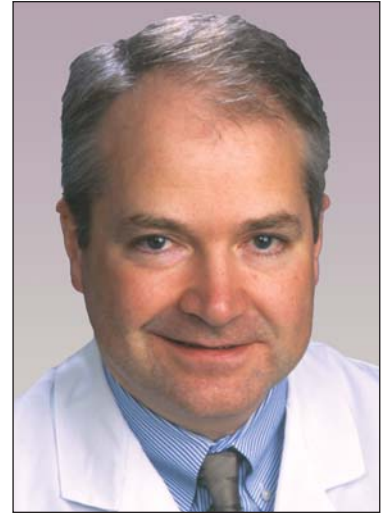
“Any radiologist who can do a discogram can do the ozone procedure,” said Dr. Murphy. “It is very simple, using a 22-gauge needle.”

Dr. Murphy and colleagues also conducted a second study to determine how the oxygen/ozone treatment works. Dr. Murphy said that study began in 2003, as he listened to a radiology lecture in Italy.

“I was sitting there listening to a study about using ozone in this manner and I thought the guy who was speaking was either mad or brilliant,” he said. “I mean, this is really chemical engineering, not what you think of as medicine.”

After his trip to Italy, Dr. Murphy spent five years studying the mechanism of action. “I wanted to develop a safe way to deliver the ozone into the disk, which early research had not yet done,” he said. “In order to do this safely, you also need to have a generator that makes the ozone.”

The meta-analysis indicated that the estimated mean improvement for patients after treatment—based on the 10-point visual analog scale (VAS; 0 being no pain and 10 being the worst pain), a standard tool for rating the effects of back pain—was a change of 3.9. The estimated mean improvement was 25.7 percent when using the Oswestry Disability Index (ODI), which measures one's ability to conduct everyday life activities such as



**Kieran J. Murphy, M.D.**  
University of Toronto

washing, dressing or standing. An ODI score of 61 percent or higher represents back pain that has an impact on all aspects of daily living.

Researchers found the VAS and ODI improvement scores to be well above both the minimum clinically important difference and the minimum statistically significant detectable change, indicating that there are real changes that can be felt by the patient.

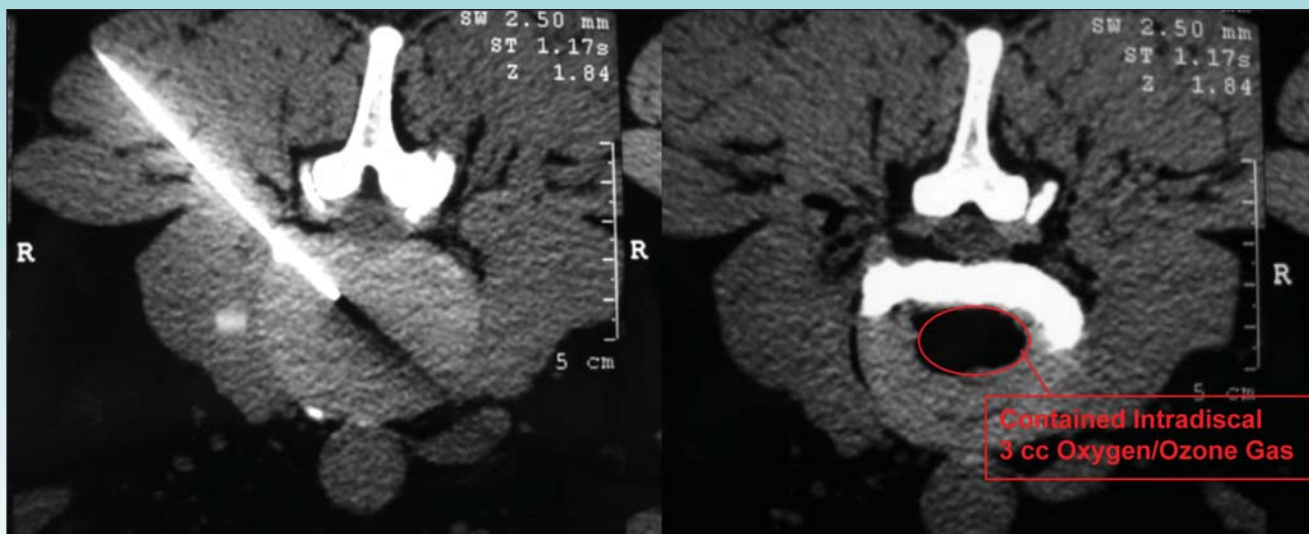
“The improvement in pain and function was impressive when we looked at patients, who ranged in age from 13 to 94 years, with all types of disk herniations,” said Dr. Murphy. “This treatment really can help a lot of people.”

Much of the research in oxygen/ozone treatments has been done by interventional radiologists in Italy, with thousands of people there receiving the treatment over the past five years.

This procedure could become routine in the U.S. within the next several years, said Dr. Murphy. “So many

*Ozone just reduces  
the volume a little bit  
and lets the injured  
disk heal itself.*

**Kieran J. Murphy, M.D.**



Researchers who conducted a meta-analysis of a treatment using oxygen and ozone to alleviate lower back pain associated with herniated disks confirmed the approach as both effective and affordable. Researchers predict that the treatment could become widely adopted in the U.S. within the next several years. Shown is a CT image of the L2-L3 disc of a patient before and after the ozone-oxygen injection.

Image courtesy of the Society of Interventional Radiology (SIR). From "A Meta-analysis of the Effectiveness and Safety of Ozone Treatments for Herniated Lumbar Discs," presented at the SIR 2009 annual meeting.

people have already been successfully treated in Italy, Europe and China with this technique, which sets the groundwork for us to move forward to get U.S. Food and Drug Administration and Health Canada approval."

Daniel B. Brown, M.D., a professor of radiology and division chief of interventional radiology at Thomas Jefferson University Hospital in Philadelphia, applauded the concept of Dr. Murphy's studies.

"The whole idea of getting the pressure off those nerve roots just by injecting a small volume into a disk is very clever," Dr. Brown said. "It's already been used a lot outside of the U.S. and with great success. Dr. Murphy has developed a method for doing it more simply and what's also nice is that you can do it with a small needle and a permanent implant is not required."

While minimally invasive techniques, such as thermal ablation, can be used to treat patients with herniated disks, Dr. Brown said the ozone technique is less painful and more cost effective.

"Lower back pain is a very common, challenging problem," he said. "The burden on society from back

problems is horrible. The best technological advances are ones that are simple and can help a large number of people and this seems to really meet those criteria."

The potential to benefit a large number of people worldwide is what makes the ozone treatment special, said Dr. Murphy. "This remarkably safe and cost-effective treatment crosses economic boundaries between our hospitals in America and any hospital in the world," he said. "You come up with something simple and cheap and you can affect the lives of hundreds of thousands of people every year. That is relevant." □

#### Learn More

■ More information about the studies of ozone treatment for lower back pain, conducted by Kieran J. Murphy, M.D., and colleagues, can be found at [www.sirmeeting.org](http://www.sirmeeting.org). Select Abstract 37, "A Meta-Analysis of the Effectiveness and Safety of Ozone Treatments for Herniated Lumbar Discs," and Abstract 38, "Ozone's Mechanisms of Action for Relieving Pain Associated with Herniated Intervertebral Disks."

## Interventional Radiology at RSNA 2009

THE Interventional Radiology Series at RSNA 2009 will feature a session on musculoskeletal interventions. Topics and presenters include:

- The Radiologist's Role in Back and Neck Pain—Blake A. Johnson, M.D.
- Vertebroplasty—Alexios Kelekis
- Musculoskeletal Oncologic Procedures—Sean M. Tutton, M.D.
- Other Procedures for Back Pain: Facet Injections and Epidural Stents—Susan V. Kattapuram, M.D.
- Future Directions and Discussion—Alexios Kelekis

Registration for this and all RSNA 2009 courses begins June 30. For more information, go to [RSNA2009.RSNA.org](http://RSNA2009.RSNA.org).



# Patient Portals Move Toward Widespread Use

**W**HILE MOST hospitals have yet to make the transition to electronic health records (EHRs), Duke University Medical Center is not only giving patients online access to lab and X-ray results, but is also pursuing a plan to offer online radiologic images to patients.

Meanwhile, Memorial Sloan-Kettering Cancer Center in New York is configuring a new radiology system with the intention of offering patients online access to summaries of their radiologic reports.

They are not the first, but both facilities are at the forefront of a transformative new technology—the patient portal—that experts predict will become more prevalent as patient demand for health information increases and more hospitals make the transition to EHRs following the injection of \$19 billion in government incentives to move healthcare toward full implementation of these records.

Only a fraction of the 3-4 percent of hospitals estimated to have EHRs are operating portals—a secure Web connection to health information, services and clinical care—and an even smaller percentage have sites with radiology-specific features, said Eliot Siegel, M.D., professor and vice-chair of information systems in the Department of Radiology at the University of Maryland School of Medicine and chief of radiology and nuclear medicine at the VA Maryland Healthcare System. Other early portal adopters include Kaiser Permanente in Oakland, Calif., and Beth Israel Deaconess Medical Center (BIDMC) in Boston.

“I would say that less than 1 percent of facilities have portals that offer radiology-specific services and none

that I know of offers images, but that will change,” said Dr. Siegel, a member of the RSNA Radiology Informatics Committee. “This has not had a major impact on the radiology community yet.”

Nevertheless, some clinicians are concerned about the level of information to which patients could have access, said Lawrence Schwartz, M.D., vice-chair in the Department of Radiology and director of the Laboratory for Computational Image Analysis at Memorial Sloan-Kettering.

“Physicians are in favor of these portals in general because they educate patients and increase efficiency, but there is concern about the potential misunderstanding of data which could lead to increased patient concern and anxiety,” said Dr. Schwartz.

## Portals Tailored to Facility's Needs

A patient portal can be tailored to suit each facility's needs and can be created in-house or through an outside vendor. For example, the VA's portal, MyHealthVet, was created in 2005 by the multihospital VA network, said Dr. Siegel.

At a minimum, most portals offer billing, prescription refills, educational tools, appointment scheduling and insurance and admittance forms, while more robust sites offer features like lab results and e-messaging. Patients must register and sign on with a secure password and portals are required to be Health Insurance Portability and Accountability Act (HIPAA) compli-



**Eliot Siegel, M.D.**  
University of Maryland

ant, according to Dr. Siegel. Once a facility creates a site, it is assumed that all physicians will participate, he said.

A patient portal is different than a patient health record (PHR), which is a lifelong, electronic resource of health information owned by the indi-

*Physicians are in favor of these portals in general because they educate patients and increase efficiency, but there is concern about the potential misunderstanding of data.*

**Lawrence Schwartz, M.D.**

vidual and maintained in a secure, private environment such as sites hosted by Google™ and Microsoft®, said Dr. Schwartz. “Unless a person is at the same institution from birth to death, a patient portal contains only part of a person's PHR,” he said.

At Memorial Sloan-Kettering, which launched its MYMSKCC patient portal about two years ago, the most popular features among its 7,000 users are scheduling, test preparation information and e-messaging, said David Artz, M.D., medical director of information systems. “Patients preparing

for a CT scan can find out exactly what procedure they need to follow before they come in," he said. E-messages, which are used for everything from general questions to appointments, are routed to the appropriate administrative or nursing staff based on the message topic chosen by the patient from a pre-defined list. With the click of a button, the message becomes part of the patient's EHR, said Dr. Artz.

Prescriptions are the most common search on MyHealthVet, which has 500,000 registered users, said Dr. Siegel.

At Duke, which has shared a quarter of a million test results with patients since launching its HealthView portal in January 2008, some physicians are doing online consultations in a secure, limited fashion, according to Asif Ahmad, vice-president and CIO for the Duke University Health System in Durham, N.C. "This is happening on a voluntary basis and doctors are not billing for e-consultations so far," said Ahmad.

Although facilities already offer CDs of radiologic images and send copies of clinical test results in the mail, features like e-mails, online consultations and sharing clinical report summaries has made some physicians anxious about taking on a new level of responsibility, according to Paul Chang, M.D., a professor and vice-chair of radiology informatics and medical director of pathology informatics at the University of Chicago School of Medicine. "But the technology is here and we are going to have to learn to incorporate it into our practices," he said. "We're going to see more and more use of e-mail, Twitter and those kinds of tools. A lot of medical practices have a blog."

Facilities planning portals can learn from portal pioneers such as BIDMC, which has offered the technology for several years, according to Jonathan B. Kruskal, M.D., Ph.D., radiologist-in-chief and chair of the Department of Radiology. "First, reports should only be made available to patients once approved by an attending physician, since blanks and spelling errors send

the wrong message and cause unnecessary patient concern and loss of confidence in the interpreting radiologist," said Dr. Kruskal, a member of the *RSNA News Editorial Board*.

When it comes to posting more detailed information like report summaries, physicians currently participating in portals are taking time to explain the medical jargon that could otherwise confuse or harm the patient, said Dr. Chang. "It's critical that patients have control over their own healthcare information, but on the other hand, we don't want to pass on information that is potentially harmful if it's misunderstood," said Dr. Chang.

At BIDMC, the entire report summary structure has been modified with the patient in mind, said Dr. Kruskal. "For example, patients become very concerned when they read they may have a cancer and radiologists frequently will include this diagnosis in a list of differential possibilities," he said. "Summaries should be kept short and practical, with full knowledge that these may be read by the patient."

While in the planning stages of adding radiology summaries, Memorial Sloan-Kettering continues to take a balanced—but cautious—approach to its portal content, said Dr. Artz. "We're being as generous as possible with information while still being aware of any concerns from practitioners about what we display," he said.

### Interoperability Standards Necessary

Along with the transition to EHRs, the widespread adoption of portals is also being hindered by the lack of national interoperability standards. At Duke, for example, the plan to offer radiologic images online is contingent on federal funding and development of



Radiologists are preparing to contribute imaging information to online patient portals, which at some institutions already give patients access to lab and X-ray results, prescription refills, appointment scheduling and other information. Some portals already developed include (*from top*) MyHealthVet (U.S. Department of Veterans Affairs), MYMSKCC (Memorial Sloan-Kettering Cancer Center) and HealthView (Duke University Health System).

national standards due to the large size of the images and the proprietary nature of PACS, said Ahmad. "We're planning on image sharing, but these systems have to be able to interface with each other and right now they can't," he said.

*Continued on Page 20*

# Technique “Lights Up” Iron in Brains of Patients with Parkinson Disease

**A** NEW IMAGING technique highlights the altered distribution of metal ions in the brains of patients with Parkinson disease (PD).

Researchers from the University of Florida in Gainesville and Keele University Research Institute for Science and Technology in Medicine in Staffordshire, Great Britain, have combined synchrotron imaging with MR imaging to “map” iron levels within affected brain tissue. The beams generated by the synchrotron are around 100 billion times brighter than a standard hospital X-ray machine and with special sample preparation give scientists a unique view of iron distribution in brain samples.

While numerous peer-reviewed studies have associated accumulation of metals in brain tissue with neurological disorders—in the case of PD, that metal is iron—researchers do not fully understand the role metals play in the disease process.

Researchers utilized cadaver brain tissue samples from patients with PD to gain new information about how the disease process alters iron distribution and chemistry in the brain. Two of the study’s principal investigators presented findings earlier this year at the annual meeting of the American Association for the Advancement of Science (AAAS) in Chicago.

Mark Davidson, Ph.D., a graduate research scientist at the University of Florida described how the intense power of the synchrotron X-ray beam helped their research. “Because of the way the synchrotron physics work,



**Mark Davidson, Ph.D.**  
University of Florida



**Joanna Collingwood, Ph.D.**  
Keele University

it’s almost like a laser,” he said. “It’s extraordinarily intense at the sample. What that allows us to do is to detect a very tiny quantity of material in a large specimen.”

Dr. Davidson likened searching for the extremely tiny iron particles to looking for a dinner plate in the state of Florida. “We tune the X-rays so all we can see is ‘dinner plates,’” he explained. “Then suddenly the three dinner plates in the whole state light up like light bulbs, so we say ‘Aha! There’s a dinner plate in Tampa and one in Orlando and one in Jacksonville.’”

Dr. Davidson took the analogy further: “We can sweep that energy and look at how the ‘dinner plate’ absorbs the X-rays. I can also tell you if the ‘dinner plate’ is right-side up or upside down or whether it’s red or blue.”

*[We can] detect a very tiny quantity of material in a large specimen.*

**Mark Davidson, Ph.D.**

That ability to isolate or “light up” iron ions, said Dr. Davidson, opens the door to a new understanding of not only where the iron is distributed, but also how its chemical makeup is altered over time.

The study was conducted at Diamond, the U.K.’s national synchrotron, and the Advanced Photon Source, a synchrotron located at Argonne National Laboratory near Chicago.

## Study Takes Typical Mapping Focus One Step Further

While synchrotron spectroscopy is used in other types of research, Keele University research fellow Joanna Collingwood, Ph.D., explained the difference in this study’s aim. “Several other groups are also using the synchrotron microfocus spectroscopy approach to study tissues, but the majority of researchers concentrate on the mapping,” said Dr. Collingwood. “Our team

puts a lot of emphasis on combining two approaches—mapping followed by the collection of energy spectra from points of interest in the maps. The latter is what provides us with information about the chemical and mineral form of the element of interest.”

Some observers cautioned that this research will not immediately result in live patient screening abilities, although earlier PD detection is clearly a shared goal. Matthew T. Walker, M.D., an associate professor of radiology and chief of neuroradiology at the Feinberg School of Medicine of Northwestern University in Chicago, said he is very interested in the team’s use of synchrotron spectroscopy as a means to understand the role of iron in PD and the potential impact their findings could have on patient imaging strategies.

“While based at the molecular level, this research advances our knowledge of Parkinson disease and may improve our ability to develop imaging strategies that identify or confirm the disease in the earliest stages,” said Dr. Walker, who also serves as chair of the neuroradiology subcommittee of the RSNA Education Exhibits Committee.

“Parkinson disease remains a clinical diagnosis, in part because contemporary imaging findings are fairly subtle and not necessarily present in the earliest stages of the disease,” Dr. Walker continued. “If further synchrotron research identifies specific iron-containing compounds or conformational states that are particularly toxic to the brain, it will provide another target for molecular and MR imaging research.”

### Study Supports Progress Toward Early Detection, Improved Diagnosis

Dr. Collingwood said the synchrotron study—offering information about the distribution, relative concentration, and storage form of iron—is designed to provide additional information about the way that iron is handled in the vulnerable regions in the Parkinson brain, in the hope that the data can be used to inform the development of MR imaging for early detection and improved diagnosis.

The research may lead to the design of better chelators to remove the iron from affected brains, added Dr. Davidson. “If we can understand the chemistry, we can design chelators that remove only those iron compounds which have moved into states that can induce chain reactions leading to oxidative stress in brain tissue,” he said. “Just by understanding the chemistry well enough maybe we can intervene at the beginning of this process.”

Dr. Walker said if the primary goal is to better understand PD at a molecular and biochemical level and guide therapeutic development in the form of prevention or medical treatment such as chelation, then the direct translation and impact on patients could be felt sooner than later. “What is exciting to me is the potential to target specific iron compounds for dedicated imaging development much like sodium MR imaging in stroke,” he said. He added that while he is optimistic, “Imaging patients at that level will take vast improvements on the technical side, primarily spatial resolution, if this is ever going to translate into mainstream imaging paradigms.”

Researchers from the University of Florida in Gainesville and Keele University Research Institute for Science and Technology in Medicine in Staffordshire, Great Britain, have combined synchrotron imaging with MR imaging to “map” iron levels within affected brain tissue in patients with Parkinson disease. Shown is brain tissue with affected cells and an iron map of the affected tissue.

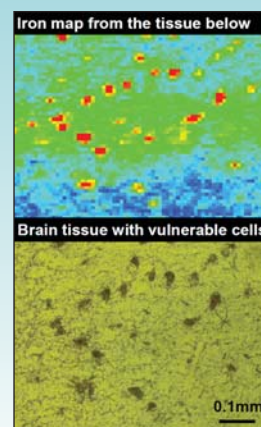


Image courtesy Mark Davidson, Ph.D.  
From “Toward New Therapeutic Approaches for Parkinson Disease,” presented at the 2009 annual meeting of the American Association for the Advancement of Science.

Dr. Collingwood said she and her colleagues are working at high-resolution and high-field to maximize the amount of information they can obtain. “It is the additional information from these techniques that would be used to inform clinical imaging,” she said. “We are not proposing direct translation of research-strength fields and resolutions to a patient population.”

The U.K. and Florida teams are initiating research with a 3 T clinical MR unit to compare what they learn from donor tissues to what can be observed in clinical settings. Dr. Collingwood said the group hopes to confer with other researchers around the world already studying aspects of clinical observation of iron with MR to make the best use of the synchrotron findings for future clinical practice. □

#### Learn More

- To read the abstract for “Bright Light for Better Health,” the presentation made by Mark Davidson, Ph.D., and Joanna Collingwood, Ph.D., at the American Association for the Advancement of Science annual meeting in Chicago in February, go to [www.aaas.org/meetings](http://www.aaas.org/meetings). Click 2009 Highlights in the lefthand sidebar and then click Program. Search the program by abstract title or presenter.
- Find out more about the synchrotrons mentioned in this story:  
Diamond—[www.diamond.ac.uk](http://www.diamond.ac.uk)  
Advanced Photon Source—[www.aps.anl.gov](http://www.aps.anl.gov)

## Neuroradiology at RSNA 2009

Two game show-style Special Focus Sessions at RSNA 2009 will challenge participants on neuroradiology topics:

- Jeopardy: Neuroradiology—Moderated by Jonathan H. Burdette, M.D.
- Wait, Wait, Don't Tell Me: Neuroradiology/Head and Neck Edition—Moderated by Lawrence E. Ginsberg, M.D.

Registration for RSNA 2009 continues at [RSNA.org/register](http://RSNA.org/register). For more information about RSNA 2009, go to [RSNA2009.RSNA.org](http://RSNA2009.RSNA.org).



# R&E Silver Anniversary Campaign Calls on Radiologists to Continue Legacy

**T**HE RSNA Research & Education Foundation Silver Anniversary Campaign may be nearing its finish, but the Foundation is just getting started when it comes to supporting radiology breakthroughs, said R&E leaders.

“The R&E Foundation will continue to significantly influence radiology’s progress,” said Luther W. Brady Jr., M.D., 1985 RSNA president and Silver Anniversary Campaign co-chair. “Whether that influence is in radiology, radiation oncology, nuclear medicine or molecular biology, the Foundation will support successful research.”

With continued investment from the radiology community, the Foundation will be poised to bolster the next generation of radiologic discoveries—just as it has already paved the way for research that was unimaginable two decades ago, said Dr. Brady, Distinguished Professor of Radiation Oncology at Drexel University College of Medicine in Philadelphia.

Over the last 25 years, the R&E Foundation has funded more than 760 grants totaling more than \$29 million.

“I don’t think you can question the influence the Foundation has had on shaping the specialty, not only technological developments but also basic molecular developments,” said Dr. Brady. “Research supported 20 years ago is now in everyday clinical practice.”

Critical to continuing and building the Foundation’s influence, said R&E

leaders, is raising the Silver Anniversary Campaign goal of \$15 million that will enable additional grant funding in the future. In its final lap, the campaign has seen record-high individual member donations—\$1.2 million in 2008—and a \$1.5 million endowment from Paul E. Berger, M.D., the largest individual gift in Foundation history.

More than 40 individual Pacesetter donors have combined to pledge more than \$1 million and corporate support has also grown with new Vanguard donations.

“We’re almost there,” said Anne G. Osborn, M.D., a professor in the Department of Radiology at the University of Utah Medical Center, immediate past-chair of the RSNA R&E Foundation Board of Trustees and a Silver Anniversary Campaign co-chair. “Now we need our members to step up for that last sprint to the finish.”

The campaign was kicked off at RSNA 2005 with a challenge to RSNA members, asking, “What are the 25 questions we hope to answer through research?” Member responses addressed such topics as functional

cancer targeting, population-wide risk assessment, personalized medicine and integration of radiologic data into the electronic health record.

The Foundation will celebrate the campaign’s culmination at RSNA 2009, looking back to honor those instrumental in the Foundation’s history while also looking forward to explore the role the Foundation will have in answering not only the 25 questions, but also other—as yet unimagined—radiologic inquiries.

“Imaging is uniquely positioned to assume critical roles in the elucidation of disease pathways, as well as in screening, characterization and evaluation of response to therapy,” said 2009 RSNA President Gary J. Becker, M.D., who serves on the R&E Foundation Board of Trustees. “Yet to realize the potential of imaging, we must marshal the talent and manpower to make it happen—and that’s where R&E comes in. R&E is about launching investigative careers in the imaging sciences.”



**Robert E. Campbell, M.D.**  
Chair, R&E Individual Giving Subcommittee



**Luther W. Brady Jr., M.D.**  
Co-chair, R&E Silver Anniversary Campaign

*I don't think you can question the influence the Foundation has had on shaping the specialty ... research supported 20 years ago is now in everyday clinical practice.*

**Luther W. Brady Jr., M.D.**



## RSNA has Long-standing Vision

The Foundation can actually trace its beginnings back more than 25 years, to 1977, when Douglas W. MacEwan, M.D., was appointed treasurer for the RSNA Board of Directors. Dr. MacEwan still recalls being pulled aside by 1972 RSNA President Maurice D. Frazer, M.D.

“I was informed, in no uncertain terms, that I should be disciplined and ensure that RSNA saved \$500,000 per year,” recalled Dr. MacEwan, a professor in the Department of Radiology at the University of Manitoba in Winnipeg and 1984 RSNA President.

“I asked, ‘Why so much? What would we do with the savings?’” Dr. MacEwan continued. “Dr. Frazer told me not to worry about the details—we would need it someday for many worthy causes.”

Answers to Dr. MacEwan’s questions emerged in 1984, when the R&E Fund—now the R&E Foundation—was established. At a time of declining federal resources, the Foundation aimed to protect and support radiology research and education with a goal of improving patient care. The first grants were awarded two years later.

“I remember the first grant recipient was a young man from Syracuse University who was interested in PET scanning,” said R&E founding trustee Robert E. Campbell, M.D., chair of the R&E Foundation’s Individual Giving Subcommittee. Dr. Campbell is an emeritus professor of radiology at the University of Pennsylvania School of Medicine. “That was so important—it’s a groundbreaking area that has accelerated in recent years and R&E helped get it off to a good start.”

Dr. Campbell, 1989 RSNA president and an *RSNA News* contributing editor, was among the leaders asked to raise an initial \$8 million in contributions. “RSNA members had never before been asked to contribute to anything like this—there wasn’t anything like it in radiology,” he said.



The RSNA Research & Education (R&E) Foundation has almost reached its \$15 million Silver Anniversary Campaign goal, said campaign co-chair Anne G. Osborn, M.D. “Now we need our members to step up for that last sprint to the finish,” she said. Dr. Osborn, immediate past-chair of the R&E Board of Trustees, gave the Report of the R&E Foundation at RSNA 2008.



## Return on Investment is Key Factor

The Foundation’s success since those early days is demonstrated by its impressive return on investment, said Dr. Osborn. “Our research has shown that R&E has a return of \$30 to \$1,” she said. “By this metric, the Foundation has enabled \$850 million in radiologic research.”

That radiologic research, said Dr. Campbell, has seen some of the specialty’s brightest scholars flourishing in an era of astonishing breakthroughs.

“Many leaders in radiology today got their start with an R&E Foundation grant—everything these successful investigators have done in their academic careers began with those first-step seed grants,” added Dr. Osborn.

## Collaboration Drives Success

The same spirit of collaboration being encouraged in the last months of the campaign has always been key to the Foundation’s success, said R&E founding trustee James G. Kereiakes, Ph.D., a professor in the Department of Radiology at the University of Cincinnati, Ohio. “I was the physics input to the original committee, and I believe a lot of the Foundation’s progress is a result of cooperation among radiologists and physicists and people from other areas,” he said.


Corporate and international contributions have also been critical in sustaining the R&E Foundation, Dr. Brady added. Medical imaging companies and radiologists around the world who give to R&E recognize its proven track

record and understand they are investing in radiology’s future, he said.

Many RSNA members have steadfastly supported the Foundation, said Dr. Brady. “It’s a shame that only 10 percent of members give to the Foundation, but the total raised by that 10 percent has gone up substantially nonetheless,” he said. “Now almost every organization in radiology has a foundation hoping to do what RSNA has done.”

Supporting the Foundation is even more vital amidst the global economic downturn, said Dr. MacEwan. “Our world is in for a rough 10 years,” he said. “We must maintain a sound Foundation which is of great importance to diagnostic imaging, radiation oncology, medical physics and allied sciences.” □

### Listen In

■ Go to [RSNANews.org](http://RSNANews.org) for the online version of this story, where you can hear interviews with Robert E. Campbell, M.D., Luther W. Brady Jr., M.D., and Anne G. Osborn, M.D. The RSNA  Listen In is an *RSNA News* feature designed to enhance understanding of some of the latest topics in radiology.

### Learn More

■ To learn more about the RSNA Research & Education Foundation Silver Anniversary Campaign and how to support it, go to [RSNA.org/Campaign](http://RSNA.org/Campaign).  
■ To read the top 25 questions radiology hopes to answer through research, as submitted by RSNA members, go to [RSNA.org/25questions](http://RSNA.org/25questions).



# Research & Education Foundation Donors

THE Board of Trustees of the RSNA Research & Education Foundation and its grant recipients gratefully acknowledge the contributions made to the Foundation March 21 – April 17, 2009.

Thanks to the support of individuals, corporations, and private practices, the Silver Anniversary Campaign has reached \$13.9 million of its goal.

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*In memory of Henry P. Pendergrass, M.D.*

**Steven C. Bach, D.O.**

**Brent A. Baldwin, M.D.**

*In memory of Henry P. Pendergrass, M.D.*

**Marina & Delfin V. Bernal, M.D.**

**Andrea L. Sakse, M.D. &**

**Michael A. Bruno, M.D.**

*In memory of Henry P. Pendergrass, M.D.*

**Linda N. & Richard L. Clark, M.D.**

**Estelle Cooke-Sampson, M.D.**

**Ghanteswara R. Dasari, M.D.**

**Charles J. DeMarco, M.D.**

**Paulette M. & William I. Dittman, M.D.**

**Margaret S. Houston, M.D. &**

**Richard L. Ehman, M.D.**

**Leanne L. Seeger, M.D. &**

**Rudi Foorman**

**Susan & James D. Fraser, M.D.**

**Aprile B. Gibson, M.D. &**

**Theopluis Gibson**

**Romita & Andrew W. Gomes, M.D.**

**Lyn R. & Stephen M. Greenberg, M.D.**

**Jennifer Casarella &**

**Timothy S. Hanes, M.D.**

**Ana Luisa F. Hanke, M.D.**

**Hiroto Hatabu, M.D., Ph.D.**

**Susan Hattori-Oyama, M.D.**

**Francine J. & Jay P. Heiken, M.D.**

**Timothy J. Higgins, M.D.**

**Jeffrey C. Ho, M.D.**

**Margie R. Joyce, M.D.**

**Craig D. Kesack, M.D.**

**Kolleen Klein**

*In memory of Edward A. Harris*

**Elizabeth & Jay L. Korach, M.D.**

**Jan H. Labuscagne, M.B.Ch.B.**

**Timothy D. Lee, M.D.**

**Gregory D. Linkowski, M.D.**

**Harriet & Edward A. Lyons, M.D.**

**Hedvig Hricak, M.D., Ph.D., Dr. h.c. & Alexander Margulis, M.D., D.Sc., Dr. h.c.**

*In memory of Henry P. Pendergrass, M.D.*

**Ana C. Aguilar &**

**Fabricio N. Martinez, M.D.**

**Aikaterini Mavromataki, M.D.**

**Melanie Strachan, M.B.Ch.B. &**

**Peter Oosthuizen**

**Pedram Parva, M.D.**

**Martin A. Perez, M.D.**

**Donna M. Plecha, M.D.**

**Suzanne Ryan & Niall Power, M.R.C.P.I.**

**Robert S. Pretto, M.D.**

**Connie S. Crawford-Rahn &**

**Norman H. Rahn III, M.D.**

**Jennifer & Michael Rogan, M.D.**

**Alan Rogers, M.D.**

**Faisal A. Sami, M.D.**

**Kathy J. Schilling, M.D.**

**Michael T. Semotuk, M.D.**

**Eleanor M. Smergel, M.D.**

**Genhee So, M.D.**

**Gail B. Carney &**

**David L. Spizarny, M.D.**

**David J. Stephenson, M.D.**

*In memory of Henry P. Pendergrass, M.D.*

**Nathan Stoffberg, M.D.**

**Margaret A. Stull, M.D. &**

**Gregory J. Stull**

**Sayoko & Mutsumasa Takahashi, M.D.**

**Gill M. Taylor-Tyree Sr., M.D.**

**Serge Tchong, M.D.**

**Renate Tewaag, M.D.**

**Ana P. Lourenco, M.D. &**

**Robert J. Tubbs, M.D.**

**Lyda Grimaldo &**

**Josue Solis Ugalde, M.D.**

**Detlev F. Uhlenbrock, M.D.**

**Sheila A. &**

**Frederic E. Vanbastelaer, M.D.**

**Andrea & Jerome F. Wiot, M.D.**

**Margaret & John S. Wynn Jr.**

*In memory of Henry P. Pendergrass, M.D.*

**Ben M. Yang, M.D.**

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

## 2009 R&E Grants Awarded

THE RSNA Research & Education (R&E) Foundation will fund 35 new and continuing research and education grants in 2009, representing nearly \$1.7 million. The Foundation's Board of Trustees noted an increase in the number of education grant applications received and funded compared to previous years. In addition, 26 medical students received grants for sum-

mer projects. A complete listing of the 2009 grant projects is available at [RSNA.org/Foundation](http://RSNA.org/Foundation).

To make grant funding decisions, the Foundation relies on a rigorous review process similar to the one used by the National Institutes of Health, using study sections to evaluate and score applications. Members of the research and education study

sections have expertise in diagnostic and interventional radiology, molecular imaging, radiation oncology, medical physics and radiologic education.

For information on volunteering for an R&E study section, contact Scott Walter, M.S., assistant director of grant administration, at 1-630-571-7816 or [swalter@rsna.org](mailto:swalter@rsna.org).

# Journal Highlights

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

## The Appropriateness of Imaging

**T**O ENSURE a common basis for discussion among patients, practitioners, payers and regulators, it is necessary to unambiguously define an otherwise elusive concept: the appropriateness of diagnostic imaging.

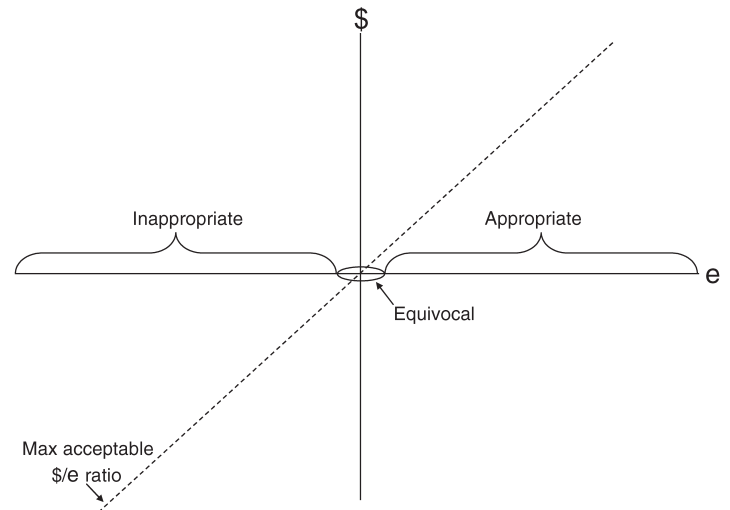
In a review article in the June issue of *Radiology* (RSNA.org/radiology), Christopher L. Siström, M.D., M.P.H., of the University of Florida in Gainesville, offers a conceptual framework for defining the appropriateness of imaging by comparing and contrasting the complementary roles of clinical trials, technology assessment, decision-analytic modeling and consensus methods. Specifically, he discusses:

- Imaging procedures and clinical scenarios
- Technology assessment hierarchy
- Decision-analytic models
- Cost-effectiveness
- RAND/UCLA appropriateness method
- Imaging appropriateness criteria

Dr. Siström defines appropriateness in terms of the expected net health outcome attributable to a diagnostic imaging procedure applied in a specific clinical scenario, expressed in quality-adjusted life-years.

“This comprehensive definition of the appropriateness of imaging shares context with economic analysis informed by technology assessment and thus complements, rather than contradicts, evidence-based imaging,” he concludes.

### Radiology



Schematic shows cost-effectiveness plane with appropriateness terms superimposed on effectiveness axis (*x-axis*, *e*). Procedures falling near the origin of the effectiveness axis would be considered equivocal in appropriateness (between inappropriate and appropriate). As shown here, cost (*y-axis*, *\$*) is orthogonal to appropriateness and is an independent consideration.

(*Radiology* 2009;251:637-649) © RSNA, 2009. All rights reserved. Printed with permission.

## Varying Appearances of Cholangiocarcinoma: Radiologic-Pathologic Correlation

**A**LTHOUGH cholangiocarcinomas with typical imaging features can be easily diagnosed, not all tumors show typical findings and may mimic a variety of tumorous and nontumorous lesions. Understanding the pathologic characteristics of each type

### RadioGraphics

of tumor can be helpful in developing a differential diagnosis and in treatment planning of cholangiocarcinomas, the second most common primary malignancy of the liver.

In an article in the May-June issue of *RadioGraphics* (RSNA.org/radiographics), Yong Eun Chung, M.D., of

*Continued on next page*



Intraductal papillary neoplasm of the biliary tract with marked mucin production. Contrast-enhanced CT scan (a) and T2-weighted MR image (b) show a markedly dilated intrahepatic duct with mural nodules or irregular wall thickening (arrow). Photograph of the gross specimen (c) reveals an intraluminal plaque-like or papillary mass (arrow) and mucin (arrowhead).

(*RadioGraphics* 2009;29:683-700) © RSNA, 2009. All rights reserved. Printed with permission.

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

# Radiology in Public Focus

## Media Coverage of *Radiology*

**I**N April, media outlets carried 245 news stories generated by articles appearing in the print and online editions of *Radiology*. These stories reached an estimated 149 million people.

A news release promoted findings from a study on cumulative radiation risks associated with recurrent CT exams (*Radiology* 2009;251:175-184).

Coverage included *Detroit News and Free Press*, *St. Petersburg Times*, *Vancouver Sun*, *Edmonton Journal*, *Montreal Gazette*, *The Independent* (London, U.K.), *San Antonio Express News*, *Louisville Courier-Journal*, *Arkansas Democrat-Gazette*,

*Omaha World Herald*, *Fresno Bee*, *Arizona Daily Star*, *Ottawa Citizen*, *Daytona Beach News Journal*, *Pittsburgh Tribune-Review*, Reuters, Agence France-Presse, KABC-TV (Los Angeles), KTTV-TV (Los Angeles), WJZ-TV (Baltimore), KDVR-TV (Denver), WTVF-TV (Nashville, Tenn.), KDKA-TV (Pittsburgh), WIBV-TV (Buffalo, N.Y.), WBTV-TV (Charlotte, N.C.), KRIV-TV (Houston), WPSG-TV (Philadelphia), *New England Cable News* (Boston), WHTM-TV (Harrisburg, Pa.), KABC-AM (Los Angeles), Yahoo! News, MSN Health, WebMD, *usnews.com*, *health.com*, *thebostonchannel.com* and *businessweek.com*.



## June Outreach Activities Focus on Sports and Trauma Imaging

In June, RSNA's *60-Second Checkup* radio program focuses on the use of MRI to detect musculoskeletal trauma and diagnose sports injuries. RSNA will distribute the "60-Second Checkup" audio program to radio nearly 100 radio stations across the U.S. *60-Second Checkup* starts with a short introduction by a reporter and includes a brief interview with an expert.

## VIEWING TECHNOLOGY

### Answer

[Question on page 4.]

**A** General purpose color monitors may not have the brightness, spatial resolution or grayscale accuracy of monitors optimized for radiology.

Q&A courtesy of AAPM.

## Varying Appearances of Cholangiocarcinoma: Radiologic-Pathologic Correlation

*Continued from Page 17*

the Yonsei University Health System in Seoul, Korea, and colleagues discuss cholangiocarcinoma in terms of:

- Epidemiologic features, risk factors and morphologic classification
- Typical imaging appearances and their correlation with pathologic findings
- Findings that can help differentiate cholangiocarcinoma from other benign or malignant diseases

"Cholangiocarcinoma can be

classified on the basis of gross morphologic features into mass-forming, periductal infiltrating and intraductal types and the imaging features may depend on the underlying causative risk factors," Dr. Chung and colleagues conclude. "With pathologic correlation, these imaging findings can be related to emerging pathologic concepts of intraductal papillary neoplasm of the biliary tract and biliary intraepithelial neoplasia."

## *RadioGraphics* to Feature Three AFIP Best Cases

Instead of two, the July-August issue of *RadioGraphics* will feature three "best cases" from the Armed Forces Institute of Pathology (AFIP) **RadioGraphics** as judged by the staff at the Department of Radiologic Pathology. Radiologic-pathologic correlation is emphasized and the causes of the imaging signs of various diseases are illustrated. AFIP cases also are now featured once a month in *RSNA Weekly*, delivered by e-mail to members and viewable online at [RSNA.org/rsnaweekly/current.html](http://RSNA.org/rsnaweekly/current.html).

# Working For You

## Workshop Sends Patient-Centered Radiology Course on the Road

**M**ORE THAN a dozen people gathered at RSNA Headquarters in April for Patient-Centered Radiology, a workshop for developing concepts based on the “Patient-Centered Radiology: Use It or Lose It” refresher course at the RSNA annual meeting. The workshop was designed as a “train the trainer” session to further develop the concepts presented in the course, primarily that radiologists should consider the patient’s experience and perception of radiology and become more comfortable with and visible in patient interactions. Workshop attendees developed tools to present the concepts at their institutions, local and regional societies, subspecialty meetings and other forums.

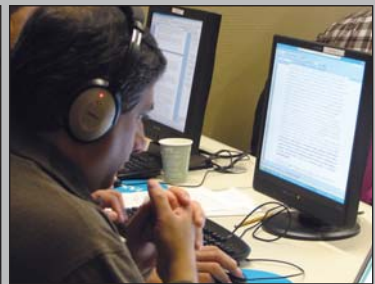
The session also included information on new patient-care models being promoted by other medical specialties and how they affect radiology, as well as news about the American College of Radiology’s “Face of Radiology” campaign. In a related effort to build relationships with referring physicians, the group also learned about “Radiology and the Family Physician,” a refresher course to be presented in conjunction with the American Academy of Family Physicians at RSNA 2009.

Members interested in hosting a Patient-Centered Radiology session can contact Marijo Millette at 1-630-590-7727 or [mmillette@rsna.org](mailto:mmillette@rsna.org).



### RSNA Sessions Foster Quality Grant Writing

The four-session 2008-2009 Advanced Course in Grant Writing, began in September and concluded in late April at RSNA Headquarters in Oak Brook, Ill. A dozen attendees completed the course, designed to help faculty members in radiology, radiation oncology or nuclear medicine programs—who have never been principal investigators on NIH or NSF-funded projects—develop a quality grant application to submit to a government or private funding entity.



# Program and Grant Announcements

## RSNA Advanced Course in Grant Writing

**Application Deadline – July 31**

Applications are now being accepted for this course designed to help participants prepare and submit a National Institutes of Health (NIH), National Sciences Foundation (NSF) or equivalent grant application by the October 2010 deadline. The course, to be held at RSNA Headquarters in Oak Brook, Ill., will consist of four multiday sessions spanning a 9-month period. For more information and an application, go to [RSNA.org/Research/educational\\_courses.cfm](http://RSNA.org/Research/educational_courses.cfm) or contact Fiona Miller at 1-630-590-7741 or [fmiller@rsna.org](mailto:fmiller@rsna.org).

## RSNA Derek Harwood-Nash International Fellowship

**Application Deadline—July 1**

International radiologists three to 10 years beyond training are invited to apply for this 6- to 12-week fellowship at a North American institution. One or two fellows will be selected.

The application for this program is available at [RSNA.org/international/CIRE/dhnash.cfm](http://RSNA.org/international/CIRE/dhnash.cfm). For more information, contact Fiona Miller at [fmiller@rsna.org](mailto:fmiller@rsna.org) or 1-630-590-7741.



## RSNA/AUR/ARRS Introduction to Academic Radiology Program

**Application Deadline—July 15**

Sponsored by RSNA, the American Roentgen Ray Society (ARRS) and Association of University Radiologists (AUR), this program introduces second-year residents to academic radiology, demonstrates the importance of research in diagnostic radiology, illustrates the excitement of research careers and introduces residents to successful clin-

ical radiology researchers. Successful applicants will be assigned to either a seminar held during RSNA 2009 or the ARRS annual meeting in 2010.

More information and an application/nomination form are available at [RSNA.org/Research/educational\\_courses.cfm](http://RSNA.org/Research/educational_courses.cfm)



## Patients Portals Move Toward Widespread Use

*Continued from Page 11*

To that end, RSNA's Integrating the Healthcare Enterprise (IHE®) has defined a method of exchanging medical documents and images that enables the interface of information by networks of healthcare sites. A goal of RSNA's new Radiology Reporting Committee is to make radiology reports compatible with this same architecture.

Considering the major transition ahead, patient portals won't become

commonplace overnight, said Dr. Schwartz. However, as early portal adopters expand their sites and share their successes, it is likely that most facilities will have adopted some form of portal in the next five years, he said.

"I think most facilities will have some flavor of portal in place in the near future," he said. "Then again, I thought most doctors would be computerized by now." □

### Learn More

Check out some of the patient portals mentioned in this story:

- MyHealth@Vet (U.S. Department of Veterans Affairs)—[www.myhealth.va.gov](http://www.myhealth.va.gov)
- MYMSKCC (Memorial Sloan-Kettering Cancer Center)—[my.mskcc.org](http://my.mskcc.org)
- HealthView (Duke University Health System)—[healthview.dukehealth.org](http://healthview.dukehealth.org)

## Radiology Informatics at RSNA 2009

Eliot Siegel, M.D., of the University of Maryland, is among the presenters of the two-part RSNA 2009 course, "Practical Informatics for the Practicing Radiologist." The course will address such topics as:

- Improving efficiency with workflow and communication software and hardware advances

- A strategic radiology quality and key performance indicator framework
- Approaches to minimize eye strain, neck pain, repetitive motion disorders and overall stress without compromising radiology reading room productivity
- Challenges and unforeseen obstacles



encountered when deploying a new PACS

The course is presented in conjunction with the Society for Imaging Informatics in Medicine.

Enrollment for this and all RSNA 2009 courses begins June 30. For more information, go to [RSNA2009.RSNA.org](http://RSNA2009.RSNA.org).

# Program and Grant Announcements

## New for RSNA 2009: Financial Seminars Offered Saturday and Monday

**D**URING this year's annual meeting, RSNA will again offer two practical, unbiased investment seminars at McCormick Place. While in the past all financial sessions have been held the Saturday before the annual meeting, this year a Monday evening option is offered as well.

### Effective Real Estate Investment Strategies

**Saturday, November 28 • 1:00 – 5:00 p.m.**

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

This fast-paced course reveals benefits as well as pitfalls of numerous real estate investment strategies and explains how to find, evaluate, finance, acquire and sell investment real estate. Designed for investors at any level of involvement, the course provides guidelines for making informed investment decisions:

- Strategies for Maximizing Investment Returns and Property Value
- Working With the Seller: Lender of the Future?
- Why Real Estate Investors Pay Fewer Taxes
- Home Mortgages: To Prepay or Not to Prepay
- Advantages of Owning Your Own Office Building
- Vacation Homes: Great Time to Buy?
- REITs: Passive Ownership of Shopping Centers and Office Towers

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

**Monday, November 30 • 4:30 – 6:00 p.m.**

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

This presentation will provide critical new information and ideas on how to deal with retirement plans and protect assets from creditors. The recent economic crisis has spawned new legislation, problems and opportunities which directly affect planning and financial security. Included in this seminar are comprehensive illustrations and essential information to help physicians decide how to use asset protection techniques and effectively implement current retirement planning tools:

- Asset Protection in the New Economy
- Understanding the New Rules for IRA and Retirement Plan Withdrawals
- How the Proposed Income Tax Rules Affect Retirement Planning and Asset Protection
- The New Federal Estate Tax Rules and How They Affect Retirement Planning
- Life Insurance as the “Silver Bullet”
- IRA Distribution Strategies, Including Roth IRA Conversions
- The “Good News” about the Bad Economic News

Registration for these seminars opens on June 30. Register online at [RSNA.org/register](http://RSNA.org/register) or use Registration and Housing Form 1 included in the Advance Registration, Housing and Course Enrollment brochure. You must be registered for the annual meeting to enroll in these seminars. An additional fee applies. These seminars do not qualify for *AMA PRA Category 1 Credit™*. For more information, contact the RSNA Education Center at 1-800-381-6660 x7772 or [ed-ctr@rsna.org](mailto:ed-ctr@rsna.org).



# News about RSNA 2009

## Course Enrollment Begins June 30

Beginning June 30, the Advance Registration, Housing and Course Enrollment brochure will be available online as a PDF and in print. RSNA will mail the brochure to all RSNA/AAPM members and all non-member registrants as of June 1, excluding those who "opted out" of a printed copy at the time of online registration. Others may download and print the brochure at [RSNA.org/register](http://RSNA.org/register).

Enrollment is required for various meeting components including refresher, multisession and financial courses, informatics workshops and RSNA tours and events.

**CME Update: Earn up to 90.75 AMA PRA Category 1 CME Credits\* at RSNA 2009**



## INTERNATIONAL VISITORS

### International Letters Available—Act Now for Visa

Personalized letters of invitation to RSNA 2009 are available for request at [RSNA2009.RSNA.org](http://RSNA2009.RSNA.org). Click International Visitors. This section of the annual meeting Web site also includes important information about the visa application process. Visa applicants are advised to apply as soon as they decide to travel to the U.S. and at least three to four months in advance of their travel date. International visitors are advised to begin the visa process now.

## Request a Printed Copy of the *RSNA Meeting Program*

**B**EGINNING in mid-June, RSNA members can request an advance copy of the printed *RSNA Scientific Assembly and Annual Meeting Program*. The *RSNA Meeting Program* is a benefit of membership.

To request a printed copy, go to

[RSNA2009.RSNA.org](http://RSNA2009.RSNA.org) and click Meeting Program. Members may also call the RSNA Membership Department at 1-877-RSNA-MEM (776-2636) (U.S. and Canada) or 1-630-571-7873. The deadline is September 15.

Programs will not be mailed

to members who do not request an advance copy and can be picked up at the annual meeting, along with the meeting bag. *RSNA Meeting Program* content will be available online before, during and after the meeting.

## Registering for RSNA 2009

There are four ways to register for RSNA 2009:

### 1 Internet—Fastest way to register!

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

### 2 Fax (24 hours) 3 Telephone

1-800-521-6017 (Monday–Friday,  
1-847-996-5401 8:00 a.m.–5:00 p.m. CT)  
1-800-650-7018  
1-847-996-5876

### 4 Mail

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



## Important dates for RSNA 2009

### June 30

Course enrollment opens

### October 23

International deadline to have full-conference materials mailed in advance

### November 6

Final discounted advance registration, housing and course enrollment deadline, to have full-conference materials mailed in advance

### Nov. 29 – Dec. 4

RSNA 95th Scientific Assembly and Annual Meeting

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

## Registration Fees

### BY 11/6 ONSITE

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





# Meet MOC requirements with confidence!

Use RSNA educational resources and online tools\*

Visit [RSNA.org/Education/NewsMOC](http://RSNA.org/Education/NewsMOC)  
(or call 1-800-272-2920)

RSNA Education Portal

**RSNA Education**

Maintenance of Certification (MOC)

Developed in accordance with guidelines from the American Board of Medical Specialties, MOC is a process of maintaining one's professional development over the course of a ten-year certificate from the American Board of Radiology.

- MOC Process** • Link to the American Board of Radiology, which oversees the Maintenance of Certification process.
- CME** • Complete accredited RSNA online continuing medical education programs including RadiGraphics tests, refresher courses, and Cases of the Day.
- SAMs** • Peer-reviewed online RSNA SAMs are available in most subspecialty content areas.
- PGI** • RSNA's Continuous Quality Improvement Initiative is a program committed to continual excellence in practice. Learn more about quality principles.
- MOC Registry** • Register to receive personalized updates from RSNA on available education for your MOC needs.

**My Professional Learning Map** (formerly referred to as My Practice Profile)

- My CME Action Plan** • Develop a personal learning plan based on your practice profile and needs.
- RSNA CME Credit Repository** • Verify and print your RSNA-awarded AMA PRA Category 1™ CME and SAM credits.
- MOC File** • Use the MOC file to upload and store your pertinent MOC information.



\* Provided free to RSNA members

# Product News

## NEW PRODUCT

### Customizable Imaging Access Portal

**A**CCELARAD has launched *SeeMyRadiology.com*, a medical imaging access, archiving and collaboration service benefiting patients, hospitals, radiologists and referring physicians regardless of affiliation.

Imaging patients can use *SeeMyRadiology.com* to create their own personalized libraries of exams in a centralized location. They can also share their images easily and securely with physicians of their choice. For hospitals and imaging businesses, *SeeMyRadiology.com* supports streamlined cross-enterprise image communication with other imaging businesses and referring physicians. The application integrates with any PACS.



## NEW PRODUCT

### Compact Notebook Cart

AFC Industries, Inc. ([www.afcindustries.com](http://www.afcindustries.com)) introduces a lightweight notebook cart that can be conveniently positioned almost anywhere in a medical facility. The easily maneuverable cart features a compact, round base with rubberized casters and retractable keyboard tray with optional slide-out mouse support. The cart is pneumatically height-adjustable and has a lockable notebook cover to keep equipment secure. The cart's under-the-desktop power strip has a retractable cord to help eliminate clutter.



## NEW PRODUCT

### Integrated Speech Recognition

Agfa HealthCare ([www.agfa.com/healthcare](http://www.agfa.com/healthcare)) announces the release of TalkStation™ 4.0, its integrated speech recognition workflow solution for radiology reporting. The new software platform includes features that improve physician efficiency, enhance speech recognition, and provide tighter integration with the company's IMPAX® PACS.

New features include resident training tools, Web-based report signoff and a "My Activities" toolbar that makes it easy to find preliminary and corrected reports as well as resident reports requiring approval. Automatic color coding of report text based on input device draws the radiologist's eyes to report areas at greater risk for inaccuracy.

## FDA CLEARANCE

### Skin and Surface Brachytherapy Applicator

A treatment applicator for use with the Axxent® Electronic Brachytherapy (eBx) system by Xoft, Inc. ([www.xoftinc.com](http://www.xoftinc.com)), previously approved for accelerated treatment of early stage breast cancer and endometrial and rectal cancers, has also received FDA clearance for use on any external or internal surface of the body where radiation therapy is indicated. The FDA clearance covers skin indications as well as surface indications, allowing radiation therapy procedures with the Xoft source during surgery.



# RSNA.org

## Membership Home Page Gets a New Look

**A**LONG WITH an inviting new look, updated navigational tools and an e-mail feature enabling members to alert colleagues about RSNA benefits, the Membership home page continues to promote the full array of RSNA benefits that help you maintain your professional edge. To see what's new and get a refresher on the rewards of membership, go to [RSNA.org/Membership/index.cfm](http://RSNA.org/Membership/index.cfm).

### 1 myRSNA

Use the tabs and drop-and-drag widgets on the customizable Web portal myRSNA to obtain, organize and store content. Create a profile, upload files, bookmark Web pages and access the radiology-specific search engine, Yottalook™.

### 2 RSNA 2009 Registration

Take advantage of free advance registration to the RSNA annual meeting currently under way and course enrollment which opens June 30.

### 3 Radiology, RadioGraphics

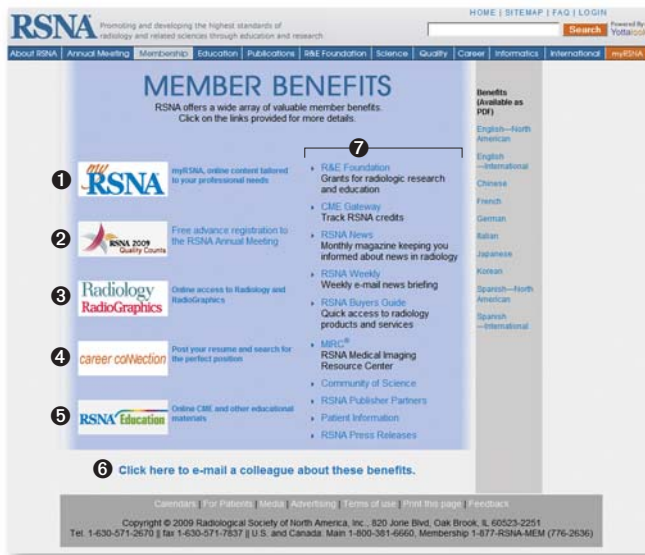
Access RSNA's prestigious journals. *Radiology* features the most current, clinically relevant and highest quality radiology research. RSNA's bimonthly education journal, *RadioGraphics*, is the only peer-reviewed journal devoted exclusively to radiology education exhibits, evolving technology and CME.

### 4 Career Connection

Search for radiology and healthcare jobs at RSNA's online resource, updated daily with the latest radiology job listings and postings from around the world. Post your resume at no charge.

### 7 RSNA News and More

From the member benefits page you can also access *RSNA News* online, the RSNA Medical Imaging Resource Center, Community of Science, R&E Foundation, discounts on medical books and products, patient information and RSNA press releases.



### 6 RSNA Education

Find opportunities to earn CME credit on the RSNA Education portal, which also offers ways to organize, record and store CME and MOC-related activities.

### 6 E-mail a Colleague

This new feature allows members to share information on any of the wide array of RSNA benefits by e-mailing an alert to colleagues.

**E**connections  
Your online links to RSNA

### RSNA.org

#### myRSNA®

[RSNA.org](http://RSNA.org) – click My RSNA

#### Radiology Online

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

#### RadioGraphics Online

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

#### RSNA News

[rsnanews.org](http://rsnanews.org)

#### Membership Applications

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

#### RSNA Membership Directory

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

#### Education Portal

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

#### RSNA CME Credit Repository

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

#### CME Gateway

[CMEgateway.org](http://CMEgateway.org)

#### International Radiology Outreach Resources

[RSNA.org/International/IROR.cfm](http://RSNA.org/International/IROR.cfm)

#### InterOrganizational Research Council

[radresearch.org](http://radresearch.org)

#### RSNA Medical Imaging Resource Center

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

#### RSNA Career Connection

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

#### RadiologyInfo™

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

#### RSNA Press Releases

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

#### RSNA Research & Education (R&E) Foundation

Make a Donation  
[RSNA.org/donate](http://RSNA.org/donate)

#### Silver Anniversary Campaign

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

#### Community of Science

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

#### CQI Initiative

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

#### Resident Learning Portfolio

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

#### RSNA 2009

[RSNA2009.RSNA.org](http://RSNA2009.RSNA.org)

#### Register for RSNA 2009

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

**CALENDAR**

# Medical Meetings July – October 2009

**JULY 12–16**

Society of Radiopharmaceutical Sciences (SRS), 18th International Symposium on Radiopharmaceutical Chemistry, Edmonton, Alberta • [www.srs.snm.org](http://www.srs.snm.org)

**JULY 23–25**

Latin American Society of Pediatric Radiology/Brazilian College of Radiology, International Symposium on Pediatric Radiology, Rio de Janeiro • [www.pedrad2009.com.br](http://www.pedrad2009.com.br)

**JULY 26–30**

American Association of Physicists in Medicine, 51st Annual Meeting, Anaheim Convention Center, Calif. • [www.aapm.org/meetings/09AM](http://www.aapm.org/meetings/09AM)

**JULY 27–31**

Society of NeuroInterventional Surgery (SNIS), 6th Annual Meeting, Boca Raton Resort & Club, Florida • [www.snisonline.org](http://www.snisonline.org)

**JULY 31–AUGUST 2**

Royal Australian and New Zealand College of Radiologists (RANZCR), New Zealand Branch, Annual Scientific Meeting, Te Papa, Wellington, New Zealand • [www.ranzcr2009.co.nz](http://www.ranzcr2009.co.nz)

**AUGUST 30–SEPTEMBER 3**

12th World Congress of the World Federation for Ultrasound in Medicine and Biology (WFUMB), Sydney Convention and Exhibition Center, Darling Harbor, Australia • [www.wfumb2009.com](http://www.wfumb2009.com)

**AUGUST 31–SEPTEMBER 5**

International Skeletal Society (ISS), 36th Annual Meeting, The Capital Hilton, Washington D.C. • [www.internationalskeletalsociety.com](http://www.internationalskeletalsociety.com)

**SEPTEMBER 10–13**

European Society of Urogenital Radiology (ESUR), European Symposium on Urogenital Radiology, Royal Olympic Hotel, Athens, Greece • [www.esur2009.gr](http://www.esur2009.gr)

**SEPTEMBER 13–17**

National Cancer Institute (NCI), Academy of Molecular Imaging (AMI) and the Society for Molecular Imaging (SMI), Imaging in 2020: A Conference on Molecular Imaging, Jackson Lake Lodge, Jackson Hole, Wyo. • [www.Imagingin2020.com](http://www.Imagingin2020.com)

**SEPTEMBER 19–23**

Cardiovascular and Interventional Radiological Society of Europe (CIRSE), Annual Scientific and Postgraduate Educational Meeting, Lisbon Congress Center, Portugal • [www.cirse.org](http://www.cirse.org)

**SEPTEMBER 23–26**

Academy of Molecular Imaging (AMI), the Society for Molecular Imaging (SMI), the European Society for Molecular Imaging (ESMI) and the Federation of Asian Societies for Molecular Imaging (FASMI), World Molecular Imaging Congress 2009, Palais des Congress de Montreal • [www.wmicmeeting.org](http://www.wmicmeeting.org)

**SEPTEMBER 30–OCTOBER 3**

American Society of Emergency Radiology (ASER), Annual Meeting, Loews Royal Pacific Resort, Orlando, Fla. • [www.erad.org](http://www.erad.org)

**OCTOBER 2–6**

North American Society for Cardiac Imaging (NASCI), 37th Annual Meeting, Omni Orlando Resort at ChampionsGate, Florida • [www.nasci.org](http://www.nasci.org)

**OCTOBER 7–11**

American Society of Head and Neck Radiology (ASHNR), 43rd Annual Meeting, Sheraton New Orleans Hotel • [www.ashnr.org](http://www.ashnr.org)

**OCTOBER 8–10**

American Society for Clinical Oncology (ASCO), Breast Cancer Symposium: Integrating Emerging Science into Clinical Practice, San Francisco Marriott • [www.breastcasymposium.org](http://www.breastcasymposium.org)

**OCTOBER 10–14**

European Association of Nuclear Medicine (EANM), Annual Congress, Barcelona International Convention Center, Spain • [www.eanm09.eanm.org](http://www.eanm09.eanm.org)

**OCTOBER 11–13**

Radiology Business Management Association (RBMA), Fall Educational Conference, Sheraton Wild Horse Pass, Chandler, Ariz. • [www.rbma.org](http://www.rbma.org)

**OCTOBER 15–17**

Society of Chairs of Academic Radiology Departments (SCARD), Annual Meeting, Fairmont Orchid Hawaii, Kohala Coast • [www.scardweb.org](http://www.scardweb.org)

**OCTOBER 16–20 VISIT THE RSNA BOOTH**

French Society of Radiology, 100th Annual Meeting, Le Palais des Congrès de Paris • [www.sfrmet.org](http://www.sfrmet.org)

**NOVEMBER 29–DECEMBER 4**

**RSNA 2009, 95th Scientific Assembly and Annual Meeting, McCormick Place, Chicago • [RSNA2009.RSNA.org](http://RSNA2009.RSNA.org)**