

RSNA *News*



Arenson Joins RSNA Board of Directors

Also Inside:

- New CT Protocol Yields Improved Venous Images
- Physicians Seek Relief in DRA's Second Year
- Uganda Visit Inspires Ongoing Contribution
- User Patterns Improve Radiology Search Engine
- Radiologists Worldwide Unite to Tackle Issues Facing Profession
- RSNA 2007 Meeting Moments

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RSNA News

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McCloud is 2008 RSNA President

THORACIC radiology pioneer and global education advocate Theresa C. McCloud, M.D., is RSNA president for 2008.

Dr. McCloud is associate radiologist-in-chief and director of education for the Department of Radiology at Massachusetts General Hospital in Boston and a professor of radiology at Harvard Medical School. An RSNA member since 1979, she began her term on the RSNA Board of Directors in 2001 and was Board chair in 2006. Dr. McCloud chaired the Scientific Program Committee in 1998.

A world-renowned thoracic imaging expert, Dr. McCloud has conducted more than 150 post-graduate courses and has published more than 200 scientific papers, reviews and book chapters. In 1998, she published *Thoracic Radiology: The Requisites*, a popular, comprehensive and invaluable introductory text for residents beginning in thoracic imaging and preparing for



Theresa C. McCloud, M.D.

the board examination.

Dr. McCloud's research in interstitial lung disease, CT of the thorax, lung cancer imaging and occupational lung disease has taken her around the world to conduct post-graduate teaching and lectures. Her achievements have earned her honorary memberships in the Chilean Society of Respiratory Diseases and the Royal Australian and New Zealand College of Radiologists.

Dr. McCloud currently serves on the advisory committee for the National Lung Cancer Screening Trial conducted by the National Cancer Institute. She also served seven years on the Mine Health Research Advisory Committee of the National Institute for Occupational Safety and Health. She is past-president of the Fleischner Society, Society of Thoracic Radiology and American Roentgen Ray Society.

Becker is RSNA President-Elect

GARY J. BECKER, M.D., is RSNA president-elect for 2008.

Currently a professor in vascular and interventional radiology at the University of Arizona College of Medicine, Dr. Becker also became executive director of the American Board of Radiology (ABR) earlier this month.

An RSNA member since 1979, Dr. Becker began his Society leadership with an appointment to the Refresher Course Committee, followed by service to the Public Information Advisory Board (now the Public Information Advisors Network) and Planning Committee for the Office of Research Development. He served on various research development committees and was on the RSNA Research & Education Foundation's Distinguished Roster of Grant Reviewers from 1994 to 1998. He was elected to the RSNA Board of Directors in 2001, served as the liaison for science and was Board chair in 2007.



Gary J. Becker, M.D.

He was elected to the ABR Board of Trustees in 2000 and since 2006 had served as the associate executive director for diagnostic radiology and subspecialties.

Dr. Becker began his career at the Indiana University School of Medicine in Indianapolis, where he was ultimately a professor of radiology and chief of the vascular section. Dr.

Becker served as director of interventional radiology, assistant medical director and medical director of research and outcomes at the Baptist Cardiac & Vascular Institute of Miami and was branch chief of image-guided intervention in the Cancer Imaging Program of the National Cancer Institute (NCI) before relocating to Arizona.

Dr. Becker was founding editor of the *Journal of Vascular & Interventional Radiology* and was its editor-in-chief from 1990 to 1995.

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Hedvig Hricak, M.D., Ph.D.
Chair, New York

Hricak Becomes RSNA Board Chair

HEDVIG HRICAK, M.D., PH.D., has been named chair of the RSNA Board of Directors.

Chair of the Department of Radiology at Memorial Sloan-Kettering Cancer Center in New York, Dr. Hricak is also a professor of radiology at Weill Medical College of Cornell University and an attending radiologist at Memorial Hospital in New York.

Dr. Hricak began her academic appointments in 1979 at the University of Michigan in Ann Arbor. At the University of California, San Fran-



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

cisco, from 1982 to 2000, she served as a professor of radiology, urology, radiation oncology, obstetrics, gynecology and reproductive sciences, as well as chief of the uroradiology and abdominal imaging sections.

An RSNA member since 1978 and a member of the RSNA Board of Directors since 2002, Dr. Hricak has served as liaison for publications and communications. Prior to her Board appointment, she chaired the RSNA Public Information Advisory Board (now the Public Information Advisors

Network) and also served other RSNA public information committees.

From 1993 to 1997, Dr. Hricak was a consultant to the editor of *Radiology*. She is an elected member of the Institute of Medicine of the National Academies and serves on the National Cancer Institute's Board of Scientific Advisors. She is director of a National Institutes of Health (NIH)-funded research study on the use of MR imaging and MR spectroscopy for risk assessment in patients with prostate cancer. She also directs an NIH-funded international training program in molecular imaging for oncology.

Arenson is New RSNA Board Member

AN EXPERT in radiology informatics, workforce issues and the effect of managed care on radiology is the newest member of the RSNA Board of Directors.

Ronald L. Arenson, M.D., has been an RSNA member since 1973 and is a longtime RSNA volunteer. He will serve as the liaison-designate for the annual meeting and technology, working with Burton P. Drayer, M.D., for one year until Dr. Drayer becomes the RSNA Board chairman and Dr. Arenson assumes the role of liaison.

Dr. Arenson was the RSNA sec-



Ronald L. Arenson, M.D.

ond vice-president in 2006, chaired the Electronic Communications Committee (now the Radiology Informatics Committee) and has worked on several other committees including the Publications Council, Task Force on Intellectual Property, Research Development Committee and the Public Information Advisors Network.

As chair and the Alexander R. Margulis Distinguished Professor of Radiology at the University of California, San Francisco (UCSF), a position he's held for the last 15 years, Dr. Arenson is responsible for radiology at four

institutions—the main UCSF campus, San Francisco General Hospital, the Veterans Administration Medical Center and Mt. Zion Hospital. He has also served as president of the medical staff at UCSF.

Dr. Arenson served in the U.S. Navy at the National Naval Medical Center in Bethesda, Md. He is an avid lecturer, course instructor and researcher, especially in the areas of radiology information systems and picture archiving and communication systems. He is currently president of the International Society for Strategic Studies in Radiology and the Association of University Radiologists.

SNIS is New Name for ASITN

The American Society of Interventional and Therapeutic Neuroradiology (ASITN) has changed its name to the Society of NeuroInterventional Surgery (SNIS). Formed in 1992, the organization promotes excellence in patient care and provides education and supports research in neurointerventional surgical procedures and practice. SNIS counts interventional neuroradiologists, interventional neurologists and endovascular neurosurgeons among its members.

FDA Tightens Advisory Committee Procedures

The U.S. Food and Drug Administration (FDA) has announced several steps to strengthen its advisory committee processes. Included are new procedures for advisory committee voting, disclosing information on conflicts of interest and secu-

urity and appropriate conduct for participants at meetings.



Other improvements include greater clarity to FDA's advisory committee Web site, found at www.fda.gov/oc/advisory/default.htm.

IHE® to Form Non-Profit Corporation

The Integrating the Healthcare Enterprise (IHE®) initiative has established IHE International, an association made up of many member organizations. The IHE International Board will take the necessary legal steps to form a non-profit corporation by March. IHE International was formed through adoption of the IHE Principles of Governance last October.



In its ninth year, IHE is a global initiative that brings together health information technology stakeholders to

implement standards for communicating patient information—from application to application, system to system, and setting to setting—across multiple

healthcare enterprises.

RSNA was instrumental in the development of IHE International and is represented on the board of directors by David S. Mendelson, M.D.

IHE International is accepting applications for member organizations. More information is available at www.ihe.net/governance.

\$1.28 Billion Molecular Imaging Collaboration Formed in Germany

Germany's Federal Ministry of Education and Research has joined with German industrial partners to set aside €900 million, or \$1.28 billion, to develop new technologies for the molecular imaging field.

Commercial partners Bayer-Schering Pharmaceuticals, Boehringer Ingelheim, Carl Zeiss, Karl Storz and Siemens have pledged €750 million on top of the government's €150 million to develop new contrast media, devices and software through a 6-year collaboration called Innovation Alliance Molecular Imaging.

DBEPS Now Part of NIBIB

The National Institute of Biomedical Imaging and Bioengineering (NIBIB) has integrated the Division of Bioengineering and Physical Science (DBEPS), formerly part of the NIH Office of Research Services, into the NIBIB Intramural Research Program. The integration brings 26 staff members, along with equipment and more than 14,000 square feet of laboratory space. Their research areas include new approaches for determining 3D cellular structure, measuring interactions between macromolecules, modeling drug delivery and performing nanoscale diagnostics.

NIBIB Scientific Director Richard D. Lapman, Ph.D., said incorporating DBEPS into NIBIB provides an ideal setting for the new trans-NIH initiative "Imaging Molecules to Cells."

ABR Seeks Feedback on New Exam Format

The American Board of Radiology (ABR) invites people to provide their thoughts on changes to the board exam format by visiting www.theabr.org/News_ExamOfFuture.htm. Comments received by January 31 will be considered by the ABR trustees at their meeting in February.

ABR announced late last year that it is changing its oral board certification in diagnostic radiology to a computer-based and image-rich examination

administered 15 months after residency completion. Also included will be an image-rich, computer-based radiology core exam to be given approximately 30 months after the beginning of radiology residency training.

ABR representatives said deliberations over the exam format began nearly five years ago, amid rapid changes in diagnostic radiology and increasing emphasis on lifelong learning and professional development in

ABR's maintenance of certification (MOC) program.

The change does not affect residents currently in training. Depending on when the new test is ready, residents beginning their training in the next two to four years can expect to see the changes.

MEDICAL IMAGING COMPANY NEWS

Novant Completes MedQuest Purchase

Novant Health of Winston-Salem, N.C., has acquired MedQuest, of Alpharetta, Ga., for \$45 million. Novant Health is a not-for-profit integrated healthcare system serving North and South Carolina, consisting of an 800-physician medical group and eight hospitals. MedQuest was a for-profit diagnostic imaging company that owned and operated 92 outpatient centers in 13 states, most of which are located in the immediate five-state region of North Carolina, South Carolina, Georgia, Virginia and Tennessee.

CBIZ Acquires Healthcare Business Resources

CBIZ, Inc., of Cleveland, has entered into an agreement to acquire Healthcare Business Resources (HBR), Inc., of Ponte Vedra Beach, Fla. HBR provides coding, billing and collection services for emergency medicine physician practices. HBR will be merged into the CBIZ's Medical Management Professionals division, CBIZ MMP, which provides billing, coding, collection services and full practice management services to hospital-based physician practices in radiology, emergency medicine, anesthesiology and pathology. Two-thirds of CBIZ's revenue currently comes from radiology practices and the company expects that after the acquisition, half its revenue will come from radiology and 25 percent will come from emergency department practices.

AAWR Announces Awards

THE American Association for Women Radiologists (AAWR) recently gave its Marie Sklodowska-Curie Award to **Katherine “Kay” Shaffer, M.D.**, a professor of radiology at the Medical College of Wisconsin.

Also honored at the AAWR luncheon during RSNA 2007 were:

Ellen Wolf, M.D., professor of clinical radiology, vice-chief of the Department of Radiology and chief of gastrointestinal radiology at Montefiore Medical Center/Albert Einstein College of Medicine—Alice Ettinger Distinguished Achievement Award

Dame Janet Husband, D.B.E., F.Med.Sci., F.R.C.P., F.R.C.R., of the Royal Marsden National Health Service Foundation Trust and Institute of Cancer Research—President’s Award

Ann Klopp, M.D., radiation oncology resident at M.D. Anderson Cancer Center—Eleanor Montague Distinguished Resident Award in Radiation Oncology

The AAWR Research & Education Foundation announced professional development awards for **Zhongxing Liao, M.D.**, and **Christine Glastonbury, M.B.B.S.**

The foundation presented Member-in-Training Awards for Outstanding RSNA Presentations in Diagnostic Radiology to **Asako Miyakoshi, M.D.**, and **Z. Jane Wang, M.D.**, and a research seed grant to **Yvonne Lui, M.D.**



Katherine Shaffer, M.D.



Ellen Wolf, M.D.



Dame Janet Husband, D.B.E., F.Med.Sci., F.R.C.P., F.R.C.R.



Ann Klopp, M.D.



Zhongxing Liao, M.D.



Christine Glastonbury, M.B.B.S.

RSNA Represented on Biomarkers Consortium Committees



Daniel C. Sullivan, M.D.

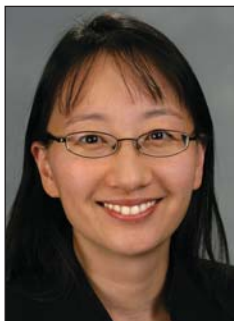
RSNA Science Advisor **Daniel C. Sullivan, M.D.**, is among those named to represent RSNA on steering committees of The Biomarkers Consortium. Dr. Sullivan will serve the Cancer Steering Committee.

Vivian S. Lee, M.D., of NYU Medical Center in New York, was named to the Metabolic Disorders Steering Committee. **A. Gregory Sorensen, M.D.**, of Massachusetts General Hospital, is a member of the Neuroscience Steering Committee.

Founded in 2006, the consortium seeks to harmonize approaches to identifying and verifying viable biomarkers, to accelerate delivery of technologies, medicines and therapies for successful prevention, early detection, diagnosis and treatment of disease.



A. Gregory Sorensen, M.D.



Vivian S. Lee, M.D.

Kalender Receives European Latsis Prize

Willi A. Kalender, Ph.D., has received the European Latsis Prize of the European Science Foundation. A professor and director of the Institute of Medical Physics at the Friedrich-Alexander-University Erlangen in Nürnberg, Germany, Dr. Kalender was recognized for his achievements in developing, testing and establishing spiral CT.

The European Latsis Prize, valued at 100,000 Swiss francs (€65,000) is financed by the Geneva-based Latsis Foundation and awarded by the ESF to an individual or group who, in the opinion of their peers, has made the greatest contribution to a particular field of European research.

Dr. Kalender was scheduled to receive the European Latsis Prize in a ceremony at the ESF Science Policy Conference in Strasbourg, France, on Nov. 29. He accepted the prize via satellite from RSNA 2007, where he was a presenter at numerous sessions.



Willi A. Kalender, Ph.D.

ABII Officers Named

The American Board of Imaging Informatics (ABII) has elected **Richard L. Morin, Ph.D.**, of the Mayo Clinic in Jacksonville, Fla., as its first chair. Charged with setting policy for the Certified Imaging Informatics Professional (CIIP) program and overseeing organization operations, the ABII Board of Trustees is made up of three appointees from the Society for Imaging Informatics in Medicine (SIIM), three appointed by the American Registry of Radiologic Technologists (ARRT) and a public member not employed

in the field of imaging informatics.

Edward I. Bluth, M.D., is vice-chair of the ABII board and **Paul Nagy, Ph.D.**, is secretary. The ABII treasurer is **Chuck Socia, R.T.(R)(CT)(QM)(ARRT), CIIP**.

ABII also recently announced that 96 candidates took the first computer-based CIIP examination last September. For more information about the CIIP program and examination, go to www.abii.org.



Richard L. Morin, Ph.D.

RSNA News

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MY TURN

A Boast for BOOST

EAGER TO provide additional and unique educational opportunities, the RSNA Board of Directors established a Task Force on Oncologic Imaging and Therapy. It is with great pride that I describe its product, called BOOST (Bolstering Oncoradiologic and Oncoradiotherapeutic Skills for Tomorrow), drawing an analogy to a supplemental “boost” of radiation. Inaugurated at RSNA 2007, BOOST was fully enrolled with standing-room-only sessions. BOOST is “What We Do,” said co-chairs Steve Leibel, M.D., and David Panicek, M.D.

BOOST, a vertical course given on 4 consecutive days, provides comprehensive educational sessions focused on a different cancer site each day. A diagnostic radiologist and a radiation oncologist team discuss anatomy and biology of one cancer, followed by an integrated science and practice session and case-based presentations. Finally, the team teaches image interpretation

and contouring of target volumes. BOOST 2007 covered head and neck, lung, gastrointestinal and prostate cancers.

BOOST was the talk of the meeting, acclaimed as an instant success. BOOST will expand to six tracks in 2008—breast, central nervous system, gynecologic, head and neck, lung and prostate cancers.

I imagined the courses would appeal to residents, fellows and young practicing radiologists. However, it quickly became obvious that this comprehensive course also provides a painless way for those facing maintenance of certification requirements to renew their skills. I also thought the course would be of greatest interest to the radiation oncologist who must know image-based anatomy for modern treatment planning. In fact, the course also proved informative to diagnostic radiologists interested in the biology, patterns



Sarah S. Donaldson, M.D.

of spread and outcomes of specific malignant diseases and those aspects of imaging important for the treating physician.

My greatest satisfaction from this inaugural program is realizing that once again, all radiologists have much to gain from working collaboratively. The unique RSNA BOOST program

provides novel learning opportunities for all; we have much to boast about BOOST.

Sarah S. Donaldson, M.D., is the RSNA Board Liaison for Publications and Communications. Dr. Donaldson is associate chair of the Department of Radiation Oncology, deputy clinic chief and residency program director for radiation oncology at Stanford University Medical Center in Stanford, Calif. Dr. Donaldson is also the Catharine and Howard Avery Professor of Radiation Oncology in the Stanford University School of Medicine.

New CT Protocol Yields Improved Venous Images

PLATO may have touted necessity as the mother of invention, but it was necessity combined with a desire to fully utilize available technology that led to a new method for imaging veins in the chest.

A team of University of Cincinnati researchers led by Christopher Meyer, M.D., and Achala Vagal, M.D., and 3D Lab Supervisor Rhonda Strunk, R.T., R(CT), have found that changing the contrast bolusing and acquisition timing in multidetector CT (MDCT) of the chest satisfies the demand of thoracic and vascular surgeons for reliable venous images and may also increase reliability in the diagnosis of venous diseases.

MDCT, a top performer in creating 3D arterial images, falters with the central veins. “The main problem is that the inflow of unopacified blood—as seen in previous protocols—resulted in significant artifacts,” said Dr. Meyer, an associate professor of radiology. “These artifacts have been reported in the literature to be mistaken for thrombi, causing significant false-positive diagnoses. The problem is not contrast breaking up, but poor mixing and laminar flow in the great veins during the first pass.”

Added Dr. Vagal, assistant professor of radiology and a radiologist at University Hospital: “It really is ‘back to the future.’ We had to re-learn to wait for the contrast. These faster multidetector scanners are great for studying the arteries, because the scanner speed lets us chase contrast flow through the arteries.

“When you’re studying the veins, patience is the key,” Dr. Vagal continued. “Early contrast enhancement is



Christopher Meyer, M.D.
University of Cincinnati



Achala Vagal, M.D.
University of Cincinnati

no good because the veins are incompletely opacified.”

That difficulty resonated with many physicians who heard Dr. Vagal present the protocol guidelines at the North American Society for Cardiovascular Imaging meeting last October, in the cleverly named “Don’t Struggle in Vein: Performing High-Quality Thoracic MDCT Venography.”

Dominik Fleischmann, M.D., an assistant professor in the Department of Radiology at Stanford University in

When you’re studying the veins, patience is the key.

Achala Vagal, M.D.

California, expressed the frustration many in the radiology audience have felt. “The difficulty is that when you want to do a CT venogram and you use a direct venography approach and inject contrast medium, if it’s undiluted, it results in a lot of artifacts,” said Dr. Fleischmann. “If you use an indirect approach, injecting contrast and waiting until the blood recirculates and comes back from the veins, the timing is difficult to predict.”

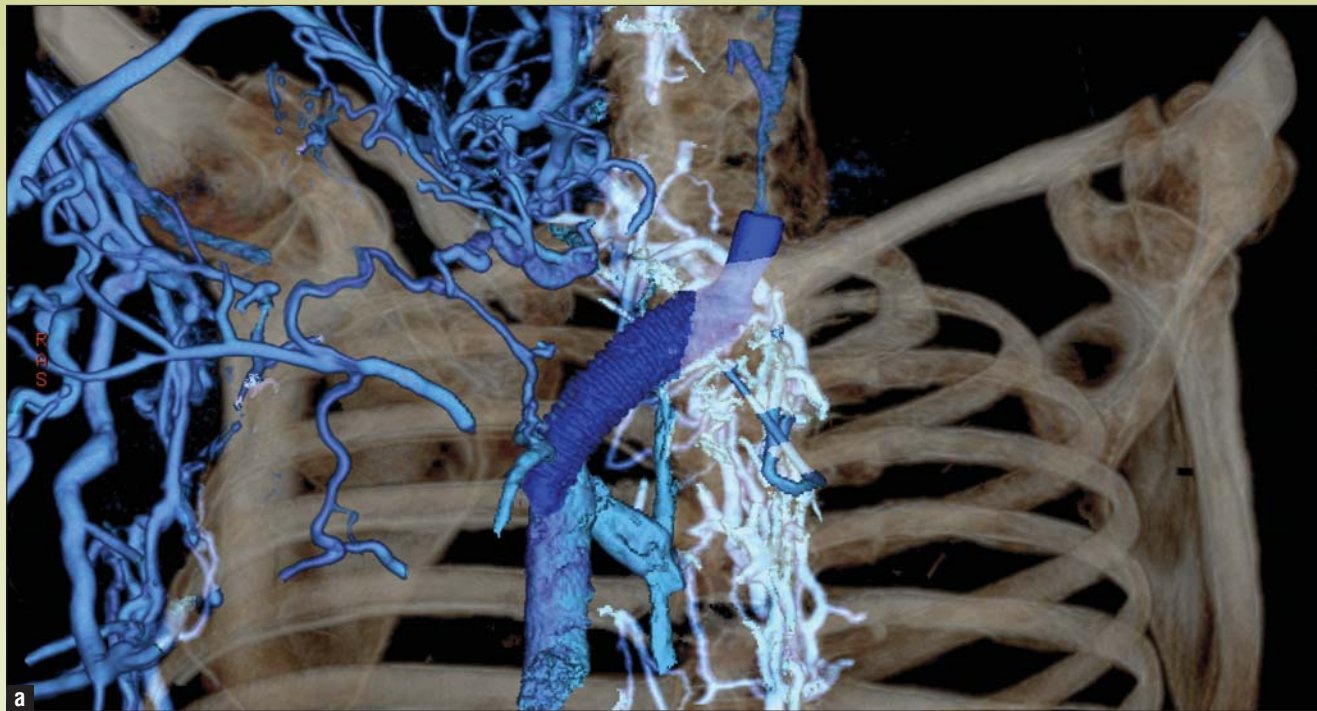
New Protocol Requires Two Contrast Injections

Those challenges are exactly where the University of Cincinnati team concentrated its effort, devising largely through trial and error a method that compensated for the extra time it takes contrast to reach the veins. The resulting protocol calls for the CT technologist to prepare two syringes of contrast agent.

The first syringe is full-strength contrast agent, 140 cc at 4 cc per second, said Dr. Meyer, followed by a 10 percent contrast solution comprising 90 cc saline and 10 cc contrast at 3 cc per second.

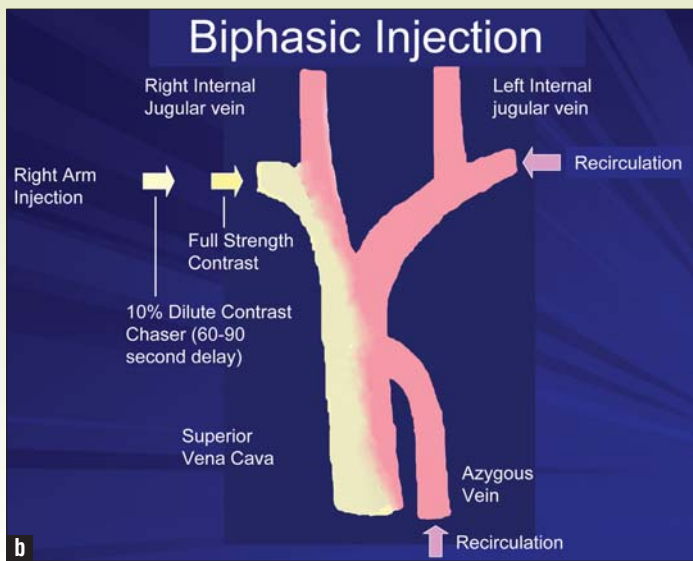
“The team images at 60 to 90 seconds,” he said. “The initial bolus recirculates to overcome the inflow artifacts from the jugular veins, azygous vein and contralateral veins. The dilute contrast chaser densely opacifies the central veins and challenges them without streak artifact.”

Dr. Meyer said he believes the success of the method is in its simplicity



a

(a) Image of a “jailed” left subclavian vein. 3D reformat with skeletal landmarks demonstrates extensive chest wall collaterals, high-grade stenosis of the left internal jugular vein and absence of flow in the left subclavian vein due to jailing by the brachiocephalic venous stent.



b

(b) Diagram representing the biphasic injection process employed by Christopher Meyer, M.D., and Achala Vagal, M.D. Photos courtesy of the University of Cincinnati.

and ease of reproduction, as well as the accuracy of images produced. “The 3D modeling really caters to vascular surgeons’ needs,” he said. “They have embraced this method because we can help them visualize the anatomy in the same way they’ll see it at a dissection or in surgery. This technique helps us move from planar images to images our colleagues can wrap their minds around.”

The team has applied its approach to patients experiencing problems with venous dialysis access, as well as

those with venous stenosis and fibrosing mediastinitis. “We’re getting good results in all of our patients, not just one or two,” said Dr. Vagal.

Dr. Fleischmann said he looks forward to a more formal investigation reporting a higher number of patient outcomes compared to controls. “In my opinion, this is a simple, very reasonable protocol, and from clinical experience I would expect that this protocol works very well on a substantial number of patients undergoing CT venography of the thorax,” said Dr.

Fleischmann. “Before recommending it as a standard technique, however, there needs to be some more data.”

Enthusiasm for the seeming ease and success of the approach led the team to spread the news before formal reporting could be done, said Dr. Vagal. “We just started getting these beautiful studies with awesome reconstructions and we thought, ‘Maybe we should present this, because it’s not out there,’” she said. □

Physicians Seek Relief in DRA's Second Year

AS THE Deficit Reduction Act (DRA) enters its second year amid ongoing challenges from physician and patient advocacy groups, anecdotal reports suggest that DRA limits on imaging's technical component have led to the near or full collapse of many smaller imaging facilities.

Other physicians and CEOs report making hard choices, curtailing expansion and delaying equipment purchase.

"The overall impact on Medicare revenue from the DRA can range from zero to 50 percent, depending on the modality and particular mix of exams," said John Buckhalter, vice-president of AGI Healthcare Group, a radiology-niche consulting firm in San Ramon, Calif. "PET, MR, CT and DEXA have been most affected, incurring reductions from 25 to 50 percent, with PET Medicare reductions in the 45 to 50 percent range. It's certainly put a damper on opening new facilities and those already marginal may now have to merge, sell or simply close their doors."

Advocacy Efforts Shift to Mitigating Effects

Having failed in strenuous efforts to keep the DRA's imaging provisions from ever taking effect, groups like the American College of Radiology (ACR) and allied organizations are now working with Congressional supporters to obtain relief from the DRA's estimated \$13 billion, 3-year reimbursement cuts—cuts that targeted the technological component of outpatient imaging and, critics say, were rushed through Congress without debate.

Already shouldering DRA's 2007 burden, physicians also face the largest Medicare payment cuts to date. The 2008 Centers for Medicare and Medicaid Services (CMS) Medicare Physi-

cian Fee Schedule (MPFS) includes an average 10.1 percent cut in its conversion factor.

Passage of bills before Congress seeking to curb the effects of the DRA on imaging is uncertain. Rep. Carolyn McCarthy, D-N.Y., introduced the Access to Medicare Imaging Act of 2007 last Feb. 28. The proposed legislation calls for a 2-year moratorium on the medical imaging reimbursement cuts included in the DRA and a Government Accountability Office impact study. The bill and its Senate counterpart remain in committee.

"Patients throughout the U.S. depend on medical imaging because it often detects critical illnesses at their most curable stage when they are less costly to treat," said Rep. McCarthy, a nurse, addressing Congress on Sept. 24 to call for more co-sponsors. "Better, less invasive care often means easier recoveries and greater patient comfort are additional reasons why drastic cuts to medical imaging do not serve the patient well."

ACR Board of Chancellors Chair Arl Van Moore Jr., M.D., said physicians must be realistic. "Unless a credible 'pay-for' can be found to provide monies to reverse the DRA, I would say the horses are out of the barn," he said. The way to curb spiraling costs is not global reimbursement cuts but programs that encourage appropriate utilization and robust facility accreditation, said Dr. Moore.

"We believe there's a fair amount



John Buckhalter
AGI Healthcare Group



Richard Jensen
Radiology Associates of
Tarrant County

you can save by doing the right test for the right reason, at the right time, with the right equipment, instead of what we have now," he said.

Revenue Boom Put Imaging in Spotlight

Already a \$100 billion industry, diagnostic imaging is the nation's fastest-growing physician service expenditure. Its annual growth is estimated at 9 percent, about triple that of other physician services. New technology development has flourished on this growth, but analysts report that skyrocketing costs may overshadow R&D while creating serious concerns about appropriate utilization, self-referral and provider qualifications.

Since 2000, nonradiologists have been the main players responsible for the rise of outpatient imaging, according to David C. Levin, M.D., of Philadelphia, who has studied the utilization issue extensively and reported corroborative findings at RSNA 2007. The former radiology chair at Thomas Jefferson University, Dr. Levin found that from 1999 to 2002, radiologists experienced a 12 percent growth rate in imag-

ing, while nonradiologists accounted for twice that amount.

“Imaging was growing at a rate that [the Medicare Payment Advisory Commission, or MedPac] felt was unsustainable,” said William T. Thorwarth Jr., M.D., of Catawba Radiological Associates in Hickory, N.C., past-chair of the ACR Commission on Economics and ACR past-president. “That put imaging in the crosshairs of MedPac and Congress.” Dr. Thorwarth is a member of the RSNA Research & Education Foundation Board of Trustees.

Washington-based healthcare consultants The Moran Company reported in 2007 that the DRA would slash Medicare outpatient reimbursement by an average 18 percent, depending on specialty, practice and location. Moran found that 87 percent of affected services would be paid at rates less than cost, principally targeting a limited number of high-volume procedures used by Medicare patients. Senior access to the latest technologies and clinic viability became serious concerns, according to Moran.

Northern California PET Imaging Center in Sacramento has been particularly hard hit by the DRA. “We are weathering a \$700 per scan decrease this year—I think that’s unprecedented for any other modality,” said CEO Ruth Tesar. “It’s a killer. It’s going to be extremely difficult and I don’t know how a lot of centers are going to make it.”

“The wild card is still what private payers do, as most centers do a significant portion of their business with private payers,” said Buckhalter. “We have clients who saw some of their private payers reduce contract rates soon after the DRA took effect.”

Arnold Vinstein, M.D., president of Tower Imaging Medical Group in Los Angeles, said he believes the DRA was inevitable. “It was a knee-jerk reaction,” Dr. Vinstein said. “Everybody was getting into the imaging business because they saw it as ‘easy money.’ They were thinking, ‘My God, What kind of business recovers its capital

costs in the first year?’ That was the red flag.”

More Challenges Lie Ahead

2008 will be another rough year, said Dr. Vinstein, predicting that fewer physicians will apply for radiology residencies—the litmus test that conditions have struck bottom.

In Dallas-Fort Worth, Radiology Associates of Tarrant County experienced a \$2.5 million cut due to DRA

in its first year, said Chairman and President Richard Jensen, M.D. Dr. Jensen said his organization has more than offset the cut from volume growth, but the impact has led the practice to delay expansion, postpone

equipment replacement and consider any future ventures much more carefully. He said he foresees an era when imaging is not a standalone venture but involves new approaches, possibly combined with pain management or other multispecialty centers.

A recent market analysis, “U.S. Markets for PACS 2007,” noted that while picture archiving and communication systems (PACS) can improve operational efficiency at imaging facilities, smaller clinics find them out of reach due to DRA-related cuts. PACS vendors are responding with new models tailored to these smaller facilities, the report noted.

Amid the general gloom, some see useful market changes and even distant advantages. “Tighter margins will allow imaging centers to focus on efficiency—smarter business people know how to run companies on tighter margins—coupled with quality care,” said Paul Duck, CEO of Florida Radiology Imaging in Orlando.

On Capitol Hill, “radiology is still in play for additional cuts,” said Cynthia Moran, ACR assistant executive

director of government relations. She added, however, that there is also broad-based support for utilization control and Congress may soon adopt language for mandatory accreditation of advanced diagnostic imaging services.

“These are technologies that everyone wants access to and the technology is going to get better and better—more affordable and more effective,” Moran said. “It will be tragic if Congress goes at it with a meat axe,” taking the incentive for innovation out of the new technology, she added.

“There is receptivity in government to utilization tools that can provide some method to the madness out there, but I think we’re going to be on the hot seat for a while to come,” Moran said. □

[The DRA has] certainly put a damper on opening new facilities and those already marginal may now have to merge, sell or simply close their doors.”

John Buckhalter

RSNA 2007 Attendees Contact Congress with Concerns

More than 1,100 people visited the Call to Action center sponsored by the Medical Imaging & Technology Alliance (MITA) during RSNA 2007, sending more than 3,500 messages urging Congress not to further cut Medicare reimbursement for medical imaging.

“It was a huge success,” said Andrew Whitman, vice-president of MITA, a divi-



sion of the National Electrical Manufacturers Association (NEMA). “It was more than we could have imagined. It was clearly recognized that RSNA supported the effort.”

Visitors to the Call to Action center could personalize letters to their Congressional representatives and personally call them to discuss concerns.

Uganda Visit Inspires Ongoing Contribution

WITH JUST A dozen or so radiologists serving a population of 27 million people with limited, 15- to 20-year-old equipment, physicians in the east African country of Uganda clearly have their work cut out for them.

Despite the tremendous challenges, however, doctors there are eager for additional knowledge and the ability to better care for their countrymen. Brian Mullan, M.D., said that was one of the first things he noticed during a September trip to lecture radiology residents on ultrasound and CT as part of an RSNA-sponsored International Visiting Professor Program.

The 14-day trip included stops at Mulago National Hospital, a government hospital, and Mengo Hospital, a missionary hospital, in Uganda's capital city of Kampala. Dr. Mullan, an associate professor of radiology at the University of Iowa in Iowa City, said the goal was to teach the residents new things they could do, with the resources they have, to further help patient care.

"They have two CT scanners in the country and they don't have the opportunity to practice imaging as often as we do," said Dr. Mullan. "But they are very capable, very compassionate and their limitations do not slow them down. Since there are so few radiologists, we also had a goal to train non-radiologists to do this type of work."

Working alongside Dr. Mullan were Sharlene Teefey, M.D., a professor of radiology and director of diagnostic



(from left) Sharlene Teefey, M.D., Vikram Dogra, M.D., and Brian Mullan, M.D., visited Uganda as part of the RSNA International Visiting Professor Program.

ultrasound at the Mallinckrodt Institute of Radiology at Washington University School of Medicine in St. Louis, and Vikram Dogra, M.D., director of ultrasound and a professor of radiology and urology at the University of Rochester, New York.

Wait to See a Doctor Can Be Years

Uganda is an agriculturally rich country but access to medical care is limited by more than just the number of radiologists and the dated equipment—unreliable electricity, lack of technical support, limited donations, poor logistics and poverty are also factors, said the radiologists.

"They can do a lot of interventional procedures if they have catheters and such, but that equipment is donated and the donations are limited. It's decided on a weekly basis, almost, what they

can do," Dr. Mullan said.

Even if the equipment is available, some patients in Uganda still wait years to see a doctor.

"When you see these people, it is shocking to see how extreme their conditions are," said Dr. Mullan. "In American waiting rooms, people complain about how long it takes to see a doctor. In Uganda, some people have waited five years or longer."

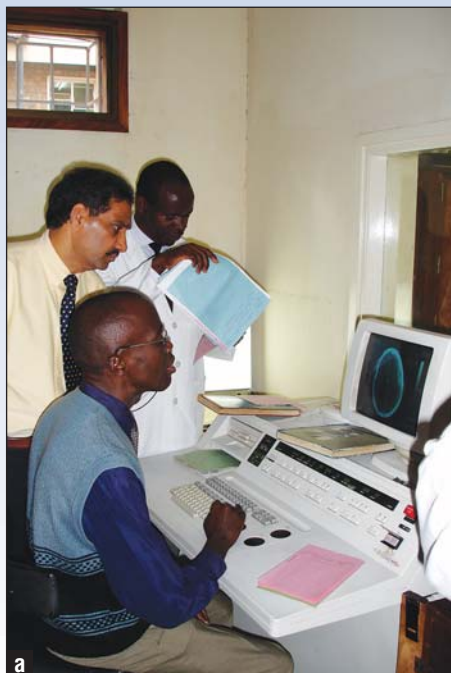
Drs. Mullan, Dogra and Teefey all clearly remember one such case.

A 22-year-old man came to Mulago National Hospital with filariasis, a parasitic and infectious tropical disease transmitted by mosquitoes. "He presented with a scrotum the size of a basketball," Dr. Mullan said. "He was 22 and this had been going on since age 3, but he did not have access to medical care so he suffered for a very long time."

Dr. Dogra pointed to another case that he said epitomizes the unfortunate outcomes of a lack of medical care in

In American waiting rooms, people complain about how long it takes to see a doctor. In Uganda, some people have waited five years or longer.

Brian Mullan, M.D.



(a) Vikram Dogra, M.D. (*second from top*), assisted in clinical interpretation of CT scans during the Uganda trip.

(b) Sherry Teefey, M.D. (*second from left*), demonstrated musculoskeletal ultrasound.

(c) The International Visiting Professors with participants in an ultrasound refresher pre-course, offered as part of the Pan African Congress of Radiology and Imaging in Kampala, Uganda.

impoverished countries.

“A young woman had a Cesarean section and due to poor hygiene got an infection,” said Dr. Dogra. “She had an abscess but limited resources meant they couldn’t find it right away. Her survival chance is dismal, yet here in the U.S., a simple exam could have found the abscess and it would have been taken care of.”

Equipment Donations, Return Visits Planned

These cases not only illustrate the great need for teaching in Uganda but also emphasize the need to work towards attaining additional updated equipment for the hospitals, said Dr. Teefey. She noted that since the IVP team returned to the United States, donation of two ultrasound scanners has been arranged. In addition, Michael Kawooya, M.M.Ch.B., M.Med. (Rad), president of the Pan African Congress of Radiology and Imaging, visited the Mallinckrodt Institute of Radiology following RSNA 2007 and interventional equipment was gathered for him to take back to Uganda.

Noting that a physician experienced in musculoskeletal ultrasound was requested when the IVP team was named, Dr. Teefey said she performed

hands-on teaching and patient examinations in addition to giving lectures. The experience was incredibly rewarding and she feels honored to have been chosen, she said.

Dr. Dogra expressed the same sentiment.

“I always wanted to devote my time to share my expertise with less privileged nations,” he said. “While I was in Uganda, I felt that they needed a lot of basic knowledge, so I gave a 2-hour lecture on ultrasound physics. I think they learned a lot and I learned from them as well.”

Dr. Dogra said the trip made him “very humble,” adding that he wants to keep helping his fellow radiologists in Uganda.

“I have sent a good deal of books to them on ultrasound and CT,” he said. “They don’t have the high technology there. I feel that we need to put our money where our mouths are and help countries like that. We are trying to make a list of things they need because whatever we don’t use is absolutely good for them.”

Drs. Dogra, Mullan and Teefey all said that they are very grateful for the opportunity given to them by RSNA to go to Uganda. Each hopes for an

opportunity to return, either through the IVP program or on their own.

“This trip was more than a professional trip,” said Dr. Teefey. “New found friendships were developed that will almost certainly last a lifetime.”

Established in 1986, the RSNA International Visiting Professor Program annually sends teams of North American professors to lecture at national radiology society meetings and visit with radiology residency training programs at selected host institutions in developing nations. The goal is to foster teaching and a cultural exchange between radiology departments in the U.S. and those in other countries. The RSNA Committee on International Relations and Education administers the program.

In 2007, RSNA also sent visiting professors to Algeria, Honduras and Mexico. In 2008, IVP teams will go to China, Nigeria, Vietnam and Mexico. Other recent trips have included Chile, India, Malaysia, Lithuania, Sri Lanka, Thailand and Brazil. □

Learn More

■ For more information on the RSNA International Visiting Professor Program, go to RSNA.org/International/CIRE/ivpp.cfm.

User Patterns Improve Radiology Search Engine

ALMOST A year after the official launch of the Yottalook™ radiology-centered search engine, developers say they're pleased that it is not only rapidly growing but also evolving.

Yottalook was originally designed to use specific search algorithms to sort out radiologic content on the Web, thereby making it much easier for radiologists and other imaging specialists to find useful information. The radiology engine finds pages using the Google™ index, but its algorithms use radiology ontologies such as RadLex® to filter the results. Yottalook also drills down into teaching files, research papers and journals, opening up an “invisible web” that mainstream search engines either do not or cannot access.

Since launching the engine on January 6, 2007, Yottalook's developers have focused on improving its functionality by monitoring exactly how and why radiologists search for information.

“They are using it exactly the way we imagined they would—to answer clinical questions at the time of interpretation,” said creator Khan Siddiqui, M.D., during an RSNA 2007 presentation.

Dr. Siddiqui, chief of imaging informatics and Cardiac CT/MR imaging at the Veterans Affairs Maryland Health Care System in Baltimore, developed Yottalook with Woojin Kim, M.D., William Boonn, M.D., and Nabile Safdar, M.D.

“The queries that we see coming in are not research-related queries, not general queries, but very specific to in-progress imaging interpretation tasks,” said Dr. Siddiqui. “One-fourth of all of our searches happen after midnight, meaning people are using it while on call. They're reading cases and looking



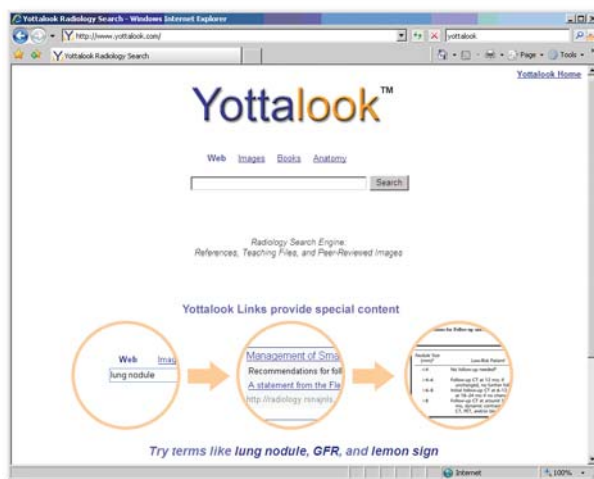
Yottalook™ co-developer Khan Siddiqui, M.D., demonstrated the radiology-centered search engine during RSNA 2007. Developers are monitoring use of the site in order to refine its capabilities.

for immediate information.”

Dr. Siddiqui noted that Yottalook received around 100,000 page views during August 2007. This number jumped to 213,000 in November, when it was added to the *RSNA.org* home page and demonstrated at RSNA 2007.

Fine-Tuning Searches is Aim of New Features

One of the major recent additions to Yottalook is Yottalook Images, which, like Google Images, allows users to preview thumbnails of search results. Unlike its Google counterpart, Yottalook Images can search through online peer-reviewed medical journals and display



The Yottalook™ radiology-centered search engine is also available on the *RSNA.org* homepage.

copyrighted images. According to Dr. Siddiqui, Yottalook Images contained 460,000 images as of November 2007 and continues to grow daily as Yottalook crawls journal sites and identifies more images.

The site also now features Yottalook Book, which uses the Google Book search function but filters results to include only imaging-related books. Radiologists seeking general anatomical information can use Yottalook Anatomy, which searches anatomy sources ranging beyond its usual index of radiology sites.

With almost a year's worth of search query data at their disposal, the Yottalook developers are better able to fine-tune the engine, Dr. Siddiqui said. "It's the psychology of search and information retrieval," he said. "Users may not know what they are looking for, so the first thing they do is look for something that they already know or that is somehow related to their search target. In the process, they find the exact terminology they're looking for and then change their search behavior accordingly.

"We track and analyze these search patterns, and the results allow us to optimize our search capabilities," Dr. Siddiqui continued. "We can then develop an algorithm that predicts what radiologists are actually looking for and helps them get that information."

Dr. Siddiqui used the term "AVN" as an example. The acronym can represent both "avascular necrosis" and "atrioventricular node." However, the developers have already noted that 25 percent of all searches coming to Yottalook are related to bone disease. "For 'AVN' we automatically

launch the avascular necrosis part of the search, because it's related to bone disease. But at the same time, we also ask 'Do you mean atrioventricular node?' We're providing guidance based on past search strategies, trying to understand what users are looking for, and then modifying our own strategies for getting the right information up as quickly as possible."

One-fourth of all of our searches happen after midnight, meaning people are using it while on call. They're reading cases and looking for immediate information.

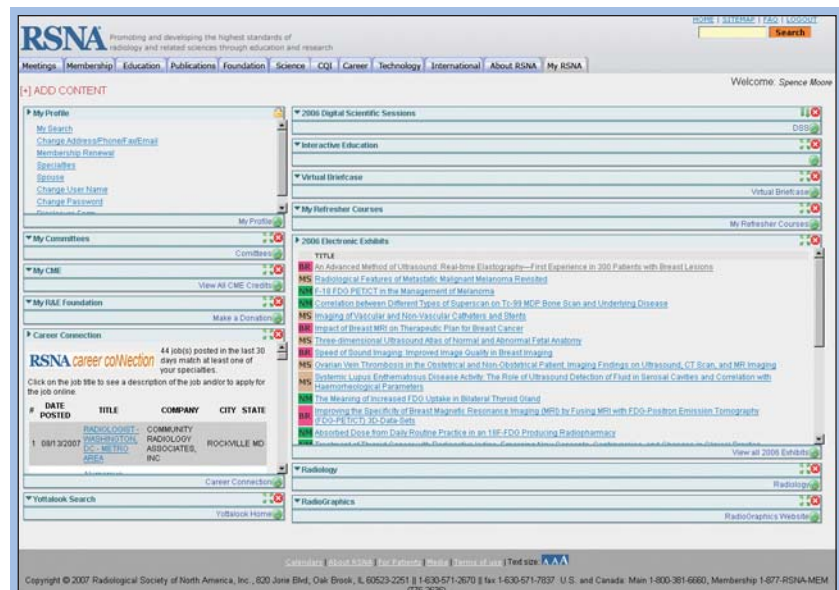
Khan Siddiqui, M.D.

Moving forward into the second year, Dr. Siddiqui said the Yottalook creators would like to expand the site to cover all medical imaging searches, not just those specific to radiology. "We need to understand what kind of images or information non-radiologists

need and then figure out how to optimize the engine for them," he said. □

Note: This article was adapted from a story that appeared in the RSNA 2007 Daily Bulletin. The daily newspapers from the annual meeting are available online at RSNA.org/bulletin.

Daily Bulletin



My RSNA® Customizes RSNA.org Content

INTRODUCED along with Yottalook™ on the new *RSNA.org* is a customizable Web page called My RSNA®.

Members are directed to My RSNA when they log into *RSNA.org*. My RSNA is a collection of mini-applications, including "My Profile," which always appears on the page to allow easy updates of account information. Other mini-applications, or applets, can be removed, added, expanded, collapsed and moved around the page. These applets give RSNA members quick access to personal data, as in My Committees, My CME and My R&E Foundation. Other applets list recent articles from *Radiology*, *RadioGraphics* and *RSNA News*. At annual meeting time, applets can be added to provide listings of all refresher courses, scientific papers, education exhibits and other content related to the subspecialties in which the user has indicated interest.

Radiologists Worldwide Unite to Tackle Issues Facing Profession

AT A first of its kind meeting at RSNA 2007, radiologists from across the globe gathered to discuss concerns about patient radiation dose, the impact of computerized provider order entry (CPOE) systems and other issues facing the specialty.

The meeting included representatives of RSNA and the RSNA International Advisory Committee, the International Society of Radiology and European Society of Radiology, as well as radiologists from Canada, Brazil, China, France, Sweden, Japan, Austria, Germany, Australia, South Korea, Mexico, Hong Kong and Argentina.

Radiation Dose, Reduction Methods Vary Globally

Addressing the issue of reducing radiation dose to patients, leaders agreed it will require the effort of radiologists and nonradiologists as well as imaging equipment vendors.

James A. Brink, M.D., presented "Use and Misuse of Radiation in Medicine" and focused on the magnitude of radiation dosage in the U.S. In 1980, the average American had a medical radiation dose of 0.54 mSv. By 2006, that amount increased 600 percent, to 3.2 mSv per capita. The worldwide average background radiation dose is estimated at 2.4 mSv per year.

"There has been an exponential increase in CT use in the last 25 years," said Dr. Brink, a professor and chair of the Department of Diagnostic Radiology at Yale University School of Medicine and chief of diagnostic radiology at Yale-New Haven Hospital. Dr. Brink is helping evaluate new technologies to



Martin H. Reed, M.D., of the Canadian Association of Radiologists, addressed computerized provider order entry systems.

simultaneously improve resolution on helical CT scanning and reduce radiation dosage.

"CT is a relatively high dose procedure, with a typical dose of 10 mSv," Dr. Brink continued. "Doctors in the U.S. order a lot of CTs because they are easy to perform and give quick results."

In comparison, Dr. Brink cited work by Fred Mettler, M.D., of the National Council on Radiation Protection & Measurements (NCRP),

CT provides tremendous benefits, so we should resist being too negative about it.

Theresa C. McLoud, M.D.

which indicated that in Europe, the average medical radiation dose ranges from 0.7 to 2.0 mSv per capita. European doctors have done a much better

job of limiting radiation exposure with strict referral criteria and justification criteria, said Dr. Brink. "Radiologists in the United Kingdom are the legal gatekeepers of radiation exposure," he said.

In the U.S., "There is resistance to allowing radiologists to be the gatekeepers, so we need to teach all other

physicians about radiation protection," said Dr. McLoud, associate radiologist-in-chief and director of education for the Department of Radiology at Massachusetts General Hospital in Boston and a professor of radiology at Harvard Medical School.

Participants agreed doctors in other specialties need more education about radiation exposure risk. Swedish radiologist Hans Ringertz, M.D., Ph.D., said he saw improvements in his country when cardiologists themselves started getting too much radiation exposure.

2007 RSNA President R. Gilbert Jost, M.D., said it would be helpful for vendors to agree on a standard methodology for electronically reporting the radiation dose from each examination. Making the data available in a standard format that is easy to review would motivate both radiologists and manufacturers to do a better job, said Dr. Jost, the Elizabeth Mallinckrodt Professor of Radiology, chair of the Department of Radiology at Washington University School of Medicine,



2008 RSNA president Theresa C. McLoud, M.D. (a), and Lizbeth Kenny, M.B.B.S. (b), of the Royal Australian and New Zealand College of Radiologists, participated in the international radiology special session at RSNA 2007.

director of the Mallinckrodt Institute of Radiology and radiologist-in-chief at Barnes-Jewish Hospital in St. Louis.

Dr. Jost added that such a project might be appropriate for the Integrating the Healthcare Enterprise (IHE®) initiative, with a public demonstration staged at an upcoming annual meeting.

Noted Dr. McLoud: “We need to maintain a balance. CT provides tremendous benefits, so we should resist being too negative about it.”

CPOE Systems Can Drive Appropriate Imaging Worldwide

Participants in the special RSNA 2007 meeting also considered radiology’s role in CPOE systems. By enabling physicians to enter orders into a computer system and communicate the orders electronically to other departments, CPOE systems are designed to eliminate paperwork and unnecessary steps, improve communication and minimize errors.

Presenter Martin H. Reed, M.D., F.R.C.P. (C), presented a CPOE system in use in Canada. Dr. Reed is chair of the Canadian Association of Radiologists (CAR) Guidelines Working Group and was lead investigator for Clinical Decision Support in the Diagnostic Radiology Project at the Children’s Hospital (see *RSNA News*, December 2007). He launched the project after noting an increase in diagnostic imaging volumes.

“Ten to 20 percent of diagnostic imaging exams did not contribute to patient management,” said Dr. Reed, a

professor of radiology and pediatrics at the University of Manitoba and chair of the Department of Radiology at Children’s Hospital in Winnipeg. “There was an increase in radiation dose, cost, waiting time and anxiety.”

CAR issued its guidelines on the Internet and on CD, said Dr. Reed, adding, “But we all know that guidelines are not always followed.” CAR then persuaded the Canadian government to pay for a study of computerized radiology orders that included the guidelines. In the Manitoba project, a referring physician ordering a radiologic procedure was required to provide information on a patient’s condition.

If the imaging study was appropriate, the order was sent through to radiology. If not, the physician would get an electronic message—for example, a physician might be told that a child with asthma did not need radiography. The physician could seek another test as recommended by the guidelines or override

the message.

During the study from July 2006 to August 2007, more than 8,000 radiology examinations were ordered. About 20 percent were covered by CAR guidelines, with no guidelines in place for the remaining orders. Approximately 10 percent of the orders overall were considered inappropriate based on the guidelines, said Dr. Reed.

“We have a lot of work to do in improving educational intervention for diagnostic imaging,” he said. “We need to look at areas without guidelines and create them.”

Lizbeth Kenny, M.B.B.S., of the Royal Australian and New Zealand College of Radiologists, noted: “We need clinician buy-in. Otherwise, the guidelines will be ignored.”

The meeting concluded with the group considering development of an international white paper on radiation dosage. □

RSNA Responds to *NEJM* Study on CT and Radiation Exposure

NATIONAL news media used RSNA 2007 as a backdrop for reaction to an article on CT and radiation exposure published in the Nov. 29, 2007, issue of *The New England Journal of Medicine (NEJM)*.

Philip Alderson, M.D., chair of the RSNA Public Information Committee, told reporters: “There is no question that CT has saved many lives. CT should be used when it has the best chance of providing a timely and accurate diagnosis for the patient. In other

words, it has to be the right scan at the right time for the right person.”

The *NEJM* article, “Computed Tomography—An Increasing Source of Radiation Exposure,” was authored by David Brenner, Ph.D., D.Sc., and Eric J. Hall, D.Phil., D.Sc. An RSNA press release, “Radiologists, Medical Physicists Working Toward Patient Safety in CT,” further responds to the conclusions reached in the article and is available at RSNA.org/media/pressreleases.

RSNA 2007 in Pictures

THE 93RD RSNA annual meeting saw the introduction of many new and exciting programs, as well as the return of many longstanding and popular features. The meeting theme, “Connecting Radiology,” alluded not only to the relationships shared by radiologists across the globe but also to the boundless opportunities created when different aspects of the radiologic community—science, technology, ingenuity and patient care—come together.





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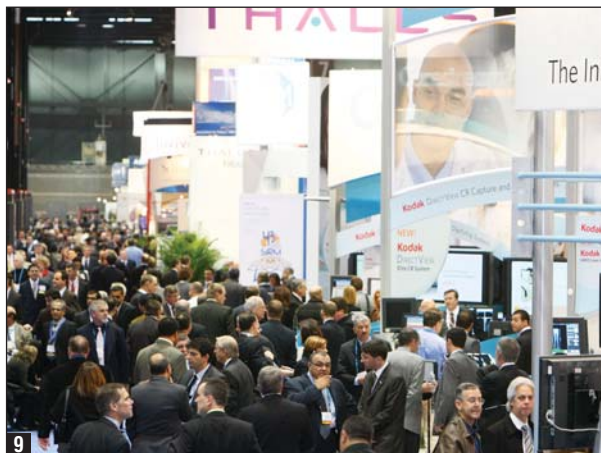
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1. Help Centers assisted RSNA attendees with everything from badge replacement to Chicago tourism information.
2. Allen S. Lichter, M.D., delivered the Annual Oration in Radiation Oncology.
3. Attendees offered feedback about the redesigned *RSNA.org*, which includes the new My RSNA®. More information on My RSNA is available on Page 13.
4. A new Show Floor Café in the Lakeside Learning Center and express dining tickets gave RSNA 2007 attendees more mealtime options.
5. Radiology is part of the transformation of medicine, said 2007 New Horizons lecturer Elias A. Zerhouni, M.D.
6. More than 400 residents attended the RSNA 2007 Residents Reception.
7. Back for its second year, the Molecular Imaging Zone introduced Meet the Expert sessions at RSNA 2007.
8. The RSNA technical exhibition gives attendees a chance to experiment with new technology.
9. The technical exhibition at RSNA 2007 was a record-breaking 535,300 square feet. Of the 757 exhibitors, 122 were exhibiting at RSNA for the first time.
10. The Grand Concourse is always a hub of activity at RSNA annual meetings.
11. The RSNA 2007 Image Interpretation Session was held Sunday afternoon in the Arie Crown Theater. For more information on accessing the Image Interpretation Session online, see Page 29.
12. WiFi Zones, now with electrical outlets for plugging in laptops, make it easy for RSNA annual meeting attendees to keep in touch with their departments or practices back home.



Research & Education Foundation Donors

THE Board of Trustees of the RSNA Research & Education Foundation and its recipients of research and education grants gratefully acknowledge the contributions made to the Foundation October 18, 2007–November 16, 2007.

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



Hundreds of donors to the RSNA Research & Education (R&E) Foundation took advantage of the R&E Donor Lounge at RSNA 2007. The lounge is available to those who contributed \$50 or more to the Foundation during the current giving year. Donations were also accepted onsite.

Journal Highlights

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

Imaging Genetics of Brain Longevity and Mental Wellness: The Next Frontier?

NEARLY TWO-thirds of the approximately 30,000 genes in the human genome are related to brain function and up to half the variance in age-related changes in cognition, brain volume and neuronal function appears to be genetically determined. As neuroimaging is employed to study the effects of genes, neurogenetics may affect future radiology research and practice.

In a review article in the January issue of *Radiology* (RSNA.org/radiology), Jeffrey R. Petrella, M.D., Venkata S. Mattay, M.D., and P. Murali Doraiswamy, M.D., of Duke University Medical Center review the basic principles of imaging genetics. They also summarize genetic polymorphisms that may potentially affect brain aging and use specific polymorphisms to illustrate how genetic-imaging findings are evolving and may affect radiology.

Specifically, the researchers address:

- Genomics, proteomics and metabolomics of brain function

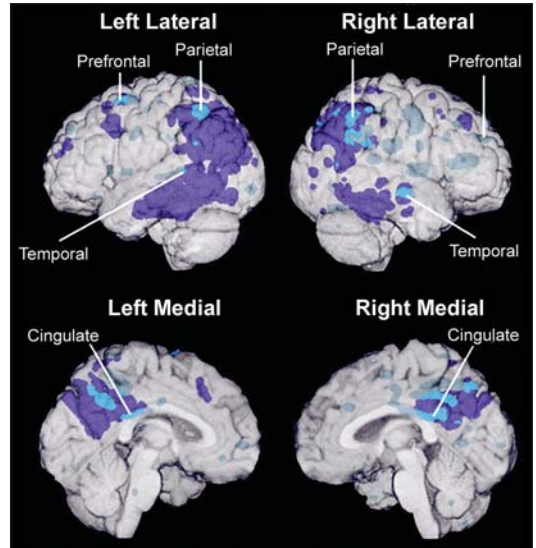
Effect of APOE4 allele on glucose metabolism in young adults.

Image illustrates regions of the brain with abnormally low glucose metabolism measured at FDG PET in young adult carriers of APOE4 allele in relation to those of patients with probable Alzheimer disease (AD). 3D surface-projection map of abnormally low glucose metabolism in young adult 4 carriers is superimposed on a map of abnormally low glucose metabolism in previously studied patients with probable AD.

(Reprinted, with permission, from Reiman E.M., Chen K., Alexander G.E., et al. Functional brain abnormalities in young adults at genetic risk for late-onset Alzheimer's dementia. *Proc Natl Acad Sci USA* 2004;101:284-289). (*Radiology* 2008;246:20-32) © RSNA, 2008. All rights reserved. Printed with permission.

- Genes and brain longevity
- Apolipoprotein E (APOE) gene
- Genes regulating neurotransmitter enzymes or receptors
- Genes regulating neuronal growth factors

As technology advances, public interest in genotyping will continue to grow, according to the researchers, who note the confidential genotyping services becoming available commercially via the Internet. The researchers add, however, that physicians should be



wary of rushing to adopt new technology until appropriate sensitivity and specificity studies are conducted and genomics can be shown to improve patient outcomes above and beyond currently available clinical measures.

“Until then, imaging-genetics correlative studies will remain a useful research tool to enhance our knowledge of the aging and diseased brain,” the researchers conclude.

Radiology in Public Focus

Media Coverage of Radiology

In November, prior to RSNA 2007, media outlets carried 153 news stories generated by articles appearing in *Radiology*. These stories reached an estimated 58 million people.

Print coverage included placements in *Diagnostic Imaging*, *24x7*, *Radiology Today*, *Biophotonics International*, *Imaging Technology News* and *Health and Medicine Weekly*. Web placements included Yahoo! News, Science Daily, *ajc.com*, *boston.com*, *forbes.com* and *medscape.com*.



January Public Information Activities Focus on Brain Imaging

In January, RSNA distributed the “60-Second Checkup” audio program to nearly 100 radio stations across the U.S. The four-segment program focused on various aspects of using fMRI to diagnose neurological disorders.

MR Urography: Techniques and Clinical Applications

MR UROGRAPHY is one of the newer technologies developed for imaging the urinary tract. An evolving group of techniques gives MR urography the potential to provide the most comprehensive and specific imaging test available for many urinary tract abnormalities, noninvasively and without the use of ionizing radiation. Formidable limitations and challenges remain, however, including relative

RadioGraphics

insensitivity for renal calculi, relatively long imaging times, sensitivity to motion and lower spatial resolution compared with CT and radiography.

In an article in the January-February issue of *RadioGraphics* (RSNA.org/radiographics), John R. Leyendecker, M.D., Craig E. Barnes, M.D., and Ronald J. Zagoria, M.D., review the most common MR imaging techniques used to image the urinary tract and discuss special considerations for pediatric patients, pregnant patients and patients with renal insufficiency. The authors also:

- Illustrate potential clinical applications of MR urography with respect to urolithiasis, urinary tract obstruction unrelated to urolithiasis, hematuria and congenital anomalies

Neobladder outlet obstruction in a 65-year-old man who had undergone cystectomy and ileal neobladder reconstruction for adenocarcinoma of the bladder.

(a) Coronal maximum intensity projection (MIP) image from excretory MR urographic data obtained as part of routine follow-up demonstrates marked dilatation of both upper collecting systems (arrows) and the neobladder due to outlet obstruction. The patient was asymptomatic at the time of the examination. (b) Axial gadolinium-enhanced 3D fat-suppressed gradient-echo MR image (LAVA) through the urethral anastomosis shows that an enhancing recurrent tumor (arrow) is responsible for the outlet obstruction.

(*RadioGraphics* 2008;28:23-48) © RSNA, 2008. All rights reserved. Printed with permission.

- Identify common MR urographic artifacts and pitfalls

“When properly performed, MR urography can be a valuable means of noninvasively assessing the urinary tract,” the authors conclude. “The successful interpretation of MR urographic examinations requires familiarity with the numerous potential pitfalls and artifacts that may be encountered.”



This article meets the criteria for 1.0 AMA PRA Category 1 Credit. CME is available online only.

Quality Initiatives Section Debuts in *RadioGraphics*

A NEW SECTION of *RadioGraphics* devoted to quality improvement topics has made its debut in the January-February issue of *RadioGraphics*. Included in the inaugural edition are:

- “Quality Initiatives in Radiology: Historical Perspectives for an Emerging Field,” by Jonathan B. Kruskal, M.D., Ph.D.
- “President’s Address from the Opening Session of RSNA 2006: Strengthening Professionalism,” by Robert R. Hattery, M.D.

The new section is designed to support all radiologists in meeting the practice quality improvement (PQI) requirements of the American Board of Radiology maintenance of certification (MOC) program. Dr. Kruskal, a *RadioGraphics* associate editor, oversees the section. He also serves on the editorial board of *RSNA News*.



Jonathan B. Kruskal, M.D., Ph.D.

Working For You

RSNA Committees

RSNA News continues its series highlighting the work of RSNA's volunteer committees with a look at the Education Council.

Education Council

THE RSNA Education Council oversees short-term and long-term RSNA program planning and coordination. Members include the appointed chairs of key programming committees, the editors of *Radiology* and *RadioGraphics*, the RSNA executive director and a liaison from the American Association of Physicists in Medicine (AAPM).

Chaired by the RSNA Board Liaison for Education, the committee also reviews policy and makes recommendations to the Board. "We bring together the chairs of many of the programs which are essential to the annual meeting," said George S. Bisset III, M.D., council chair.

Working in conjunction with the

Board of Directors, the Education Council has a tremendous influence on the educational excellence of the RSNA annual meeting, said Dr. Bisset. "It is an opportunity for brainstorming the future and critiquing the past," he said.

*Working
for you*
COMMITTEE
PROFILE

"This council really establishes the pedagogical tenor of the annual meeting and the direction for science and education delivery in radiology. The brain

trust involved at the council meeting encompasses many, many years of experience in radiology."

Dr. Bisset said the council recently arranged its meeting around the time of the Scientific Program Committee brainstorming session, so that changes made in the meeting program were fresh.

To ensure the most relevant education programming, the council involves input from RSNA journal editors as a way of remaining connected with RSNA member needs, said Dr. Bisset. "This has been invaluable in providing a comprehensive look at the quality of the product we need to deliver to our membership," he said.

For information about volunteering for RSNA committees, go to RSNA.org/About/whoswho/committees/.



George S. Bisset III, M.D.



Faculty contributors worked with RSNA to offer more than 30 courses at RSNA 2007 as self-assessment modules (SAMs). Christopher G. Willett, M.D., led an interactive SAM course as part of the Bolstering Oncoradiologic and Oncoradiotherapeutic Skills for Tomorrow (BOOST) program. More than 1,200 attendees took advantage of online SAMs registration for maintenance of certification credit.

2007 Syllabus Now Available

The 2007 syllabus, *Categorical Course in Diagnostic Radiology: Clinical PET and PET/CT Imaging*, offers more than 20 chapters on various PET/CT topics, such as:

- Basics and imaging protocols
- Clinical/cardiac PET/CT
- National Oncologic PET Registry
- Emerging PET application

Up to 19 AMA PRA Category 1 Credits™ are available. RSNA syllabi are available in print, CD-ROM and online PDFs. To purchase the 2007 syllabus or view a complete syllabi listing, go to RSNA.org/education. Inquiries about RSNA education courses or products should be directed to the RSNA Education Center at 1-800-272-2920 or 1-800-381-6660 x3753.



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

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Program and Grant Announcements

RSNA Co-sponsored Courses at the Association of University Radiologists (AUR) Annual Meeting

March 25–29 • Seattle

MERC Workshops Part of the Association of American Medical Colleges (AAMC) Medical Education Research Certificate (MERC) Program, these workshops are targeted to clinicians and other educators who want to learn research skills enabling collaborative participation in medical education research projects. “Questionnaire Design and Construction” and “Program Evaluation” workshops will be offered during AUR on Tuesday, March 25.

Radiology Informatics: What the Academic Radiologist Needs to Know This session, also offered Tuesday, March 25, addresses informatics for radiology education, detailing how to optimize a teaching portfolio and improve radiology communication. A session on informatics for practice administration explores mining data to ensure quality and safety, while a session on informatics for imaging research looks at systems for imaging investigators.

More information about all sessions is available at www.AUR.org.

NCRP 44th Annual Meeting: Low Dose and Low Dose-Rate Radiation Effects and Models

April 14–15 • Bethesda North Marriott Hotel & Conference Center, Maryland

The 2008 annual meeting of the National Council on Radiation Protection & Measurements (NCRP) will address the debate over the applicability of a linear-nonthreshold model for characterizing the biological responses and health effects of exposure to low radiation doses. The effect of delivery rate on biological and health outcomes will also be discussed.

To register, go to registration.ncrponline.org. RSNA is an NCRP collaborating organization and is represented by Julie Kelter Timins, M.D.

Tools for Success in the Practice of Radiology

June 6–7 • RSNA Headquarters, Oak Brook, Ill.

PARTICIPANTS in this course will learn about and discuss proven tools, including strategic, operational and financial planning, that sustain success in radiology practice. Participants will also develop tools to promote com-

munication within their work settings and establish an effective programmatic approach to staff development and evaluation. Intimate, informative lectures will be complemented by interactive breakout sessions and discussion of

individual case-based scenarios from academic and private practice. For more information, contact the RSNA Education Center at 1-800-381-6660 x7772 or ed-ctr@rsna.org.

RSNA Education

EXHIBITOR NEWS RSNA 2007

Exhibitor News

Learn About New Products Exhibited at RSNA 2007

Information about more than 160 new products and services showcased at the RSNA 2007 technical exhibition can be found in the New Products & Services sections of the *Daily Bulletin*, the official newspaper of the RSNA annual meeting. Find the *Daily Bulletin* online by going to RSNA.org/bulletin. Please note that information for new product announcements was provided by the manufacturers. Inclusion of a product in the publication should not be construed as an endorsement by RSNA.



Access RSNA 2007 Exhibitor List Online

A list of companies that exhibited at RSNA 2007 is available at RSNA.org/showcase. Searchable alphabetically and by various product categories, the list is a resource for viewing and comparing companies when contemplating an equipment purchase.

RSNA Highlights™ 2008: Clinical Issues

Register by January 28 and Save \$100

RSNA Highlights™ 2008: Clinical Issues will be held February 18–20, 2008, in Orlando, Fla., at the Ritz-Carlton/JW Marriott Orlando, Grande Lakes.

A series of refresher courses, including some unique to Highlights 2008, will be offered along with electronic education exhibits and hot topics sessions from RSNA 2007. Courses will focus on thoracic radiology, cardiac imaging, head and neck radiology and

breast imaging, while hot topics sessions will address the latest developments PET/CT and body MR imaging.

United.com offers RSNA Highlights attendees special fares and discounts on select United Airlines, United Express and TED qualifying flights. Use the electronic certificate number 553SB to make a discounted airline reservation online at *United.com*. You can also



RSNA Highlights™ 2008: Clinical Issues
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call United at 1-800-521-4041 or your personal travel agent and mention the discount 553SB to be eligible for the discounted fares.

For more information and to register now, go to *RSNA.org/Highlights*.

News about RSNA 2008

Submit Abstracts for RSNA 2008

The online system to submit abstracts for RSNA 2008 will be activated in mid-January. **The submission deadline is 12:00 p.m.**

Central Time on April 15, 2008. Abstracts are required for scientific papers, scientific posters, education exhibits and a new category, applied science exhibits. Applied science exhibits include submissions that demonstrate non-hypothesis-based work not yet generally accepted enough in practice to



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be considered an education exhibit.

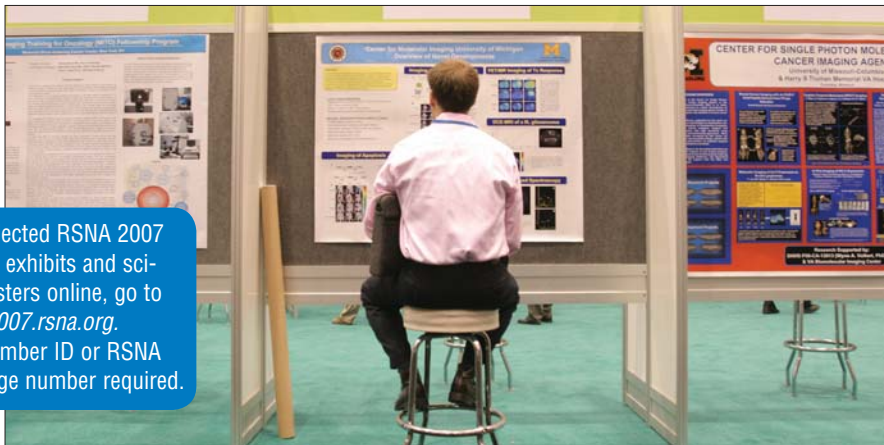
To submit an abstract online, go to *RSNA.org/abstracts*.

The easy-to-use online system helps the Scientific Program Committee evaluate submissions more efficiently. For more information about the abstract submission process,

contact the RSNA Program Services Department at 1-877-776-2227 within the U.S. or 1-630-590-7774 outside the U.S.

Important Dates for RSNA 2008

- April 15** Deadline for abstract submission
- April 21** RSNA/AAPM member registration and housing open—advance registration and housing brochure available online only at *RSNA2008.RSNA.org*.
- May 19** Non-member registration and housing open.
- June 30** Refresher course enrollment opens—course enrollment brochure will be available online and in print. Brochures will be mailed to all RSNA/AAPM members and all non-members registered by June 1. Others may download and print the brochure or request a printed copy at *RSNA.org/register*.
- Nov. 7** Final advance registration, housing and course enrollment deadline.
- Nov. 30– Dec. 5** RSNA 94th Scientific Assembly and Annual Meeting.



To see selected RSNA 2007 education exhibits and scientific posters online, go to *lakeside2007.rsna.org*. RSNA member ID or RSNA 2007 badge number required.

Product News

NEW PRODUCT

High-Resolution Image Output

CARESTREAM Health, Inc. (www.carestreamhealth.com) has introduced its new KODAK DRYVIEW 6800 Laser Imager for high-speed, high-resolution image output from general radiography and digital mammography applications. The DRYVIEW 6800 is designed with a smaller footprint, making it ideal for breast imaging centers, emergency rooms and outpatient imaging centers as well as radiology departments, according to the company. The imager produces 650 pixels-per-inch output for all images in all sizes, maintains throughput of up to 200 films per hour and supports film output from digital imaging modalities including CR, DR and PACS. Up to three film drawers accommodate five film sizes and an optional five-bin sorter enables easy film retrieval in a multimodality environment. The touchscreen user interface is available in English, Chinese, Korean, Japanese, French, Italian, German, Spanish, Portuguese, Polish, Russian and Turkish.



NEW PRODUCT

Mobile Dictation

Royal Philips Electronics (www.philips.com) has launched the Digital Pocket Memo 9370 for mobile dictation. Based on the Digital Pocket Memo 9600, the Digital Pocket Memo 9370 is priced lower and adds features such as file alteration protection and SpeechExec Dictate software, a comprehensive package designed to make it easy for all users to be productive instantly with digital recording.

The Digital Pocket Memo 9370 represents a new, simpler generation of digital recorders and dictation software, according to the company. Voice files are recorded onto an exchangeable secure digital card and e-mailed or downloaded via USB to a PC for transcription. A push-button system controls recording functions, with smart buttons to facilitate intuitive on-screen menu selections. The backlit LCD provides an instant job status overview for control and navigation.



FDA CLEARANCE

Low Dose Orthopedic Imaging

biospace med (www.biospace.fr) has received FDA clearance to market its EOS digital X-ray imager in the U.S. for 2D imaging use. Information submitted to FDA in support of biospace med's marketing application demonstrated up to 10 times reduction in dose when compared with commercially available film systems, without compromising image quality, according to the company. EOS 2D is capable of long-length digital imaging and also enables acquisition of multiplanar images in an upright, weight-bearing position. EOS is based on a patented particle detector technology and uses slot scanning technology to eliminate vertical distortion.

NEW PRODUCT

Mobile MR Injector

MEDRAD (www.medrad.com) has introduced the Spectris Solaris® EP Mobile MR Injection System, specifically tailored for the mobile MR trailer environment. The Spectris Solaris EP Mobile saves space with an off-the-floor design, compact storage against the trailer wall, AC power solution and equal access to either arm of the patient.



RSNA.org

RSNA 2007 Image Interpretation Session

THE RSNA 2007 Sunday Image Interpretation Session is available on-demand at the new *RSNA.org*. The 2007 session was moderated by C. Daniel Johnson, M.D.

The session will be available 24 hours a day through February, however *AMA PRA Category 1 Credit™* is not awarded for viewing the on-demand session.

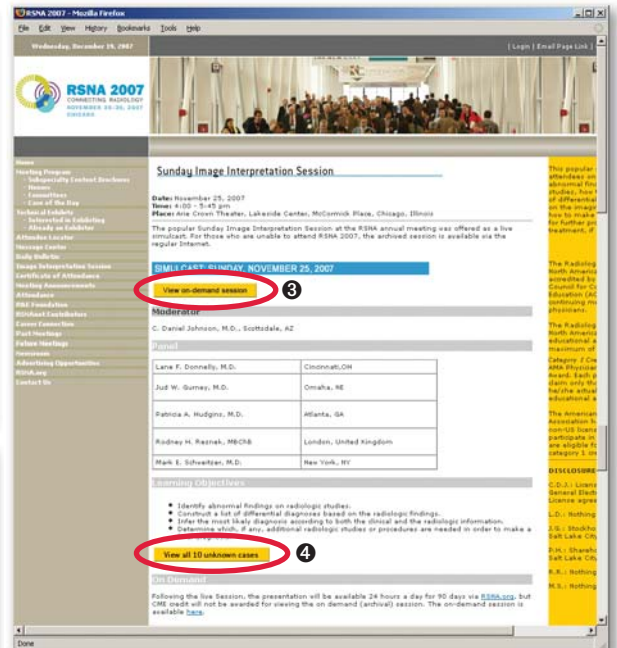
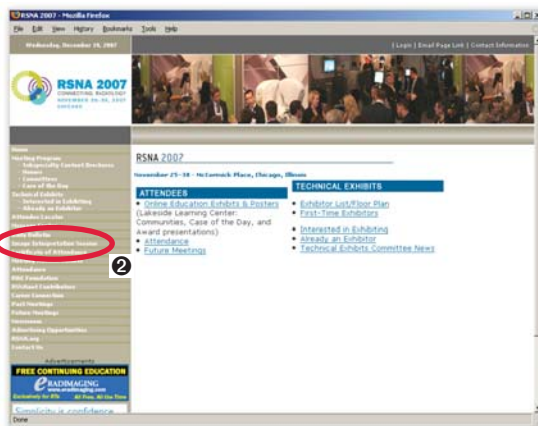
To access the on-demand session, select RSNA 2007 from the drop down menu under the Annual Meeting tab on the *RSNA.org* front page ❶. Click on Image Interpretation Session in the left-hand navigation bar ❷.

On the Image Interpretation Session page, click View On-Demand Session ❸. An interactive presentation detailing the 10 cases covered in the session can be accessed by clicking View All 10 Unknown Cases ❹.

The session is free, but you must register by entering your name and e-mail address. If you return to the session another time, you may click I

Have Already Registered – Log In Now and enter your e-mail address.

The session will begin playing automatically ❺. Users who do not have Microsoft Silverlight will be asked to download it for free.



Connections

Your online links to RSNA

RSNA.org

Radiology Online
RSNA.org/radiology

Radiology Manuscript Central
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InterOrganizational Research Council
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RSNA-ACR patient information Web site
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RSNA Membership Directory
RSNA.org/directory

RSNA Highlights™ 2008: Clinical Issues
RSNA.org/Highlights

RSNA 2008
RSNA2008.RSNA.org

Abstract Submission
RSNA.org/abstracts

Medical Meetings

February – June 2008

FEBRUARY 9-10

Armed Forces Institute of Pathology (AFIP), 23rd Annual Neuroradiology Course, Hyatt Regency Denver at Colorado Convention Center
• www.afip.org/Departments/edu/upcoming.htm

FEBRUARY 16-21

SPIE, Medical Imaging, Town and Country Resort & Convention Center, San Diego • spie.org

FEBRUARY 17-22

Society of Gastrointestinal Radiologists (SGR) and Society of Uroradiology (SUR), Annual Meeting, Westin Mission Hills Resort & Spa, Rancho Mirage, Calif. • www.sgr.org

FEBRUARY 18-20

RSNA Highlights™, Ritz-Carlton/JW Marriott Orlando, Grande Lakes, Florida • RSNA.org/Highlights

FEBRUARY 20-22

American Institute for Medical and Biological Engineering (AIMBE), 17th Annual Event, JW Marriott Hotel Pennsylvania Avenue, Washington • www.aimbe.org

FEBRUARY 25-28

Healthcare Information and Management Systems Society (HIMSS), Annual Conference and Exhibition, Orange County Convention Center, Orlando, Fla. • www.himssconference.org

MARCH 2-5

Society of Thoracic Radiology (STR), Annual Meeting, Sanibel Harbour Resort & Spa, Fort Myers, Fla. • www.thoracicrad.org

MARCH 7-11

European Congress of Radiology (ECR), Annual Meeting, Austria Center, Vienna • www.ecr.org

MARCH 12-15

American Institute of Ultrasound in Medicine (AIUM), Annual Convention, San Diego Marriott Hotel and Marina
• www.aium.org

MARCH 15-20

Society of Interventional Radiology (SIR), 33rd Annual Scientific Meeting, Washington, D.C., Convention Center
• www.sirmeeting.org

MARCH 25-29

Association of University Radiologists (AUR)/Society of Chairmen of Academic Radiology Departments (SCARD)/Association of Program Directors in Radiology (APDR), In Collaboration with RSNA, 56th Annual Meeting, Sheraton Seattle Hotel • www.aur.org

MARCH 30-APRIL 4

Society of Computed Body Tomography and Magnetic Resonance (SCBT-MR), 31st Annual Course, Charleston Place Hotel, South Carolina • www.scbtmr.org

APRIL 4-6

Japan Radiological Society (JRS), 67th Annual Meeting, Pacifico Yokohama, Japan
• www.secretariat.ne.jp/jrs67/english/invitation_eng.html

APRIL 13-18

American Roentgen Ray Society (ARRS), 108th Annual Meeting, Marriott Wardman Park Hotel, Washington • www.arrs.org

APRIL 14-15

National Council on Radiation Protection and Measurements (NCRP), 44th Annual Meeting: Low Dose and Low Dose-Rate Radiation Effects and Models, Bethesda North Marriott Hotel & Conference Center, Maryland • www.ncrponline.org

MAY 3-9

International Society for Magnetic Resonance in Medicine (ISMRM), 16th Scientific Meeting and Exhibition, Toronto
• www.ismrm.org

MAY 6-10

Society for Pediatric Radiology (SPR), Annual Meeting, Fairmont Scottsdale Princess, Arizona • www.pedrad.org

MAY 17-22

American College of Radiology (ACR), Annual Meeting and Chapter Leadership Conference 2008, Hilton Washington
• www.acr.org

JUNE 5-8

International Society of Radiology (ISR), 25th International Congress of Radiology, Palais des Congrès, Marrakesh, Morocco
• www.icr2008.org

NOVEMBER 30-DECEMBER 5

RSNA 2008, 94th Scientific Assembly and Annual Meeting, McCormick Place, Chicago • RSNA2008.RSNA.org

RSNANews

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