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Dianne Georgian-Smith, M.D.
Department of Radiology
Brigham and Women's Hospital
R&E Grant Recipient

Training Radiologists to See a Telltale Sign of Breast Cancer

Thanks to an RSNA R&E Foundation education grant, Dr. Georgian-Smith developed software that analyzes the differences in the search patterns of trainees versus expert mammography readers who can identify architectural distortion, a difficult-to-spot mammographic sign that's highly specific for breast cancer. The data collected will help to develop a tutorial that trains readers to "see" the finding and deliver more comprehensive diagnoses to women worldwide.

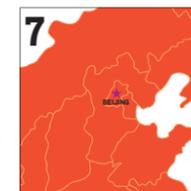
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CE, NEW TECHNOLOGY ARE BENEFITS FOR RTs AT RSNA 2010

Ellen Lipman, M.S., R.T.(R)(MR), CAE, director of professional development for the American Society of Radiologic Technologists, wants physicians to know why sending their radiologic technologists to ASRT@RSNA 2010 is a great return on investment:

Quality CE, Quickly. “Technologists work hard and are required to earn continuing education credits on top of everything else,” Lipman said. “With a full load of cutting-edge classes this year, ASRT@RSNA 2010 is an opportunity for RTs to secure up to 10 Category A+ CE credits in only one-and-a-half days.”

Nonstop Networking. “ASRT@RSNA 2010 is a great way for RTs to exchange information with their fellow technologists—RSNA annual meeting attendees return to the workplace with fresh ideas that can be applied immediately to improving patient care.”

Late-breaking Learning. “This year’s dynamic courses are specifically designed to provide RTs with in-depth knowledge about the latest and most significant trends in the field.”

Tomorrow’s Technology. “With hundreds of exhibitors spanning three halls in McCormick Place, there are boundless opportunities for RTs to get ready for what’s new.”



Lipman



“Physicians know the RSNA annual meeting is a way to keep their professional edge,” Lipman said. “It’s also a perfect opportunity to recharge, re-energize and refocus their team of radiologic technologists.”

Learn more by going to www.asrt.org and clicking ASRT@RSNA under Events & Conferences.

SNM Image of the Year Shows Parathyroid Disease in Greater Detail

SNM’s 2010 Image of the Year illustrates the potential of hybrid molecular imaging to provide precise information about the location and function of hyperparathyroidism. Researchers selected the image from more than 1,500 studies presented over the course of four days during SNM’s 57th Annual Meeting in Salt Lake City.



“This year’s Image of the Year provides an example of a novel imaging presentation, using a combination of single photon emission CT (SPECT) with high resolution CT angiography, which pinpoints the abnormally functioning parathyroid adenoma and the arteries feeding it,” said Michael M. Graham, Ph.D., M.D., immediate past-president of SNM. “With this information, physicians may be able determine the exact location and size of the abnormal gland and plan minimally invasive surgery that reduces operative time, thus improving patient care.”

The image is included in the study “Clinical Value of Fusion Images of MIBI SPECT and Enhanced MDCT Registered by Workstation in Primary Hyperparathyroidism,” by Kunihiko Nakada, M.D., of Hokko Memorial Hospital in Sapporo, Japan, and colleagues.

ARRS Names Officers, Presents Gold Medals

Joseph K.T. Lee, M.D., was named the American Roentgen Ray Society (ARRS) 2010-2011 president at the organization’s recent annual meeting.

Other 2010-2011 officers are: **James A. Brink, M.D.**, president-elect; **Charles E. Kahn Jr., M.D.**, vice-president; and **Melissa Rosado de Christenson, M.D.**, secretary/treasurer.

Also at the meeting, 2010 ARRS Gold Medals were presented to **David E. Kuhl, M.D.**, a professor of radiology at the University of Michigan Medical School, **Philip O. Alderson, M.D.**, dean of the School of Medicine and vice-president for health sciences at Saint Louis University, and **Barry Benson Goldberg, M.D.**, a professor of radiology at Jefferson Medical College in Philadelphia.



All lectures will be presented in Arie Crown Theater.

RSNA 2010 Lecture Schedule Set

SUNDAY, NOVEMBER 28 • 8:30 A.M.

Special Lecture—John Mendelsohn, M.D.
Annual Oration in Diagnostic Radiology—Christian J. Herold, M.D.

MONDAY, NOVEMBER 29 • 1:30 P.M.

Eugene P. Pendergrass New Horizons Lecture—Sanjiv S. Gambhir, M.D., Ph.D.
Special Lecture—Atul Gawande, M.D., M.P.H.

TUESDAY, NOVEMBER 30 • 1:30 P.M.

Special Address—President Bill Clinton*

WEDNESDAY, DECEMBER 1 • 1:30 P.M.

Annual Oration in Radiation Oncology—Zvi Fuks, M.D.

*Tickets required. Tickets will be available starting Sept. 1 at RSNA2010.RSNA.org. Tickets will be offered to professional registrants on first-come, first-served basis. Professional registrants without tickets, as well as registrants in other categories, will be able to view this lecture via simulcast in one of 10 overflow rooms at McCormick Place.

My Turn

Global Expansion Makes Us All Wiser

A PALPABLE FEELING of excitement always pervades the RSNA annual meeting. It’s not just because of the vast numbers of attendees, exhibitions and cutting-edge research presentations. It’s also because when walking through the halls, one hears snatches of Chinese, Spanish, German, Russian, French, Swedish, Arabic, Korean, Portuguese, Italian and many other languages and knows immediately that this is an important international event. Each year, beginning radiologists and established practitioners, academic leaders and those with aspirations to lead in the future, come from all over the world to learn, teach and meet. One third of RSNA meeting attendees and about 60 percent of journal submissions come from outside North America.

RSNA aims to advance radiology around the world through education and research. As participants in the annual meeting and on committees, our international members give us a chance to learn about what resources are needed where and how we can help each other. RSNA initiatives for educational outreach include the Introduction to Research for International Young Academics program, the International Visiting Professor Program, fellowships, Research & Education Foundation seed grants, and a promising pilot “e-mentoring” program. These initiatives provide wonderful learning experiences for trainees and educators alike.

Equally importantly, as speakers, authors and editorial board members and reviewers, RSNA’s international members open our eyes to countless innovative scientific and technological developments. They also provide fresh perspectives on everyday dilemmas. Depending partly on cultural norms, different countries may handle the same disease in radically different ways—for

example, favoring aggressive treatment over watchful waiting or vice versa, medical over surgical treatment or relying on different imaging modalities for diagnosis or staging. Similarly, one nation may emphasize broader training where another pours its resources into specialization. We all grow wiser as we compare experiences and share data and ideas.

We are fortunate to live at a time of relatively easy travel and rapid global communication. Under these circumstances, by comparing, strengthening and perhaps even unifying educational systems and practice standards around the world, we can accelerate data collection, exchange of knowledge and advances in medicine to an unprecedented degree.

RSNA continues to take actions necessary to allow our field of biomedical imaging to advance and thrive in the future. The more RSNA becomes a *global* educational and scientific society, the more we have to offer the worldwide radiology community.



2010 RSNA President **Hedvig Hricak, M.D., Ph.D., Dr. h.c.**, chair of the Department of Radiology at Memorial Sloan-Kettering Cancer Center in New York City, is a professor of radiology at Cornell University Medical College and an attending radiologist at Memorial Hospital in New York City.

Read about “China Presents,” a special RSNA 2010 session devoted to radiologic studies from the world’s most populous nation and fastest growing economy, on Page 7. The September 2010 issue of *RSNA News* will feature a story on the “Latin America Presents” session also scheduled for RSNA 2010.

To learn more about RSNA’s international initiatives, go to RSNA.org and click International in the top navigation bar.



Honorary Membership Bestowed in Italy

Three American radiologists were recently named honorary members of the Italian Society of Medical Radiology at its annual meeting in Verona. Left to right: Leonard Berlin, M.D., a professor of radiology at Rush University Chicago and vice-chair of radiology at Skokie Hospital in Ill.; Elias Zerhouni, M.D., a professor of radiology at Johns Hopkins Hospital in Baltimore, Special Envoy on Scientific Technology for President Obama and former Director of the National Institutes of Health; and Stuart E. Mirvis, M.D., a professor of radiology and vice-chair of medical affairs at the University of Maryland School of Medicine in Baltimore. Dr. Zerhouni will receive the RSNA Gold Medal at RSNA 2010.

White House Appoints First Radiologist Fellow

Pat Basu, M.D., M.B.A., an attending radiologist at Stanford University and the VA Palo Alto Health Care System, both in California, has been appointed a White House fellow and special assistant to the President. Dr. Basu is the first radiologist to receive such an appointment and one of only a few physicians to serve in this role.

A national and international lecturer, Dr. Basu is Stanford’s course director of health policy, finance and economics. Dr. Basu is a former American College of Radiology (ACR) Rutherford Fellow and served on ACR’s Resident and Fellow Section.

The full-time, paid position typically involves spending a year working as a fellow with senior White House staff, cabinet secretaries and other top-ranking government officials, participating in roundtable discussions with renowned leaders from private and public sectors and traveling domestically and internationally to study U.S. policy.



RSNA Board of Directors Report

At its June meeting, the RSNA Board of Directors approved the Society's 2010-2011 budget, continued planning for RSNA 2010 and looked to the future of peer-reviewed publications and intersociety collaborations.

Our Society is Financially Healthy

Amid challenges posed by a weak economy, RSNA has remained in an overall growth mode as measured by membership, annual meeting registration, subscriptions to the new *Radiology* Legacy Collection and other indicators.

Additional Lectures Announced for Annual Meeting

RSNA looks forward to offering additional lectures during RSNA 2010. Atul Gawande, M.D., author of *The Checklist Manifesto*, will speak Monday, November 29, on "Real Reform: Facing the Complexity of Health Care." President Bill Clinton will deliver a special address on Tuesday, November 30. More details about these lectures and the New Horizons Lecture and annual orations in diagnostic radiology and radiation oncology will be published in an upcoming issue of *RSNA News*.

RSNA will dedicate this year's Annual Oration in Radiation Oncology to the memory of leading radiation oncologist and 1993 RSNA gold medalist Frank L. Hussey, M.D., who died April 26 at the age of 84. Also to be honored at the annual meeting are the 2010 RSNA Outstanding Researcher, Charles A. Mistretta, Ph.D., of the University of Wisconsin, and the co-recipients of the 2010 RSNA Outstanding Educator Award, Gillian Lieberman, M.D., of Beth Israel Deaconess Medical Center and Kitt Shaffer, M.D., Ph.D., of Harvard Medical School.

A China Medical Engineering Forum, co-sponsored by the Chinese Medical Engineering Society, will be offered at RSNA 2010. More information on the forum will be available at *RSNA2010.RSNA.org*.

The Associated Sciences Consortium, charged with planning annual meeting content for radiologic technologists, nurses and other allied professionals, welcomes the U.K. Society of Radiographers as a new member.

Changes for RSNA 2011 will facilitate development of even more series courses, a popular annual meeting offering that blends refresher course material and cutting-edge science on select topics. Starting with the 2011 annual meeting, the

abstract submission deadline will be March 31. In addition, the Advance Registration, Housing and Course Enrollment brochure for the meeting will be mailed at the end of June, about two weeks later than in the past.

Collaborations Address International Cooperation, Continuing Education

RSNA has been busy in 2010 strengthening its ties with radiology societies and their members worldwide. At the European Congress of Radiology, Asian Oceanian Congress of Radiology, International Congress of Radiology, National Russian Radiology Congress and Japan Radiological Society annual meeting, RSNA officers and staff discussed how radiologists around the globe can benefit from shared knowledge. Read more about RSNA's global focus in the My Turn column by 2010 RSNA President Hedvig Hricak, M.D., Ph.D., Dr. h.c., on Page 2.

RSNA recently became a member of the International Society of Radiology (ISR) and will be represented on the ISR executive committee by Richard L. Baron, M.D., RSNA Board Liaison for Education.

Increasing its cooperative relationships domestically as well as internationally, RSNA has endorsed the Council of Medical Specialty Societies code of conduct governing physician interactions with corporations. The Society also has endorsed the American Medical Association Health Insurer Code of Conduct Principles.

Publications Celebrate Gains, Look to Future

RSNA recently learned that its peer-reviewed science journal, *Radiology*, had a 2009 impact factor of 6.341, an almost 6 percent increase over 2008. Read more about the 2009 Journal Citation Reports® at *RSNA.org/Radiology*.

Contributing to the success of *Radiology* and RSNA's peer-reviewed education journal, *RadioGraphics*, are ever-developing online versions offering many features—



George S. Bisset III, M.D.
Chairman, 2010 RSNA Board of Directors

including podcasts, image datasets, and videos—above and beyond the print counterparts. Starting with the 2011 membership renewal process later this year, RSNA members can choose whether to access *Radiology* and *RadioGraphics* online only or continue to receive them in print, with no difference in dues.

Making their debut last month in the online version of *RadioGraphics* were full imaging datasets for select articles. See Page 19 for more information about this new feature.

William W. Olmsted, M.D., the editor of *RadioGraphics*, retires from this role in 2011. The search committee appointed to find his replacement is continuing to interview candidates, with a goal of naming the new editor early in 2011.

In other communications news, content from *RadiologyInfo.org* will now be included in Healthy Advice Network television programming that is broadcast in physician waiting rooms across the U.S. The Healthy Advice Network reaches 53,000 physicians and impacts 429 million patient and caregiver visits. *RadiologyInfo.org* content will help to educate patients about medical imaging procedures, including what they are used for and how they are performed.

In response to increasing media coverage of radiology, RSNA has created position statements to assist members in responding to inquiries they may receive regarding medical radiation errors, appropriate utilization of medical imaging, radiation dose and screening mammography. See *RSNA.org* on Page 27 to learn how to access these statements via myRSNA.

George S. Bisset III, M.D.
Chairman, 2010 RSNA BOARD OF DIRECTORS

American Institute for Radiologic Pathology Course to Replace Familiar AFIP

According to the U.S. Department of Defense, the Armed Forces Institute of Pathology (AFIP) will be discontinued later this year, coinciding with the closure of the Walter Reed Army Medical Center. In response, the American College of Radiology (ACR) plans to launch the American Institute for Radiologic Pathology (AIRP) in January 2011.

The AFIP course has been held since 1947 and more than 90 percent of all radiology residents have attended the AFIP at some point during their residency, according to ACR. The AFIP program is a unique combination of abnormal human biology, clinical pathology and medical imaging, and is considered by the radiology community to play a vital role in preparing radiologists-in-training for advanced medical practice.

The new four-week AIRP Course will be offered five times per year at an education center in Silver Spring, Md., just a couple miles from the current AFIP site. Residency program directors are assured that the new course will fulfill the requirements that over 310 programs come to rely upon to sanction attendance at the AFIP course.



Numbers in the News

43.9

Percentage of office-based physicians using any type of electronic health record (EHR) system in 2009, up from 29.2 percent in 2006, according to the Centers for Disease Control and Prevention (CDC). Just 6.3 percent of physicians were using a fully functional EHR system in 2009, up from 3.1 percent in 2006, the CDC reported.

80

Percentage of radiologists surveyed at a large tertiary care hospital who reported experiencing some sort of work-related musculoskeletal problem in the last 12 months, according to a study presented at the 2010 American Roentgen Ray Society annual meeting. (Read "The Big Hurt: Ergonomics Linked to Radiologists' Pain," Page 5.)

6,000

CT units in China, which works out to 4.5 units for each million people. MR units total 1,500, or 0.9 units for each million people. (Read "Chinese Radiology Rides Economic Development Wave," Page 7.)

4,000,000

CT scans, out of the 62 million total performed each year in the U.S., that are performed on children. (See, "First National Children's Dose Registry to Ensure Necessary, Safe Imaging," Page 9.)



(top, l-r) Haffty, Borgstede, Morin (bottom, l-r) Donnelly, Kachnic, Mahoney

ABR Names Officers, Trustees

The American Board of Radiology (ABR) has elected officers and named new members to its board of trustees. Trustees participate in leadership and decision making to carry out the ABR mission and set standards for the board certification process in radiology and the 10-year cycles necessary to maintain certification.

New officers are: **Bruce G. Haffty, M.D.**, president; **James P. Borgstede, M.D.**, president-elect; **Richard L. Morin, Ph.D.**, secretary-treasurer.

New trustees are: **Lane F. Donnelly, M.D.**, **Lisa A. Kachnic, M.D.**, and **Mary C. Mahoney, M.D.**

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The Big Hurt: Ergonomics Linked to Radiologists' Pain

An increasing reliance on technology and poor workplace ergonomics are adding up to a painful workday for many radiologists, according to researchers at Massachusetts General Hospital (MGH) in Boston.

RESEARCHERS FOUND that job-related musculoskeletal symptoms are common in radiologists working in digital departments, according to lead author Anand M. Prabhakar, M.D., a radiologist at MGH who was inspired to study the issue after hearing colleagues complaining of aches and pains due to cramped and outdated work spaces.

"I was quite surprised at the high prevalence of complaints," Dr. Prabhakar said. "There is a mismatch between our research and the attention given to this problem."

In a questionnaire completed by 28 radiologists from various divisions of one radiology department at a large tertiary care hospital, 80 percent reported experiencing some sort of musculoskeletal problem in the last 12 months, according to the study presented at the 2010 American Roentgen Ray Society annual meeting.

The most frequent complaints were neck pain (42.8 percent), back pain (39.2 percent), shoulder pain (32.1 percent), headaches (32.1 percent) and wrist pain (7.2 percent), according to the survey. In addition, 96 percent of respondents reported using two to three computer monitors at their workstations and 75 percent had consulted a physician for work-related aches and pains.

"It has nothing to do with which specialty you're practicing," Dr. Prabhakar said. "It affects people from a variety of backgrounds."

Although the sample size is relatively small, Dr. Prabhakar said he intended the study to be a stepping stone to subsequent investigations of workplace ergonomics in radiology.

"This project opens the doors to further research," he said. "There are some findings here that suggest this is a prevalent problem."

Technology Supersedes Workplace Well-being

Partly to blame is the technology that has made radiology more efficient. The rise of digital, soft-copy PACS has created higher workloads, tighter deadlines and more time spent in front of computer screens, said Mukesh G. Harisinghani, M.D., director of abdominal MR imaging at MGH, who has authored research on ergonomics issues in radiology.

"In the era prior to PACS, only certain areas of imaging were at risk, owing to the nature of the daily work," Dr. Harisinghani said. "In fact, the regular diagnostic radiologist had a routine that might be considered light exercise, as the alternat-

ing view boxes required getting up to hang the films and then sit down. However, with advent of PACS, electronic medical records and voice recognition, this has changed."

The problem was compounded when many PACS were simply added on to existing radiology information systems rather than being fully integrated into the work environment, Dr. Prabhakar said. Although it follows that better ergonomics would benefit both doctors and patients, hospitals have been slow to meet the changing demands of the radiology workplace.

"This is essentially not a problem that people take seriously," he said. "There is definitely a dearth of information in this area."

Hospitals often pay too much attention to the time and cost savings of PACS and not enough to the potential deleterious effects on the radiologists using these systems, Dr. Harisinghani added.

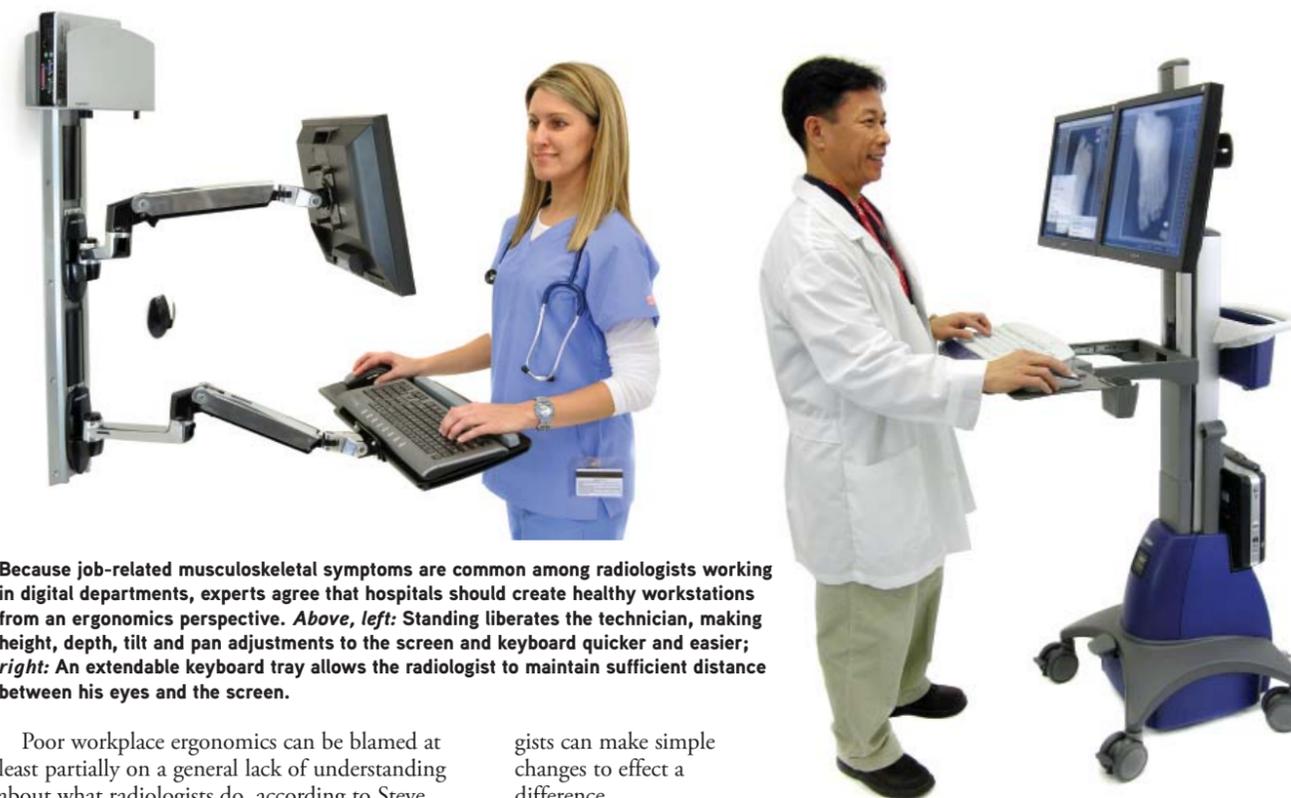
"Over time, technology like voice recognition has added to the impact burden, again with no thought to integrating various solutions and making them ergonomically friendlier to end users," he said. "The cascade effect has now resulted in an ergonomic disaster for radiologists."

“There is a mismatch between our research and the attention given to this problem.”

Anand M. Prabhakar, M.D.



(clockwise) Harisinghani, Prabhakar, Reinecke



Because job-related musculoskeletal symptoms are common among radiologists working in digital departments, experts agree that hospitals should create healthy workstations from an ergonomics perspective. **Above, left:** Standing liberates the technician, making height, depth, tilt and pan adjustments to the screen and keyboard quicker and easier; **right:** An extendable keyboard tray allows the radiologist to maintain sufficient distance between his eyes and the screen.

Poor workplace ergonomics can be blamed at least partially on a general lack of understanding about what radiologists do, according to Steve Reinecke, senior director of healthcare and education industries at Ergotron, Inc., a Saint Paul, Minnesota-based manufacturer of ergonomic workstations.

"To be honest, many people are just not aware of what goes on behind the scenes in a radiology department," Reinecke said. "As a result, radiologists don't get the attention they deserve when it comes to ergonomics and health and safety."

That lack of attention could have serious consequences for the well-being of radiologists and their patients.

"A radiologist works under extreme pressure," Reinecke said. "Given those circumstances and the serious repercussions of fatigue-related errors, the level of risk for musculoskeletal disorders registers on the extreme end of the scale."

Simple Changes Make a Difference

Although the challenging economic climate may make hospitals wary of upgrading their radiology departments with pricey new workstations and equipment, Reinecke said even a \$200 height-adjustable monitor arm could vastly improve work conditions.

More than 60 percent of the radiologists in Dr. Prabhakar's study requested a relatively low-cost switch to wireless mice and keyboards for their workstations. "I think there are simple things people can do," he said.

From positioning equipment that accommodates workflow to standing up and taking numerous breaks during the day, Reinecke agreed that radiolo-

gists can make simple changes to effect a difference.

"Don't wait for an injury or discomfort to occur," he suggested. "Radiologists need to understand what a healthy workstation is and to have an ergonomic assessment."

For his part, Dr. Prabhakar said he hopes his small study helps spotlight the issue to the wider healthcare community.

"I think this problem needs to be taken more seriously, because we can't forecast the long-term repercussions," he said. "We can do something to improve the situation, but we need more research, information and education."

SpeakUp

Are workplace ergonomics affecting your health? Vote in this month's *RSNA News* reader poll at rsnanews.org.

SEE THE NEWEST RADIOLOGY WORKSTATIONS AT RSNA 2010

The Technical Exhibition at the RSNA annual meeting always features the very latest in ergonomically optimized workstations. More than 60 companies showcased a variety of models at RSNA 2009. For more information on the RSNA 2010 Technical Exhibition, see Page 24.



NOVEMBER 28 - DECEMBER 3 • MCCORMICK PLACE, CHICAGO

EDITOR'S NOTE: *This is the first in a two-part series highlighting countries in the RSNA 2010 "Presents" series. This month's feature takes a look at the current radiology trends, successes and challenges in China. Next month, RSNA News will explore the state of radiology in the countries of Latin America.*

Chinese Radiology Rides Economic Development Wave

DURING THE "China Presents" session at RSNA 2010, Chinese radiologists will give annual meeting attendees a glimpse of the specialty at work in their country, where an increasing number of industry-academic partnerships—fueled by a growing economy and backed by a strong tradition of organized radiology—are rapidly translating advances from the laboratory into clinical practice.

"We expect China Presents to be one of the highlights of the annual meeting and are delighted to give our attendees a chance to learn more about Chinese radiology," said 2010 RSNA President Hedvig Hricak, M.D., Ph.D., Dr. h.c. "China's unprecedented economic development has spurred many social and healthcare changes and radiology is no exception. Combining traditional Chinese medicine and the latest developments in biomedical sciences and technology, biomedical research in China is leading to new discoveries and proofs of ancient principles."

Scientific presentations scheduled for the China Presents session will address the latest applications of MR, including functional MR imaging of the prostate, MR cellular imaging in cell transplantation, peripheral nerve imaging using 3D high-resolution MR, and MR imaging to evaluate the efficacy of acupuncture treatment. Among other topics to be presented are advances in the field of neuro-intervention, such as Wingspan stenting of severe intracranial stenosis (see sidebar for date/times and full list of presentations).

In addition to the China Presents session, other research from China will be presented as part of regular scientific sessions. Presentations from China at RSNA 2009 totaled more than 100 and showed a country in sync with the latest trends in the specialty. Among cutting-edge studies were those that looked at tracing transplanted bone marrow stem cells in vivo with MR imaging and the correlation between CT density decrease and alterations of CT perfusion parameters by deconvolution and nondeconvolution methods in acute ischemic stroke. Also coming from China were studies on informatics—for example, on using the electronic image record to communicate and apply large-volume image data in enterprise PACS.

Equipment Modern but Limited in World's Fastest-growing Economy

A United Nations report released in early 2010 indicated that China, the world's fastest-growing major economy, posted an 11.9-percent increase in gross domestic product in the first quarter of 2010, up from 10.7 percent in the fourth quarter of 2009. While some experts forecast growth to slow slightly by the end of 2010, the boom has already attracted new industry hungry for academic partnerships in which radiology is eager to participate.

At 3.7 million square miles, China is about the same size as the U.S. (including Alaska and Hawaii). China's population, however, is roughly four times larger (1.3 billion versus 309 million). While many Chinese medical institutions—primarily urban ones—are well equipped with modern equipment, rural areas are not as up-to-date. Radiologists rely on approximately 6,000 CT units in the country, which equates to 4.5 units for each million people, while a total of 1,500 MR units translates to 0.9 units for each million people. Of those MR units, more than half are low-field (< 0.5 T) and just over a quarter are high-field (> 1.5 T).

Organized Radiology Drives Progress

The country's history of organized radiology dates to 1937, when the Chinese Society of Radiology (CSR) was founded in Shanghai. The CSR eventually became a branch within the Chinese Medical Association while preserving its individual traditions. Since 1988, CSR subcommittees have focused on individual subspecialties including abdominal radiology, musculoskeletal radiology, neuroradiology, cardiothoracic radiology, pediatric radiology, interventional radiology, MR imaging and breast imaging. A new CSR "youth committee" encourages young Chinese radiologists to participate in the development of radiology in the country.

China has a strong history of education and leadership. One of the country's most prominent and legendary leaders is Guozhen Li, M.D., also known as Professor Madame Li. Almost 50 years ago Dr. Li received her training at the University of Chicago, then headed by the renowned Paul C. Hodges, M.D., Ph.D. Upon returning to China, Dr. Li became the head of the Department of Radiology at the University of Beijing. She understood that Chinese radiology would advance only by promoting research, and together with her colleagues ensured that China received modern equipment (the coun-

CHINA

Quick Facts

Area:
3.7 million square miles

Population:
1.3 billion

Largest city:
Shanghai (17 million)

Capital:
Beijing (13.2 million)

RSNA CONNECTIONS

RSNA members*: 110
RSNA annual meeting attendance:** 2,624

Honorary Members:
Jian-Ping Dai, M.D. (2008); Guozhen Li, M.D. (1998); Professor En-Hui Wu (1988)

* RSNA Membership numbers are as of December 2009.

** RSNA Annual Meeting Attendance numbers 2005-2009 total. Includes Republic of China, Hong Kong and Taiwan.



Jian-Ping Dai, M.D., principal advisor for radiology to the Chinese Ministry of Health and 2008 RSNA Honorary Member.

try's first CT machine was installed in 1979). But Dr. Li also understood that progress is about people, and saw that various sources funded international training for many of today's Chinese leaders.

"Dr. Li's is a story of a remarkable leader who understood Chinese culture and global development and who through her devotion and tireless energy has helped bring worldwide attention to Chinese radiology," Dr. Hricak said.

Workforce Disparities, Globalization are Challenges

As the radiology specialty in China continues to take advantage of new partnership opportunities, it also will look to overcome obstacles such as physician shortages—and an uneven distribution of existing physicians throughout the country—as well as great disparities among medical institutions and changes in the country's ever urbanizing and aging population.

Critical to advancing Chinese radiology is global outreach, of which the China Presents session is just one part. The country hosted the International Congress of Radiology earlier this year, and the specialty took a special place on the world stage when renowned neuroradiologist Jian-Ping Dai, M.D., served as vice-minister of the Games Services Department for the Beijing Organizing Committee of the 2008 Olympic Games. Dr. Dai serves as the principal advisor for radiology to the Chinese Ministry of Health and is a regular attendee of RSNA annual meetings.

"Thirty years ago, the Chinese people resolutely embarked on the historic journey of reform and an opening up to the international community," Dr. Dai said upon receiving the RSNA Honorary Membership in 2008. "This new policy afforded me the opportunity to travel abroad and start my 'personal learning in the global community' and to work with international colleagues towards universal standards of quality care for our patients."

"CHINA PRESENTS"

Monday, November 29, 10:30 a.m.–12:00 p.m.

- MR Imaging of Prostate Cancer with Multiple Functional Techniques
- Peripheral Nerve Imaging from Head to Toe: Role of 3D High Resolution Diffusion-weighted MR Imaging
- Outcome after Wingspan Stenting of Severe Intracranial Stenosis at a High Volume Center
- Acupuncture Research by MR Imaging
- Cirrhosis-related Liver Nodules and MR Imaging Strategy
- Radiology Study of SARS in China
- MR Cellular Imaging in Cell Transplantation

Chinese Breast Cancer Researcher Receives First R&E International Education Grant

The RSNA Research & Education Foundation awarded its first international education grant this year, to Jie Li, M.D., of the Beijing Cancer Hospital & Beijing Institute for Cancer Research at the Peking University School of Oncology. With her project, "Developing an Educational Program on Breast Imaging for the Chinese Radiology Society with International Cooperation," Dr. Li will work with faculty at the Memorial Sloan-Kettering Cancer Center in New York to implement the Breast Imaging Reporting and Data System (BI-RADS®) in medical practice, create a quality assurance system, establish a clinical fellowship training program and ultimately develop a clinical training center for breast imaging in China.

"Knowledge of breast imaging has grown dramatically over the past decade, and the field is changing rapidly," Dr. Li wrote in her grant application.

"However, breast imaging in China has not developed in step with the field. Limited educational resources, a lack of specialty training in breast imaging and language barriers have opened up a large gap between Chinese radiology and the international breast imaging community with regard to knowledge and information, interpreting skill and clinical research."

Dr. Li envisions a nationwide CME program with invited U.S. experts and an educational website. "It is expected that the program will strengthen the clinical skills of Chinese radiologists in breast cancer detection and diagnosis, help to build up quality assurance systems for breast imaging in China, stimulate research and international communication, and ultimately improve clinical practice and research in breast cancer care in China," she wrote.



RSNA 2010

PERSONALIZED MEDICINE:
In Pursuit of Excellence

NOVEMBER 28 - DECEMBER 3 • MCCORMICK PLACE, CHICAGO

First National Children's Dose Registry to Ensure Necessary, Safe Imaging

Increasing concern over the rising number of CT scans and the potential impact of cumulative radiation dose has inspired pediatric radiologists to create a national CT dose registry for that segment of the population most sensitive to radiation exposure: children.

"CURRENTLY, there are few national databases in radiology, let alone in pediatric radiology," said Marilyn J. Goske, M.D., who, along with her co-investigators, is developing the Quality Improvement Registry for CT Scans in Children, funded through a 2009-2011 RSNA Research & Education (R&E) Foundation Scholar Grant. This project is supported by the Derek Harwood-Nash grant endowment and Harvey and Jean Picker. "This prototype national registry, coupled with the educational interventions being developed, will create awareness within pediatric radiology as to the power of population-based data banks and research."

The need to develop such a registry for children stems from one essential question, according to Dr. Goske, Silverman Chair for Radiology Education at Cincinnati Children's Hospital Medical Center and past-president of the Society for Pediatric Radiology (SPR). "How do we lower the radiation dosage and still make the diagnosis? The challenge for pediatric radiology is determining the optimal quality of CT scans for children."

That challenge is also central to Dr. Goske's work as chair and founder of the Alliance for Radiation Safety in Pediatric Imaging, which in 2008 launched Image Gently, a national campaign aimed at raising awareness of the opportunities to lower radiation dose in the imaging of children. While the Image Gently campaign is separate from the national CT dose registry project, the campaign's central messages—reduce the amount of radiation used, scan only when necessary, scan only the indicated region and scan once—are at the core of this project, Dr. Goske said.

ON THE COVER

A child is prepared for a CT scan in this image from RadiologyInfo.org, the public information website sponsored by RSNA and the American College of Radiology, that offers images and information on pediatric CT scans.



Marilyn J. Goske, M.D.
Cincinnati Children's Hospital Medical Center



Richard L. Morin, Ph.D.
Mayo Clinic

Asthma Registry is the Inspiration

The idea for creating a national pediatric CT dose registry came to Dr. Goske during a presentation on a regional asthma improvement initiative led by her colleague Keith Mandel, M.D., vice president of medical affairs for the Physician-Hospital Organization at Cincinnati Children's Hospital Medical Center. Among the key interventions driving significant improvement in population-based outcomes is an innovative, Web-based registry that was recently recognized as "best practice" by the Agency for Healthcare Research and Quality. Drs. Mandel, Goske and Laura Coombs, Ph.D., past director of data registries at the American College of Radiology (ACR), are working to incorporate findings from the asthma initiative and other large-scale improvement projects into the design of the national CT dose registry.

Using a quality improvement model similar to the one used for the asthma database, Dr. Goske assembled a team

of national pediatric radiology experts to evaluate a consortium of six hospitals collecting pilot data on CT scanning practices for children to establish benchmarks in best practice for administering

Determining the optimal quality of CT scans for children is the goal of Marilyn J. Goske, M.D., and colleagues in developing the Quality Improvement Registry for CT Scans in Children, an RSNA Research & Education (R&E) funded project. (right) A radiology technologist prepares a pediatric patient for a CT scan.



CT scans. Of the approximately 62 million CT scans performed each year in the U.S., at least 4 million are performed on children.

"We plan a retrospective review of abdominal CT scans performed on pediatric patients at the six hospitals in our consortium to establish baseline values of typical techniques and estimates of radiation dose associated with a common CT study and an abdominal/pelvis CT with IV contrast," Dr. Goske said.

Using data gathered over three months in late 2009, researchers are comparing a new pediatric dose index developed by medical physicist Keith Strauss, M.Sc., and Tom Toth, D.Sc., former chief CT physicist at GE Healthcare. They will compare this new patient dose index with the standard adult dose indices, Dr. Goske explained. "From select de-identified images representing the average estimated radiation dose from each institution for five age groups, we will also evaluate image quality subjectively and objectively," she said. "This will establish interobserver preference for diagnostic quality and acceptability compared to a reference sample of CT image with a known amount of image noise."

These data will serve as a baseline for a future prospective study in which the coalition will use quality improvement methods to optimize and standardize CT practice across the six sites, she said.

"Ultimately, the goal is to identify an 'optimal' CT technique and target radiation dose indices for common CT procedures and share this via a national registry using quality improvement methodology," Dr. Goske said.

Optimal Use of Radiation is the Goal of Registries

Although not focused on children, a similar initiative is being developed through ACR's National Radiology Data Registry (NRDR), which launched its Dose Index Registry Pilot Project in 2004. CT became the pilot's focus in 2008, according to Richard L. Morin, Ph.D., chair of ACR's Dose Index Registry, who said he expects the pilot phase to finish this year with the rollout of the national dose registry tentatively planned for 2011.

Dr. Goske and colleagues are creating a prototype

Continued on Page 12

“How do we lower the radiation dosage and still make the diagnosis? The challenge for pediatric radiology is determining the optimal quality of CT scans for children.”

Marilyn J. Goske, M.D.

CT REGISTRY PROJECT IS TEAM EFFORT

Other investigators on the Quality Improvement Registry for CT Scans in Children project are:

- David Larson, M.D., quality metrics lead, Cincinnati Children's Hospital Medical Center
- Keith White, M.D., informatics lead, Primary Children's Hospital in Salt Lake City, Utah
- Keith Strauss, M.S., medical physicist, Boston Children's Hospital

Participating Hospitals and Site Primary Investigators:

- Michael Callahan, M.D., Boston Children's Hospital
- Kassa Darge, M.D., Ph.D., Children's Hospital of Philadelphia
- Daniel Podberesky, M.D., Cincinnati Children's Hospital Medical Center
- Donald P. Frush, M.D., Duke University Medical Center, Durham, N.C.
- Sjik Westra, M.D., Massachusetts General Hospital in Boston
- Jeffrey Prince, M.D., Primary Children's Hospital in Salt Lake City, Utah

NAME: Marilyn J. Goske, M.D.

GRANT RECEIVED: 2009-2011 RSNA Derek Harwood-Nash/Harvey and Jean Picker Education Scholar Grant, \$150,000

STUDY: "Developing a Best Practice National Registry for CT Scans in Children"

CAREER IMPACT: The RSNA Derek-Harwood Nash Education Scholar Grant was key in moving the registry forward, Dr. Goske said. Having the financial support and the RSNA name associated with the project enabled Dr. Goske and colleagues to enlist the American College of Radiology's National Radiology Data Registry to support this pilot initiative.

CLINICAL IMPLICATIONS: The goal of the project is to identify an "optimal" CT technique and target radiation dose indices for common CT procedures and share this via a best practices national registry for CT scans in children using quality improvement methodology. The registry is intended to "broaden the optimal use of radiation throughout the U.S.," Dr. Goske said.



GRANTS IN ACTION

For more information on all Foundation grant programs, go to RSNA.org/Foundation or contact Scott Walter, M.S., Assistant Director, Grant Administration at 1-630-571-7816 or swalter@rsna.org.

Guidelines Pivotal in Timely Communication of Critical Results

When a Virginia radiologist reading a woman's sonogram discovered a deep vein thrombosis in the patient's leg, he took what most healthcare professionals would consider to be the appropriate next step: He attempted to call the woman's referring physician to relay the potentially life-threatening discovery.

UNABLE TO REACH the physician or the physician's nurse or receptionist by phone, the radiologist instructed his secretary to fax the report to his office. The referring physician, however, was not in the office and the fax was not seen until the following day, when his nurse read the report and called the patient to schedule an appointment for two days after that. That appointment was never kept. The day after he spoke with the nurse, the patient suffered an acute pulmonary embolism and died.

When the patient's family filed a malpractice lawsuit against both doctors, the physician settled out of court but the case against the radiologist proceeded to a jury trial. Although the jury found the radiologist not liable, the Virginia Supreme Court reversed the verdict and remanded the case back to a lower court where it was settled prior to a second trial.

The scenario demonstrates the urgent need for healthcare facilities to develop a standardized process for ensuring that critical results are not only communicated, but received, documented, monitored and measured for every patient, according to Leonard Berlin, M.D., a professor of radiology at Rush Medical College in Chicago and vice-chair of the Department of Radiology at NorthShore University HealthSystem, Skokie Hospital. Dr. Berlin is a presenter for the RSNA 2010 course, "Quality Improvement: Controversies and Opportunities for Communicating Results." (See sidebar.)

"Because radiologists are expected to foresee that reports occasionally get lost in transmission, they have a duty, independent of any action or lack thereof on the part of the referring physician, to obtain reasonable assurance that a radiologic report of a significant and unexpected abnormality that can adversely affect the life of the patient—whether it be within a matter of hours or months—is successfully communicated to the referring physician," Dr. Berlin said.

Communication Isn't One-Size-Fits All

Although national standards do not exist for communicating critical test results, the Joint Commission requires facilities to develop and implement a policy and demonstrate a mechanism for documenting and monitoring the delivery of results. Regulatory pressures, malpractice concerns and patient safety issues have heightened the need for hospitals to craft a set of communication guidelines, said

Ramin Khorasani, M.D., M.P.H., also a presenter at the RSNA 2010 course.

"In terms of policy, there is no one-size-fits-all protocol for communication of critical results," said Dr. Khorasani, vice-chair of the Department of Radiology at Brigham & Women's Hospital, associate professor of radiology at Harvard Medical School and part of a team who developed standards for communicating critical findings for the hospital in 2006. "Each facility should begin by defining critical findings and establishing urgency levels for various categories of critical results to help determine the optimum communication mechanism."

That was the process adopted by Scott Gazelle, M.D., M.P.H., Ph.D., and colleagues in crafting standards for communicating critical findings for hospitals within the Partners Healthcare System (PHS), including Massachusetts General Hospital and Brigham and Women's Hospital, in Boston. As director of Partners Radiology for PHS, Dr. Gazelle met with representatives from radiology departments at all PHS hospitals, including Dr. Khorasani, to develop the standards following American College of Radiology Practice Guidelines for Communication of Diagnostic Test Results, which were updated in 2005, and the Joint Commission's



Developing a standardized process for ensuring that critical exam results are not only communicated, but received, documented, monitored and measured, is necessary in today's healthcare environment, according to Leonard Berlin, M.D., (top). Such a process was developed by Scott Gazelle, M.D., M.P.H., Ph.D., (bottom) and colleagues for hospitals within the Partners Healthcare System in 2009.

“Each facility should begin by defining what is critical and then establishing urgency levels around findings that are immediately life threatening.”

Ramin Khorasani, M.D., M.P.H.

National Patient Safety Goals. After defining three levels of urgency, the team created a subset of criteria for communicating, documenting and monitoring results.

In Level 1, for example, results are defined as any new or unexpected findings that suggest conditions that are life-threatening or would require an immediate change in patient management. Six findings are always defined as Level 1: tension pneumothorax, evidence of ischemic bowel, intracerebral hemorrhage, leaking of ruptured aortic aneurysm, significantly misplaced tubes or catheters and unstable spine fracture.

Under Level 1, communication is required to be immediate and interruptive to the ordering physician or other caregiver and this communication must be clearly documented in the final radiology report.

The standards, in place since January 2009, provide a necessary structure for physicians, said Dr. Gazelle, a professor of radiology at MGH and Harvard Medical School and a professor in the Department of Health Policy and Management at the Harvard School of Public Health.

"This isn't foolproof, of course, but it gives physicians something to hang their hats on so they know what is expected," said Dr. Gazelle, who is moderating the RSNA 2010 course. "In a system where hundreds radiologists could each be making a judgment call on communications issues, these guidelines are extremely important."

Compliance Increases Over Time

Although such standards are relatively new for many hospitals, Dr. Khorasani was able to gauge the effectiveness of the communication process in place at Brigham in the RSNA 2009 presentation, "The Impact of a 3-Year Quality Improvement Initiative of Departmental Performance on Communication of Critical Test Results."

Instead of different levels, Dr. Khorasani and colleagues created a color-coding system for categorizing the urgency of communicating test results. The policy also outlines the escalation process to assure

	RED ALERT	ORANGE ALERT	YELLOW ALERT
Definition	Findings that are potentially immediately life-threatening. Examples: Tension pneumothorax and intracerebral hemorrhage	Findings that could result in mortality or significant morbidity if not appropriately treated urgently. Example: Intra-abdominal abscess	Findings that could result in mortality or significant morbidity if not appropriately treated, but are not immediately life-threatening or urgent. Example: Lung nodule
Timelines for Communication	< 60 MINUTES	< 3 HOURS	< 3 DAYS
Mode of Communication	Immediate, interruptive communication; • Face to Face • Telephone Contact	• Face to Face • Telephone Contact	• Face to Face; • Telephone Contact; Other method that allows communicator to verify that notification was successful.*

timely communication, the mode of communication (depending on the urgency level), and the documentation, monitoring and improvement and evaluation processes.

Using a Web-based dashboard to extract data, researchers analyzed 12,193 critical test results to measure adherence to the policy. Although the new process didn't immediately take hold, the one-month compliance rate of 28.6 percent quickly rose to 68 percent by the third month and reached 90 percent by the seventeenth month. Compliance has since leveled off at 90-93 percent, Dr. Khorasani said.

The next step is to implement an automated critical alerts management system, according to Dr. Khorasani. "IT tools help integrate the communication methods into the workflow of the radiologist and referring physician and document, audit and measure performance as part of a quality improvement program."

Because some facilities have yet to begin to craft communication guidelines, Dr. Gazelle said he plans to outline the process used to establish MGH standards during the RSNA symposium. "We feel that our process could become a model for other networks—including giant ones—to create their own guidelines," Dr. Gazelle said.

In 2006, Brigham and Women's Hospital adopted standards for communicating critical test results that utilized a color-coded system for categorizing the urgency of those results. One of the policy's developers, Ramin Khorasani, M.D., M.P.H., reported on the project's effectiveness in the RSNA 2009 presentation, "The Impact of a 3-Year Quality Improvement Initiative of Departmental Performance on Communication of Critical Test Results."

COMMUNICATION FOCUS OF RSNA 2010 COURSE

The course, "Quality Improvement: Controversies and Opportunities for Communicating Results," is part of the RSNA 2010 Quality Improvement Symposium to be held on Tuesday, Nov. 30, at RSNA 2010.

- Moderator Scott Gazelle, M.D., M.P.H., Ph.D.: "What Should We Be Doing? How Can This be Achieved?"
- Ramin Khorasani, M.D., M.P.H.: "What Lies Ahead?: Leveraging IT to Improve Results Communication"
- Leonard Berlin, M.D.: "What Are the Real Implications of Failure to Communicate Abnormal Results?"

To register for this and other RSNA 2010 courses, go to RSNA.org/register.

First National Children's Dose Registry to Ensure Necessary, Safe Imaging

Continued from Page 10

CT dose registry through ACR. "Once the pilot phase is completed and evaluated, we hope to expand this into a nationwide CT registry," Dr. Goske said.

Both registries are designed to "broaden the optimal use of radiation throughout the U.S.," said Dr. Morin, the Brooks-Hollern Professor in the Department of Radiology at the Mayo Clinic in Jacksonville, Fla.

"Ideally, Dr. Goske would like all facilities who perform CT scans in children to use the registry as an ongoing tool to evaluate optimal use of radiation," Dr. Morin said. "It provides a barometer for one facility to measure dose index relative to that of another facility."

The movement to raise awareness about radiation dose continues to expand. RSNA and ACR recently joined forces with the American Association of Physicists in

Medicine and American Society of Radiologic Technologists to create the Image Wisely campaign to raise awareness about limiting radiation exposure in adults.

Although separate, the projects share one bottom line, according to Dr. Goske. "Essentially, we are all committed to ensuring that patients receive safe, necessary imaging care," she said. "That is the catalyst for these measures."

Take in Chicago's Heights, Sights at RSNA 2010

BE SURE TO CHECK OUT OUR INSIDER'S GUIDE TO CHICAGO'S BEST DEALS ON PAGE 16.



The Willis Skydeck

From the spectacular view offered by the tallest building in the Western Hemisphere to the stunning array of art, theater and music, Chicago offers a myriad of events and attractions sure to please everyone attending RSNA 2010.

Museums

Art Institute of Chicago

The Art Institute's world-renowned permanent collection includes a noteworthy exhibition of surrealist paintings and Impressionist art now showcased in the stunning Modern Wing, which **RSNA TOUR** opened in 2009. The 264,000 square foot addition elevates the Art Institute of Chicago to the position of second-largest U.S. art museum and allows the museum to exhibit a larger portion of its vast collection.

The special winter exhibitions are *Ancient Chinese Bronzes from the Shouyang Studio: The Katherine and George Fan Collection* and *Looking after Louis Sullivan: Photographs, Drawings, and Fragments*.

- 111 S. Michigan Ave.
Tickets: 1-877-307-4242
www.artic.edu

Field Museum

While visiting The Field Museum, say hello to Sue, the largest, most complete and best preserved Tyrannosaurus rex fossil ever

discovered. Favorite Field exhibits include *Evolving Planet*, the Crown Family Play Lab for children and the Ernst & Young 3-D Theater.

- 1400 S. Lake Shore Dr.
1-312-922-9410
www.fieldmuseum.org

Smith Museum of Stained Glass Windows

Located on the east end of Navy Pier, this free museum houses the nation's largest permanent collection of Tiffany stained glass windows. The museum has more than 150 stained glass works by artists including John LaFarge, Louis Sullivan, Louis Comfort Tiffany, Frank Lloyd Wright, Franz Mayer and F.X. Zettler. Admission is free and public tours are offered at no extra charge most Thursdays at 2 p.m.

- 600 E. Grand Ave.
1-312-595-7437
www.navy Pier.com

Museum of Contemporary Art

The MCA's permanent collection represents trends in art after 1945, with a special

RSNA Tours & Events

RSNA is sponsoring a series of tours and events during RSNA 2010. The RSNA Tours & Events brochure is available at RSNA2010.RSNA.org.

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

Save Money, Avoid Ticket Lines with CityPass

A CityPass ticket booklet containing admission tickets to the Shedd Aquarium, Adler Planetarium, Field Museum and Museum of Science and Industry, as well as the Hancock Observatory or Skydeck Chicago, is available for \$69 and can save you up to 49 percent on all admissions and allows you to skip ticket lines at each venue. Once you start using the CityPass, you have nine days to visit all of the included attractions. Visit www.citypass.com/city/chicago



emphasis on Surrealism (1940s and 1950s), Minimalism (1960s), conceptual art and photography (1960s to the present), installation art and art by local artists. The collection includes paintings, sculpture, photography, video, film and installations.

This winter, MCA will feature two special exhibits—*Susan Philipsz: We Shall Be All* and *Luc Tuymans*.

- 220 E. Chicago Ave.
1-312-280-2660
www.mcachicago.org

Shedd Aquarium

The aquarium is home to aquatic life from around the world, with a special emphasis on crowd favorites such as sharks, Beluga whales, dolphins, seahorses, otters and seals. Penguin petting is a must. The Shedd, a principal part of the Museum Campus, is a tasteful blend of contemporary and 1930s architecture situated on the shore of Lake Michigan.

- 1200 S. Lake Shore Dr.
1-312-939-2438
www.sheddaquarium.org

Adler Planetarium

Planetarium visitors now can view the newly restored Gemini 12 spacecraft in the *Shoot for the Moon* exhibit, where cutting-edge technology helps tell the story of America's part in the space race. Planetarium shows play continuously throughout the day in two theaters. The Adler Planetarium is located on a scenic section of the Museum Campus jutting into Lake Michigan.

- 1300 S. Lake Shore Dr.
1-312-922-7827
www.adlerplanetarium.org

Peggy Notebaert Nature Museum

Perched on the edge of a Lincoln Park lagoon, this Chicago museum welcomes children of all ages to explore nature in unusual and innovative ways. Notebaert visitors love the majestic beauty of the Butterfly Haven.

- 2430 N. Cannon Dr.
1-773-755-5100
www.chias.org

Museum of Science and Industry

The Museum of Science and Industry is one of Chicago's most popular tourist destinations and ranks among the **RSNA TOUR** seven most visited museums in the U.S. It is the only remaining building from the 1893 World's Columbian Exposition.

Permanent exhibits include the U-505 World War II submarine, the Coal Mine, Colleen Moore's Fairy Castle and the Henry Crown Space Center. In *Smart Home: Green + Wired*, eco-friendly living is demonstrated in a three-story, sustainable "green" home



that has been erected on the museum's property. Annual seasonal exhibits include the *Christmas Around the World* and *Holidays of Light*.

- 57th St. and Lake Shore Dr.
1-773-684-1414
www.msichicago.org

Chicago History Museum

The Chicago Historical Society has created an urban museum that presents the fascinating multicultural heritage of the region in creative, up-to-date exhibits. The museum's collection includes over 22 million artifacts and documents. Check the website for neighborhood tours, lectures, performances and events.

- 1601 N. Clark St.
1-312-642-4600
www.chicagohs.org

Lincoln Park Conservatory

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

- 2391 N. Stockton Dr.
1-312-742-7736
www.chicagoparkdistrict.com/index.cfm

Garfield Park Conservatory

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

- 300 N. Central Park Ave.
1-312-746-5100
www.garfield-conservatory.org

Millennium Park Ice Rink

After strolling through stunning Millennium Park, take a spin on the ice rink. Skating is free and skate rental is \$9.

- East side of Michigan Avenue
Between Washington and Madison streets
1-312-742-1168
www.millenniumpark.org

Theater

Aurelia's Oratorio

Performance art in the spirit of French cirque nouveau.

- Chicago Shakespeare Theater
800 E. Grand Ave.
1-312-595-5600
www.chicagoshakes.com

Billy Elliot

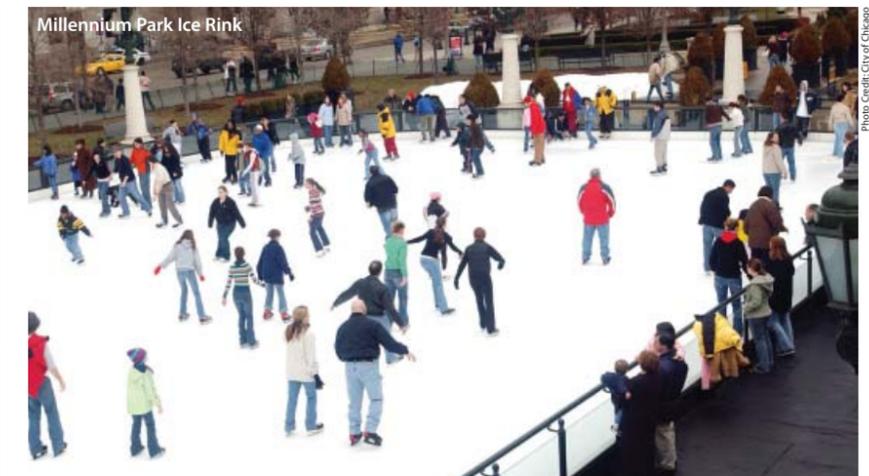
Elton John's musical about a boy from an English mining town with passion and flair for ballet. **RSNA TOUR**

- Ford Center for the Performing Arts
Oriental Theatre
24 W. Randolph St.
1-312-902-1400
www.ticketmaster.com

Global Rhythms VI

The Chicago Human Rhythm Project brings their dynamic vitality to the stage.

- Harris Theater
205 E. Randolph Dr.
1-312-334-7777
www.harristheaterchicago.org





Late Nite Catechism

This witty performance examining the Baby Boomer parochial school experience is a longtime favorite among those taught by nuns and also serves as a wry introduction to Catholicism.

- Royal George Theatre
1641 N. Halsted St.
1-312-902-1400
www.ticketmaster.com

Peter Pan

Lookingglass Theatre Company's Peter Pan will really fly in this new adaptation. This highly imaginative and physically adept company is well loved and respected by the Chicago arts community.

- Lookingglass Theatre Company
Water Tower Water Works
821 N. Michigan Ave
1-312-337-0665
www.lookingglasstheatre.org

The Second City

Chicago's favorite comedy venue, the venerable Second City has spawned stars such as John Belushi, Bill Murray and Mike Myers. The Main Stage features well-established actors and skits and a smaller ETC stage features up-and-coming Chicago comics.

- Main Stage and ETC stage
1616 N. Wells St.
1-312-337-3992
www.secondcity.com

Tommy Gun's Garage

Set in a Prohibition-era speakeasy, this 1920s musical comedy revue includes dinner.

- Tommy Gun's Garage
2114 S. Wabash St.
1-312-225-0273
www.tommygunsbar.com

Traces

Crowd thrilling acrobatic stunts are used to explore the real-life stories of the seven performers.

- Broadway Theater Playhouse
Water Tower Place
175 E. Chestnut St.
1-312-902-1400
www.ticketmaster.com

Wicked: The Untold Story of the Witches of Oz

A smash hit, Wicked examines the friendship between Glinda the Good Witch and the Wicked Witch of the West.

- Cadillac Palace Theatre
151 W. Randolph St.
1-312-902-1400
www.ticketmaster.com

Family Performances

A Christmas Carol

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

- Goodman Theatre
170 N. Dearborn St.
1-312-443-3800
www.goodman-theatre.org

Rewired

by Blue Man Group

Performance art and comedy meet music. Certainly not conventional theater, the performance is furiously paced and loud. Blue Man has a well-earned position as one of the most popular performances in the city.

- Briar Street Theatre
3133 N. Halsted
1-773-348-4000
www.blueman.com
www.ticketmaster.com

Symphony and Opera

Lyric Opera of Chicago

The world renowned Lyric Opera of Chicago performs in one of North America's most beautiful opera houses, the **RSNA TOUR** Civic Opera House, which opened in 1929. Tickets go on sale in August. Productions include:

A Masked Ball

November 30

Politics and infidelity meet head on as the plot to assassinate the Swedish king unfolds. By Giuseppe Verdi; Conductor: Asher Fisch with Mark Delavan, Frank Lopardo and Sondra Radvanovsky

- 20 N. Wacker Dr.
1-312-332-2244 x5600
www.lyricopera.org

Chicago Symphony Orchestra

November 28

Ensemble: Mazowsze

A memorable song and dance **RSNA TOUR** performance by the famous Mazowsze ensemble from Poland

December 2, 3 & 4

Conductor: Pierre Boulez

Program: Schoenberg: *Transfigured Night*; Janáček: *Glagolitic Mass*

- 220 S. Michigan Ave.
1-312-294-3000
www.cso.org

Family Activities

American Girl Place

Shoppers at American Girl Place may choose among the beautiful dolls. Call to make a reservation for lunch, tea or dinner.

- Water Tower Place
835 N. Michigan Ave.
1-877-247-5223
www.americangirl.com

John Hancock Observatory

Ride the fastest elevator in North America to the 94th floor observatory for a spectacular view of Illinois, Indiana, Michigan and Wisconsin. The exceptionally brave can venture out on the open-air skywalk.

- 875 N. Michigan Avenue
1-888-875-VIEW

Chicago Children's Museum

This museum is committed to creating a community where play and learning connect. More than 12 interactive exhibits and new programs offer hours of creative play. Hands-on exhibits are creatively focused on science, literacy, humanities and the arts.

- 700 E. Grand Ave. (on Navy Pier)
1-312-464-7732
www.chchildrensmuseum.org

Navy Pier IMAX Theatre

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

- 700 E. Grand Ave.
1-312-595-5MAX
www.imax.com/chicago

Lincoln Park Zoo

The Lincoln Park Zoo is the oldest zoological garden in the country, as well as one of the most modern. Casting a festive glow on the zoo grounds, the ZooLights Festival is a popular nighttime activity. This event is open Friday through Sunday evenings.

- 2200 N. Cannon Dr.
1-312-742-2000
www.lpzoo.com

Willis Tower Skydeck

Thrill-seekers are invited to experience the Skydeck and glass-enclosed Skydeck Ledges with glass floors and stunning view of the city. The Willis Tower, formerly the Sears Tower, is the tallest building in the Western Hemisphere.

- 233 S. Wacker Dr.
Enter Skydeck on Jackson Boulevard
312-875-9447

The Insider's Guide to Chicago's Best Deals

Take advantage of the many great deals and free activities available at many of the city's most popular destinations. Here is a rundown of the best free attractions in town along with their "free" days and times.

- Chicago History Museum (Monday)
- Museum of Contemporary Art, 220 E. Chicago (Tuesday)
- Charnley-Persky House Museum, 1365 N. Astor St. (Wednesday)
- Clarke House Museum, 1827 S. Indiana Ave. (Wednesday)
- Glessner House Museum, 1800 S. Prairie Ave. (Wednesday)
- Art Institute of Chicago, 11 S. Michigan Ave. (Thursday evenings, 5-8 p.m.)
- Chicago Children's Museum at Navy Pier, 700 E. Grand Ave. (Thursday, 5-8 p.m. and first Sunday of each month)
- Notebaert Nature Museum, 2430 N. Cannon Dr. (Thursday)
- Shedd Aquarium, 1200 S. Lake Shore Dr. (Nov. 22, 23, 29, 30)

Always free:

- Chicago ArchiCenter, 224 S. Michigan Ave.
- Chicago Cultural Center, 78 E. Washington St.
- City Gallery at the Historic Water Tower, 806 N. Michigan Ave.
- Intuit: the Center for Intuitive and Outsider Art, 756 N. Milwaukee Ave.
- Lincoln Park Conservatory, 2391 N. Stockton Dr.
- Lincoln Park Zoo, 2200 N. Cannon Dr.
- Millennium Park Welcome Center, 201 E. Randolph St.
- Museum of Contemporary Photography, 600 S. Michigan Ave.
- National Museum of Mexican Art, 1852 W. 19th St.
- Navy Pier, 600 E. Grand Ave.

Macy's Holiday Windows

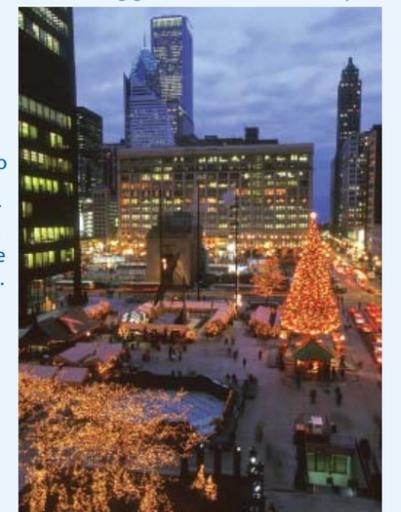
A winter favorite for many is taking the family to view the animated window displays installed for the holidays at the Macy's store at 111 N. State Street.

McDonald's Thanksgiving Parade

Santa Claus, Ronald McDonald and many other characters and personalities will march down State Street on Thanksgiving Day for the annual parade from 8:30-11 a.m. Watch gigantic inflatables in the sky, wave at floats and move with marching bands.

Christkindlmarket Chicago and the Santa House

Christkindlmarket Chicago is the largest and most renowned German winter holiday market in the U.S., attracting visitors from the city and around the world. Santa is available for wish lists and pictures every day at the Santa House. Christkindlmarket is located on Daley Plaza between Washington and Dearborn Streets.



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Radiological Associates of Sacramento Medical Group, Inc., Sacramento, Calif.

BRONZE LEVEL (\$10,000)



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VIPs Invest in R&D for the Specialty

Sign Up by September 30 to Receive Full Benefits at RSNA 2010

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The Visionaries in Practice (VIP) Program recognizes the link between today's research and tomorrow's practice, as well as the importance of strong residency and fellowship training programs to build tomorrow's workforce. By investing in the R&E Foundation, VIP groups fund radiologic research to sustain the advancements that built their practices.

In appreciation for funding support, the R&E Foundation provides special recognition and benefits to VIP practices and practice members. RSNA 2010 benefits include:

- Access to the R&E Donor Lounge
- Practice name and logo recognition in the R&E Pavilion
- Discounts at the RSNA Education Store
- Priority taxi boarding

For more information to share with your practice, see the VIP video at RSNA.org/Foundation/VIPgiving.cfm or contact Robert Leigh at 1-630-590-7760 or rleigh@rsna.org.

2011-2012 R&E GRANT APPLICATION PROCESS OPENS SOON

People interested in obtaining RSNA Research & Education (R&E) Foundation grants for 2011-2012 can begin submitting their applications starting in October. For more information, go to RSNA.org/Foundation or contact Scott Walter, M.S., Assistant Director, Grant Administration at 1-630-571-7816 or swalter@rsna.org

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With an RSNA Research & Education Foundation grant, medical student Jean-Claude M. Rwigema, B.S., will gain exposure to research by evaluating strategies for radiation damage mitigation using small molecule mitochondrial targeted drugs.



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Journal Highlights

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

Imaging Evaluation of Penetrating Neck Injuries

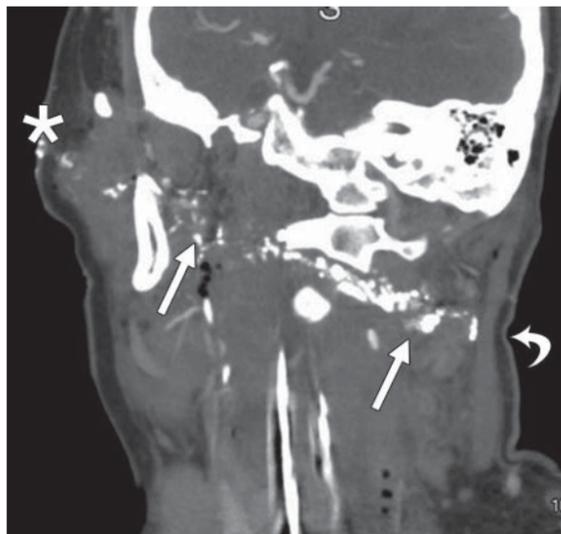
SELECTIVE surgical management based on results of physical examination and CT angiography (CTA) is the current approach to penetrating neck injuries, which are a significant source of morbidity and mortality.

Because the CTA results often help determine the need for surgery or further evaluation with endoscopy, esophagography and conventional angiography, radiologists should be prepared to provide management recommendations on the basis of CTA findings.

In a review in the July-August issue of *RadioGraphics* (RSNA.org/RadioGraphics), Scott D. Steenburg, M.D., and colleagues from the University of Maryland Medical Center and R. Adams Cowley Shock Trauma Center in Baltimore discuss the evolution of the diagnosis and management of acute penetrating neck injuries. Specifically, the authors:

- Review historical and current management
- Discuss the role of imaging in evaluation
- Present the imaging appearances of various injuries with a special focus on multidetector CTA

"An appreciation of the value, roles, and limitations of multidetector CTA and other imaging modalities can position the radiologist as a vital participant in the care of patients with penetrating trauma to the neck," the authors write.



Evaluation of wound trajectory in an 18-year-old woman with a right-sided zone III gunshot wound. Coronal oblique multiplanar reformatted image from CT angiography shows innumerable small metallic ballistic and bone fragments (straight arrows) oriented along a single path, a finding indicative of the trajectory of the projectile. Although the entrance wound (*) is at the level of zone III, the trajectory extends inferiorly to zone II (curved arrow). The patient was found to have a fracture of C2 and short-segment occlusion of the left vertebral artery at the level of C1-C2. This image is included in the *RadioGraphics*' interactive datasets described below.

(*RadioGraphics* 2010;30:869-886) ©RSNA, 2010. All rights reserved. Printed with permission.

RadioGraphics

This article is available for online-only CME and offers online-only supplemental material.

Online Datasets Featured in *RadioGraphics* Articles

In the July issue of *RadioGraphics* (RSNA.org/RadioGraphics), online readers can access a new feature, interactive datasets, in two articles: "Imaging Evaluation of Penetrating Neck Injuries" (see above) and "Acute Traumatic Aortic Injuries: Posttherapy Multidetector CT Findings."

Online readers who click the Interactive Image Dataset links can explore the article's original image data, including multiplanar reformations and even prebuilt volume-rendered models, for selected figures. Users can adjust window/level/zoom and imaging plane as well as perform other manipulations

done in the reading room. The *RadioGraphics*' image above is featured in one of the datasets.

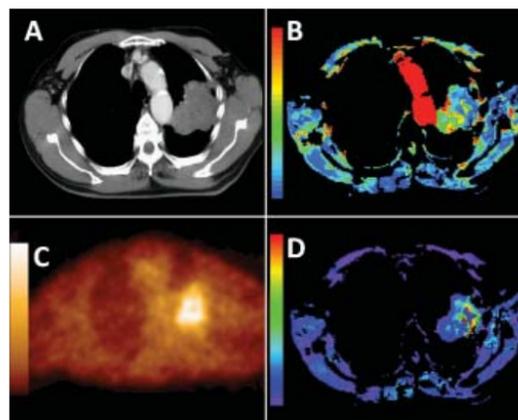
RadioGraphics welcomes your comments. Send them to rginteractive@rsna.org.

Multiparametric Imaging of Tumor Response to Therapy

BY COMBINING information from a number of imaging techniques, multiparametric imaging can build a unique, multifaceted phenotypic view of tumors, allowing an improved understanding of biologic processes and responses to therapeutic interventions.

In a review in the August issue of *Radiology* (RSNA.org/Radiology), Anwar R. Padhani, M.B.B.S., of the Paul Strickland Scanner Centre, Mount Vernon Hospital in Middlesex, England, and Kenneth A. Miles, M.B.B.S., M.Sc., M.D.,

Continued on Page 21



Multiparametric images of non-small cell lung cancer. A: Conventional CT scan B: Perfusion CT scan C: 18F-FDG PET scan D: Parametric image displaying glucose metabolism/perfusion ratio. FDG uptake is highest in the tumor region where perfusion is lower.

(*Radiology* 2010; 256:2:348-364) ©RSNA, 2010. All rights reserved. Printed with permission.

(Image courtesy of M. R. Griffiths.)

Radiology in Public Focus

A news release promoting grants awarded by the R&E Foundation in 2010 was distributed to the media. Press releases have been sent to the medical news media for the following articles appearing in the latest issue of *Radiology*.

Localized Development of Knee Osteoarthritis Can Be Predicted from MR Imaging Findings a Decade Earlier

Localized knee osteoarthritis (OA) developed from risk factors identified from MR imaging findings performed a decade ago in patients with subacute knee symptoms and did not depend on the surgical treatment of those findings, according to researchers.

Using a mean follow-up period of 10 years, Kasper Huétink, M.D., and colleagues from Leiden University Medical Center in the Netherlands, conducted a follow-up study of 326 patients from a previously reported series of 855 patients regarding the effect of MR imaging-guided treatment for subacute knee problems. Researchers compared initial findings and treatment with the follow-up radiograph and 3.0-T MR image findings. Odds ratios, with corresponding 95 percent confidence intervals, were used to identify the effects between variables.

Treatment of meniscal tears, particularly partial meniscectomy, does not decrease the risk of developing the features of OA demonstrated on radiographs or 3.0-T MR images, researchers found.

"In summary, irrespective of treatment, the risk factors seen on knee MR images resulted in localized development of OA 10 years later," the authors write. "The different patterns of developing OA are determined according to the initial ACL and meniscal injuries and can be explained by ensuing changes in biomechanical loading."



A coronal fat-suppressed fast spin-echo MR image in 46-year-old man shows an ill-defined bone marrow edema-like pattern in lateral tibial condyle and cartilage loss in the lateral tibia. The patient had a torn lateral meniscus and was treated with a partial meniscectomy.

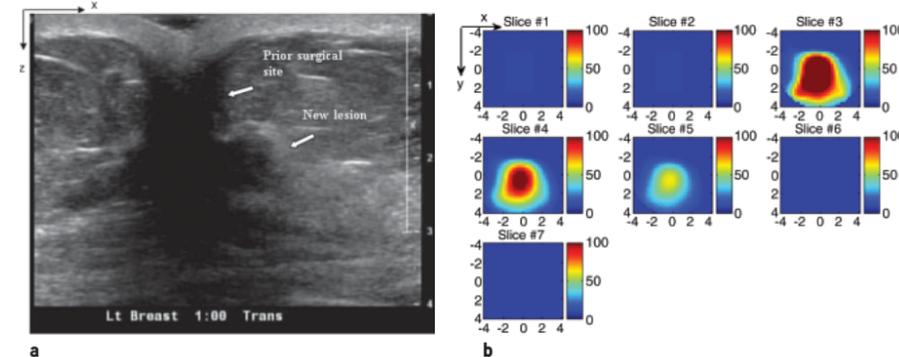
(*Radiology* 2010; 256:2:536-546) ©RSNA, 2010. All rights reserved. Printed with permission.

Early-Stage Invasive Breast Cancers: Potential Role of Optical Tomography with US Localization in Assisting Diagnosis

US-GUIDED optical tomography holds promise as an adjunct to diagnostic mammography and ultrasound for distinguishing early-stage invasive breast cancers from benign lesions, researchers have found.

In the study of 178 women ages 21-89 who underwent US-guided biopsy with a handheld probe consisting of a co-registered US transducer and a near-infrared (NIR) imager, Quing Zhu, Ph.D., of the University of Connecticut in Fairfield, and colleagues assessed tumor angiogenesis based on calculated total hemoglobin concentration (tHb) correlated with core biopsy results. The maximum and average tHb levels were significantly higher in the malignant groups, the proliferative lesion group and the other benign group than those in the control group, results showed.

"Intrinsic tHb contrast holds promise as an adjunct to diagnostic mammography and US for distinguishing early-stage invasive breast cancers from benign lesions," the authors write. "The tHb contrast may also help to distinguish some high-risk proliferative lesions from nonproliferative lesions."



(a) A US image of a suspicious lesion (bottom arrow) located at 1-o'clock position in the left breast in 76-year-old woman. The patient had a prior cancer (top arrow) removed 10 years previously, and the new lesion grew at the prior surgical site. The exact size could not be measured because of scar tissue. (b) tHb map showed a much higher concentration at the top of the tumor (section 3) than that at the bottom (section 4). The first section was 0.5 cm from the skin surface. Core biopsy sampled from both scar and new lesion areas revealed a high-grade infiltrating lobular carcinoma. The patient was treated with neoadjuvant chemotherapy.

(*Radiology* 2010;256:2:367-378) ©RSNA, 2010. All rights reserved. Printed with permission.

Continued on next page

Radiology in Public Focus

Continued from previous page

Pulmonary Embolism at CT Angiography: Implications for Appropriateness, Cost, and Radiation Exposure in 2,003 Patients

ALTHOUGH CT angiography (CTA) is currently the modality of choice to diagnose pulmonary embolism (PE), researchers have found that CTA may be unnecessary in patients with no thromboembolic risk factors.

In a retrospective study, Mark D. Mamlouk, M.D., of the Department of Radiology at the University of California in Irvine, and colleagues reviewed the electronic medical records of 2,003 patients who underwent CTA for possible PE between July 2004 and February 2006 for thromboembolic risk factors. Results showed that CTA was negative for PE in 1,806 (90.16 percent) of 2,003 patients. Among the 197 patients with CTA positive for PE, 192 (97.46 percent) had one or more risk factors. When combined with negative D-dimer test results, researchers found the risk for a CTA positive for PE to be even lower.

"In the setting of no risk factors, it is extraordinarily unlikely (0.95 percent chance) to have a CT angiogram positive for PE," the authors conclude. "This selectivity and triage step should help reduce current costs and radiation exposure to patients."

Journal Highlights

Multiparametric Imaging of Tumor Response to Therapy

Continued from Page 19

of the Clinical Imaging Sciences Centre, Brighton and Sussex Medical School at the University of Sussex, England, appraise multiparametric imaging for assessing tumor biology and therapy response and discuss challenges to widespread clinical use. Specifically, the authors discuss:

- Imaging depiction of tumor biology
- Use of multifunctional imaging approaches
- Multiparametric imaging for assessing therapy response
- Challenges for implementation

Multifunctional imaging techniques have the potential for clinical use, pharmaceutical drug development and predicting therapeutic efficacy, the authors write.

"If multifunctional imaging is to take up the unique position of enhancing decision making at critical milestones in the early phases of the drug development process, then procedural rigor will be needed to establish each biomarker and/or biomarker combination for such a role," they write.

Radiology Debuts Online Polling

A new online Web feature offers *Radiology* readers the opportunity to respond to a question associated with a current journal article, with results posted on the *Radiology* homepage (RSNA.org/Radiology). Questions are chosen by *Radiology* Editor Herbert Y. Kressel, M.D.

Readers can share the poll on Facebook, Twitter and other social media sites, as well e-mail or bookmark the question.

Media Coverage of RSNA

In June 2010, media outlets carried 398 RSNA-related news stories. These stories reached an estimated 321 million people.

A story about radiation from medical imaging procedures carried on the Associated Press newswire mentioned a previously published study on reducing cardiac CT radiation exposure from coronary CT angiography (*Radiology* 2010;254:698-706) and cited the RSNA-American College of Radiology patient information website, RadiologyInfo.org, as a resource for consumer information on the topic.

June coverage included *The Wall Street Journal*, *The Boston Globe*, *Associated Press*, *The Star Ledger* (Newark), *Houston Chronicle*, *St. Paul Pioneer Press*, *Charleston Gazette*, *Commercial Appeal* (Memphis), *Arizona Daily Star*, *Pittsburgh Post-Gazette*, *WDTN-TV* (Dayton), *Yahoo! News*, *Google News*, *The Huffington Post*, *The Guardian Online* (London, U.K.), *Seattle Times Online*, *Time.com*, *FoxNews.com*, *MSNBC.com*, *Boston.com*, *MiamiHerald.com* and *DenverPost.com*.

August Outreach Activities Focus on Imaging During Pregnancy

In August, the RSNA will distribute the "60-Second Checkup" audio program to nearly 100 radio stations across the U.S. The segments will focus on imaging of pregnant women.

RadiologyInfo.org Debuts on Facebook

RadiologyInfo.org, the public information website sponsored by RSNA and the American College of Radiology, recently launched a Facebook page that offers announcements about new content, notifications about the latest radiology news and updates on other additions to the site. Go to Facebook.com/radiologyinfo.

RADIOLOGY, RADIOGRAPHICS ABSTRACTS AVAILABLE FOR KINDLE

Abstracts of articles from current *Radiology* and *Radiographics* issues are now available exclusively at the Amazon Kindle Store www.amazon.com/kindlestore.

The monthly subscription rate is \$1.99 and includes a 14-day free trial and automatic wireless delivery.

Both RSNA titles are designated as "Kindle Blogs," which offer abstracts from the journals' latest research. Separate feeds will soon become available for published ahead of print and subspecialty abstracts from both journals.

For more information, go to RSNA.org/journals.



For Your Benefit

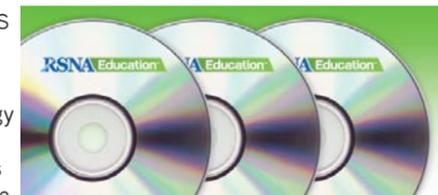
Discounts Available on Refresher Course Bundles

RSNA 2009 refresher courses CD-ROMs are now available.

Refresher courses range from discussions of cutting-edge technology and techniques to reviews of standardized imaging protocols. Examples include "Renal Artery Disease," "Spine Imaging," "Advanced Neurovascular MR Angiography," "Emerging Techniques in Musculoskeletal Imaging" and "CT Imaging—Advanced Applications."

For a limited time, RSNA is offering discount pricing on select refresher courses from past annual meetings. The three-CD Pancreas Collection (BUN01) and Thyroid Collection (BUN03) are specially discounted at 25 percent off the original bundled price. The discounted price is \$90 for members; \$130 for non-members. The offer expires October 31.

To browse refresher courses by subspecialty, go to RSNA.org/Education. To order CDs online, go to RSNA.org/orderCDs and enter the appropriate BUN number into the Product Code area. For more information, contact the RSNA Education Center at 1-800-272-2920.



Member Question of the Month

What's the best Chicago tourist attraction you've visited while in town for the RSNA annual meeting?

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

Fellowship Provides Needed Non-vascular Interventional Exposure

Temitope Bello, M.B.B.S., of Osogbo, Osun State, Nigeria, recently completed a Derek Harwood-Nash International Fellowship at the Mallinckrodt Institute of Radiology at Washington University in St. Louis.

CALLING THE EXPERIENCE "awesome," Dr. Bello said his first impression upon arriving in March was the size of the facility. "It is quite imposing," he said. "But what struck me most is the

The Value of Membership hardworking nature of the doctors and the professionalism the doctors and medical staff demonstrate on the job."

Also a big surprise, Dr. Bello said, was the high level of specialization within the radiology community, which is uncommon in hospitals in Nigeria.

"On my return back home, the area of my training that will have immediate maximal impact is non-vascular interventional procedures under CT or ultrasound guidance," he said. "This will include biopsies, percutaneous drainages, ultrasound-guided sclerotherapy and some musculoskeletal procedures, especially those for pain relief. My exposure to these procedures has been excellent."

Dr. Bello said his experience will help him develop a vascular interventional radiology section in his hospital back home and also improve his teaching and research capabilities and clinical practice.

"It has been a great opportunity for me, and I want to thank the RSNA for the opportunity."



The Derek Harwood-Nash International Fellowship is a six- to 12-week fellowship at a North American institution, for international radiologists three to 10 years beyond training. Learn more at RSNA.org/international/CIRE/dhnash.cfm.

Real Estate, Retirement Focus of RSNA 2010 Financial Seminars

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

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

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

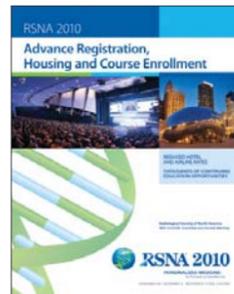
These seminars do not qualify for *AMA PRA Category 1 Credit*™. Additional fees apply and you must be registered for RSNA 2010 to enroll.

To register, go to RSNA.org/register. For more information, contact the RSNA Education Center at 1-800-381-6660 x7772 or e-mail Jennifer Comerford at jcomerford@rsna.org.

Annual Meeting Watch

Enroll Now for Courses

Course enrollment for RSNA 2010 is under way. Online enrollment occurs instantly, while faxed or mailed registration forms are processed in the order they are received. The RSNA 2010 Advance Registration, Housing and Course Enrollment brochure was mailed in late June and is also available at RSNA.org/register. Use this brochure to make the most of your RSNA 2010 experience. RSNA has organized the information in the course brochure to help you complete your enrollment in just a few steps. Find the courses you need, build your schedule and enroll quickly and easily online or via the print form.



Guarantee Your Seat!

Tickets are required for various meeting components, including refresher, multisession and financial courses, informatics workshops and RSNA tours and events. **NEW AT RSNA 2010:** Onsite course ticketing has been eliminated. All ticketed courses must be confirmed prior to November 24 to guarantee a seat. RSNA ticketed courses fill up fast, so ensure you get the courses you need by enrolling at RSNA.org/register. Registrants without tickets will be allowed entrance into a course after all ticketed registrants have been seated.

Early Sessions Offered

Some Controversy, Hot Topic and Special Interest sessions (formerly known as special focus sessions) will be offered at 7:15 a.m. Information about these sessions is available in the RSNA Meeting Program online. Tickets are not required. RSNA provides complimentary sunrise inbound shuttle services to McCormick Place Sunday through Friday. Shuttles leave beginning at 6:30 am from designated pick-up locations for each hotel.

CME UPDATE: Earn up to 92.75 AMA PRA Category 1 CME Credits at RSNA 2010

RSNA 2010 Registration

How to Register

There are four ways to register for RSNA 2010:

- 1 INTERNET**
Go to RSNA.org/register
- 2 FAX (24 hours)**
1-800-521-6017
1-847-996-5401
- 3 TELEPHONE**
(Mon.-Fri. 8:00 a.m. – 5:00 p.m. ct)
1-800-650-7018
1-847-996-5876
- 4 MAIL**
Experient/RSNA 2010
568 Atrium Drive
Vernon Hills, IL 60061 USA

Registration Fees

	BY NOV. 5	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	

Important Dates

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

City of Chicago Offers “Sweet Deals”

The City of Chicago offers RSNA 2010 attendees amazing deals on everything from restaurants and shopping to entertainment and attractions. Take advantage of Sweet Deals, Chicago, and enjoy these exclusive offers when you use any American Express® Card at participating merchants. For more information, go to www.choosechicago.com.



Chicago Attractions Headline RSNA 2010

For information about Chicago events and attractions during RSNA 2010, see the roundup article on Page 13.

Enter to Win Next Year’s Airfare While Saving This Year

RSNA attendees who book air travel through Gant Travel by October 1 will be entered into a drawing to receive a \$500 (USD) travel credit good toward their RSNA 2011 airfare on United Airlines. Benefits of using Gant Travel for RSNA 2010 include:

- Up to a 15 percent discount on available fares on United Airlines
- Fare-checker technology (checking for lower fares until your return flight home)
- Seat-checker technology (checking for best available seats per your preference)
- Emergency assistance available by phone

For more information, contact Gant Travel at 1-877-613-1192, international +1 011 630-227-3873 or RSNA@ganttravel.com.

See New Technologies at RSNA 2010

Technical Exhibition The Technical Exhibition at the RSNA annual meeting will span three exhibit halls and feature nearly 600 exhibitors representing the best in radiologic technology around the world.



Tell a Colleague: Annual Meeting Admission Free with RSNA Membership

Encourage your colleagues to become RSNA members and receive free admission, with advance registration, to RSNA 2010. Membership must be obtained by September 1. Go to RSNA.org/apply.

Receive Registration Materials Prior to the Meeting

RSNA will mail registration materials in advance of the annual meeting to all North American attendees who register by November 5. RSNA will mail materials in advance to international attendees whose registration was received by October 22.

- Registration materials include:
- **Name badge and holder**
 - **Course and tour tickets** (as requested)
 - **Attendance vouchers for CME credit** (if applicable)
 - **Free pass for the Chicago Metra Electric Line train system**
 - **Airport shuttle discount coupon**
 - **ExpoCard**—Use this electronically personalized business card at the technical exhibition to request exhibitor information
 - **Pocket Guide**—The RSNA 2010 *Pocket Guide* is an easy-to-use reference guide to everything meeting related.



Housing Deals Available

New Hotels Added, Rates Reduced

RSNA 2010 attendees can take advantage of economic incentives offered by many Chicago hotels. Of the 79 hotels participating in the RSNA block, a majority are offering reduced rates while the rest have frozen their rates from 2009. RSNA has added more rooms to the list of hotels in Downtown Chicago. As a bonus, most hotels have reduced their room rates.

International Visitors

If you must apply for a temporary non-immigrant visa to attend RSNA 2010, you are advised to apply as soon as U.S. travel is decided and no later than three to four months in advance of the travel date. The RSNA offers an official letter of invitation for RSNA 2010 attendees. For more information, go to RSNA2010.RSNA.org/attendees/international.cfm.

For more information about registering for RSNA 2010, visit RSNA2010.RSNA.org, e-mail reginfo@rsna.org, or call 1-800-381-6660 x7862.

Arrange Childcare

Children under the age of 16 will be allowed to ride on the RSNA shuttle buses; however, they will not be allowed to attend the meeting. Onsite childcare will be available for children six months to 12 years through ACCENT on Children's Arrangements, Inc. Online registration and application forms are available at RSNA2010.RSNA.org. Click childcare.

Annual Meeting Watch

RSNA Planning Meeting Draws More than 60 Exhibitors

RSNA Executive Director Mark G. Watson (*far right*) addressed the more than 60 exhibiting companies attending the RSNA Technical Exhibitors Planning Meeting held in June at RSNA Headquarters in Oak Brook, Ill., while 90 additional companies listened via Webinar. Exhibitors were given space assignments and a registration update on RSNA 2010.



Education and Funding Opportunities

Writing a Competitive Grant Proposal

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

Registrations are being accepted for the 2011 RSNA Writing a Competitive Grant Proposal program, a grant writing session for researchers in radiology, radiation oncology, nuclear medicine, and related sciences who are interested in actively pursuing federal funding.

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

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

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

Medical Meetings

September – October 2010

SEPTEMBER 8-11

Academy of Molecular Imaging (AMI), 2010 World Molecular Imaging Congress (WMIC), International Conference Center, Kyoto, Japan
• www.wmicmeeting.org

SEPTEMBER 9-11

European Society of Head and Neck Radiology (ESHNR) 23rd Annual Meeting, Hoersaalzentrum AKH Wien, Vienna, Austria
• www.eshnr2010.org

SEPTEMBER 9-12

17th European Symposium on Urogenital Radiology (ESUR), Oud Sint-Jan, Bruges, Belgium
• www.esur2010.be

SEPTEMBER 23-25

Society of Chairs of Academic Radiology Departments (SCARD), Annual Meeting, Fairmont Le Chateau Frontenac, Quebec City, Canada
• www.scardweb.org

SEPTEMBER 23-26

Australasian Society for Ultrasound in Medicine (ASUM), Gold Coast Convention Centre, Queensland, Australia
• www.asum.com.au

SEPTEMBER 26-29

Radiology Business Management Association (RBMA), Fall Educational Conference, Renaissance Austin Hotel, Austin, Texas
• www.rbma.org

SEPTEMBER 26-OCTOBER 2

International Skeletal Society (ISS), 37th Annual Meeting, Athens, Greece
• www.iss2010.org

OCTOBER 3-5

North American Society for Cardiac Imaging (NASCI), 38th Annual Meeting, The Westin Seattle Hotel
• www.nasci.org

OCTOBER 18-20

Korean Society of Radiology (KSR), 66th Annual Korean Congress of Radiology, Grand Hilton Hotel, Seoul
• www.kcr4u.org

OCTOBER 22-24

Society of Radiologists in Ultrasound (SRU), 20th Annual Meeting, the Wynn Hotel, Las Vegas
• www.sru.org

OCTOBER 22-26

Société Française de Radiologie (SFR), Les Journées Françaises de Radiologie (JFR) 2010, Palais des Congrès de Paris
• www.jfrexpo.com

Product News



PRODUCT UPGRADE

Front-end Technology Speeds Mammography Reporting System

Dolbey (www.dolbey.com) has teamed up with Mammography Reporting System, Inc. (MRS) for integration of its mammography tracking and reporting data system with the company's Fusion Expert® solution.

Fusion Expert, powered by Nuance's SpeechMagic™, offers complete front-end speech recognition and results management and is part of Dolbey's Fusion Suite™ of enterprise-wide products. Through integration with MRS, radiologists can use Fusion Expert to dictate and the recognized text automatically populates the MRS reporting segments, eliminating the need for manual entry and speeding up the reporting process.

Fusion Suite is a fully integrated, enterprise-wide set of products that include innovative software and hardware for dictation, transcription, speech recognition and computer-assisted coding.

NEW PRODUCT

Mobile Guide for iPhone Tracks Exam Information

SmartMed Apps (www.smartmedapps.com) has released RadX Mobile, a radiological mobile positioning guide for the iPhone. This intuitive application for finding diagnostic exam information is offered in an electronic format eliminating the hassle of traditional paper-based reference guides.

At the touch of the screen, RadX Mobile provides radiographers with a quick and easy way to navigate to desired exam information complete with detailed exam explanations and relevant variables, positioning and X-rays as well as a customizable technique chart and note section for every exam.

As the user defines the customizable technique fields within the individual exam pages, the information is compiled into a quick-fetch technique that allows the user to quickly review only techniques without navigating through the entire program.



NEW PRODUCT

Device Offers Precision Biopsy Capability

INRAD, Inc., (www.inrad-inc.com), announces the PreciseCore™ Biopsy Device which has no "forward throw," meaning the needle does not advance when the device is fired. Once positioned in the target area, the device can be armed and



fired with one hand. It is ideal for use in precision biopsy applications in cases where critical structures are located in close proximity to the target. PreciseCore is designed to fit comfortably in the physician's hand providing greater confidence and control.

The INRAD PreciseCore Biopsy Device is available in 14-, 18- and 20-gauge sizes with lengths of 5 cm and 10 cm. Configurations include a 10 mm notch or 20 mm notch version.

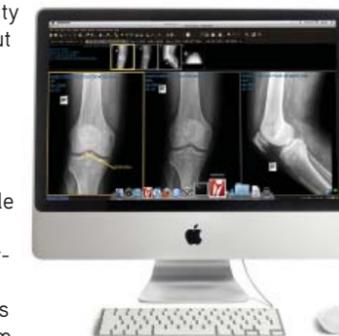
NEW PRODUCT

Web Solutions Allow Remote Viewing, Reading

Intelerad® Medical Systems (www.intelerad.com) announces two new Web-based solutions for radiologists and referring physicians that address the demand for more flexibility and Mac® support without the burden of replacing existing systems.

The add-on remote reading solution InteleFlex™ allows radiologists to read for one or multiple remote acquisition sites; offer sub-specialty coverage to different facilities, accommodate after-hours shifts or simply read from home. InteleWeb™, the referrers' Web server solution, offers state-of-the-art remote viewing for medical images and reports. InteleWeb provides secure Health Insurance Portability and Accountability Act-compliant administrative tools for managing and automating access to patient data at both the user and group-practice levels.

Both InteleFlex and InteleWeb are offered under an enterprise-wide (unlimited user) licensing model and can be installed as an extension to any existing legacy PACS to provide fast and secure external image and report access.



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

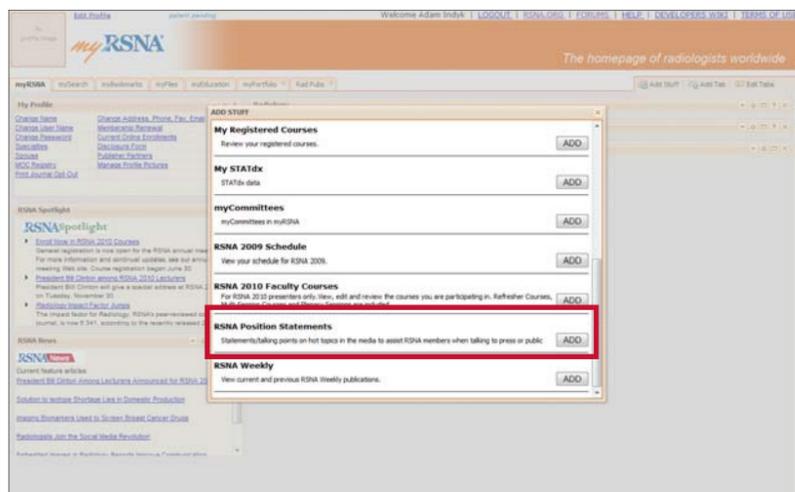
RSNA.org

Access RSNA Position Statements on myRSNA®

WITH CONTINUING media scrutiny on issues like radiation dose and mammography screening guidelines, radiology professionals need to know how to respond to the press and/or the public about these sensitive topics.

To aid that process, RSNA now offers members point-by-point position statements on four such issues—screening mammography, medical imaging errors, radiation dose, and appropriate utilization of medical imaging. The position statements were drafted by RSNA’s Board of Directors and Public Information Committee with assistance from Public Information Advisors Network members and other radiology societies.

To access RSNA’s position statements, log onto myRSNA®, click AddStuff on the top right-hand corner of the screen, scroll to RSNA Position Statements and click Add. The statements will appear on the main screen of your myRSNA home page each time you log in.



Free Site Offers Tools to Aid Radiology, Teaching, Learning

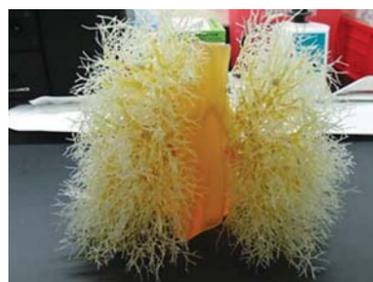
Targeting primarily residents and medical students, *Learning Radiology.com* offers access to high-quality resources and tools that support innovations in teaching and learning at all levels of science and technology. Launched in 2002, the site was conceived, designed, developed and published by William Herring, M.D., vice-chair and radiology residency program director at Albert Einstein Medical Center in Philadelphia. Dr. Herring continues to manage, maintain and produce all content.

LearningRadiology.com offers content including images, cases of the day and lectures. Video podcasts can be downloaded free through iTunes. No sign-in or registration is required for the free, commercial-free site.



COMING IN SEPTEMBER

In coming months, radiologists—especially those involved in clinical trials—can expect to use and evaluate image acquisition protocol drafts for quantitative results from scans. Next month, *RSNA News* will report on the ground-work involved in creating the protocols—including RSNA’s involvement—and how they will ultimately improve reproducibility of numerical data from scans across patients, scanners and timepoints.



20 Retrospective

Celebrating 20 Years of *RSNA News*

Headlines

Remembering radiologic topics that made the news. This month’s feature: **views of the specialty from around the world.**

- Kenya** Summer 1992 Protocol for Adventure—RSNA Visiting Professor Relates Experiences in Kenya
- Malaysia** Summer 1993 Visiting Professor Describes the State of Radiology at the University of Malaya
- Lithuania** Summer 1994 Visiting Professor Describes Radiology in Lithuania as Both Busy and Rewarding
- Jamaica** Summer 1996 Visiting Professor Tells of Experience in West Indies
- India** November 1998 RSNA Member Journeys to Rural India for 10-week Professorship
- Bolivia** July 2001 “Visiting Professors” Find Experience Rewarding
- Thailand** April 2002 RSNA Visiting Professor Calls Experience in Thailand “Valuable”
- Guatemala** June 2003 RSNA Visiting Professor Program Thrills Teachers as Well as Students
- Argentina** December 2004 RSNA Visiting Professors Share Experiences with Argentine Radiologists
- Brazil** January 2006 RSNA Visiting Professors Foster Teaching and Cultural Exchange in Brazil
- Chile** January 2007 Giving and Receiving Part of Experience for Visiting Professors in Chile
- Greenland** March 2007 Teleradiology Faces Ultimate Challenge on World’s Largest Island
- Uganda** January 2008 Uganda Visit Inspires Ongoing Contribution
- Australia** May 2008 Australian Quality Program Quickly Yields Applicable Results
- Kenya** August 2008 E-Mentoring Program Offers Real-Time Global Radiology Education
- China** February 2009 Visiting Professors Find Modern Radiology Departments in China
- Estonia** February 2010 Visiting Professors Teach Radiology in Well-wired Estonia

International Focus



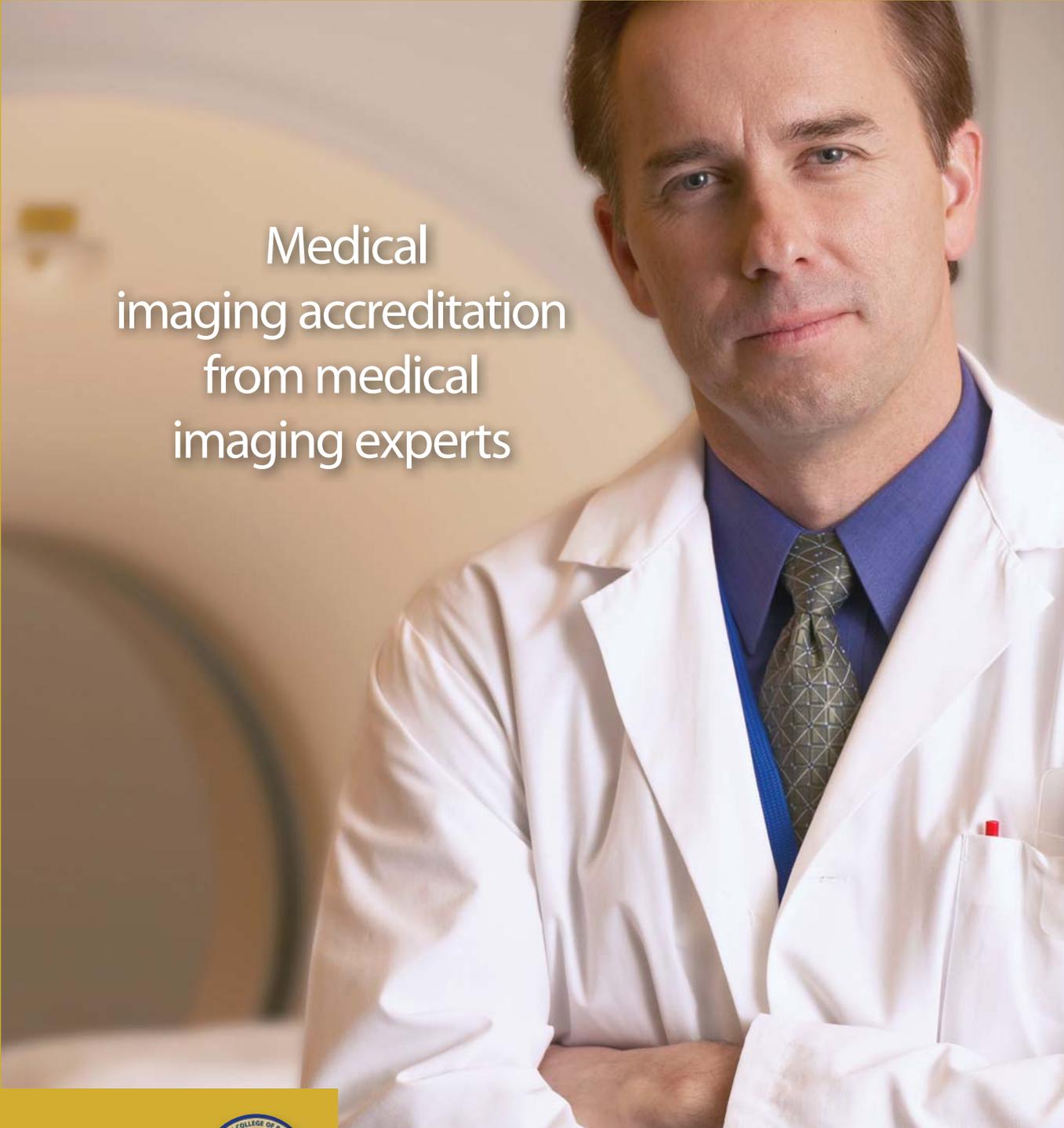
Global Views on Hybrid Imaging, Dose Reduction Reported

International radiology panels, which have met at RSNA annual meetings since 2007 to discuss hybrid imaging, e-health initiatives and radiation dose reduction, have also been the subject of *RSNA News* coverage. “We learn from each other and, working together, we can advance biomedical imaging toward global imaging standards and harmonization,” RSNA President Hedvig Hricak, M.D., Ph.D., Dr. h.c., told the group gathered at RSNA 2009.

Crossword Answer

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





Medical
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from medical
imaging experts

The ACR advantage



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- *Accredit your facility in 90 days or less after image submission*
- *No hidden fees*
- *Dedicated team of technologists on call*

Featuring a peer-reviewed, cost-effective application process – and unmatched physician imaging expertise – ACR is the only CMS-approved partner you'll need to meet the 2012 accreditation deadline.

That's peace of mind for you and your patients.

Apply for ACR accreditation today at acr.org or 800.770.0145.

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RADIOLOGY

QUALITY IS OUR IMAGE

Choose the Gold Standard. Choose ACR.