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MR Imaging Unit in Afghanistan Gives Soldiers Front-line Treatment

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2010 RSNA President Hedvig Hricak, M.D., Ph.D., Dr. h.c., (center), with Ricardo Garcia-Monaco, M.D., Ph.D., past-president of the Argentine Society of Radiology (left), and Alfredo E. Buzzi, M.D., 2012 Argentine Society of Radiology president.

Argentine Society Bestows Honors

Honorary membership was awarded to 2010 RSNA President **Hedvig Hricak, M.D., Ph.D., Dr. h.c.**, **Donald Frush, M.D.**, **Edward Y. Lee, M.D.**, **Eduardo Gonzalez Toledo, M.D.**, **Sylvia Neuenchwander, M.D.**, and **Gloria Soto Giordani, M.D.**, at the Argentine Society of Radiology recent annual meeting in Buenos Aires.

Dr. Hricak is chair of the Department of Radiology at Memorial Sloan-Kettering Cancer Center in New York, a professor of radiology at Cornell University Medical College and an attending radiologist at Memorial Hospital in New York. Dr. Frush is chief of the Division of Pediatric Radiology at Duke University in Durham, N.C., chair of the RSNA Refresher Course Committee and a member of the RSNA Public Information Advisors Network.

Dr. Lee is chief of the division of thoracic imaging and director of magnetic resonance imaging at Boston Children's Hospital. He is a member of the *RSNA News* Editorial Board, RSNA Public Information Advisors Network and the Health Services Policy and Research Subcommittee of the Scientific Program Committee. Dr. Gonzalez Toledo is a professor and the director of Neuroradiology and Research at Louisiana State University Health Sciences Center Shreveport.

Dr. Neuenchwander is head of imaging at the Curie Institute in Cedex, France, and is a past-president of the French Society of Radiology. Dr. Soto is a past-president of the Chilean Society of Radiology.

Workshop Defines Data Needed for CER Studies

The RSNA/American College of Radiology Workshop on Data Needs for Comparative Effectiveness Research (CER) of Diagnostic Imaging brought together a diverse group of researchers and technology developers to address the questions of what information is needed for the successful conduct of CER studies of diagnostic imaging and how this information can be made available.

The workshop in late 2012 was co-chaired by Constantine Gatsonis, Ph.D., and Jonathan Lewin, M.D., and included participants from research and clinical academia, the informatics and device industry and government. Topics discussed included structured reporting of diagnostic study results and interoperability of IT systems used in routine collection of clinical data.

The group will develop a white paper to identify the categories of data needed for CER, propose a minimum information set and discuss current gaps and barriers to the availability of this information. The paper will also survey the current information systems, identify challenges in ensuring the interoperability of systems and highlight recent developments and promising directions.



Numbers in the News

53,778

Reported total attendance at RSNA 2012, the world's premier scientific and educational forum in radiology. [Get more statistics on RSNA 2012 in Annual Meeting Watch on Page 23.](#)

4

Percent of pancreatic ductal adenocarcinoma (PDAC) patients who have 5-year survival rate, according to the American Cancer Society. [Read about new research offering a promising path to earlier detection and more effective treatment of the disease on Page 13.](#)

50

Number of education credits required to earn a Certification of Achievement from the Academy of Radiology and Leadership Management (ARLM). [Read more about opportunities to enhance and develop your career through ARLM on page 12.](#)

3

The number of 1.5 Tesla MR imaging machines in operation near combat zones in the Middle East. [Read more about the unique role a mobile MR imaging unit is playing in treating U.S. Soldiers in war-torn Afghanistan on Page 5.](#)

RANZCR Bestows Honors

The Royal Australian and New Zealand College of Radiologists (RANZCR) recently combined its 63rd Annual Scientific Meeting with the Asian Oceanian Society of Radiology (AOSR) to hold the 14th Asian Oceanian Congress of Radiology (AOCR) in Sydney, Australia. RANZCR and AOSR announced several awards at the event.

The RANZCR Gold Medal was awarded to **Mark Khangure, M.B.B.S.**, a private practice neuroradiologist and former head of the Department of Diagnostic and Interventional Radiology and director of imaging services at Royal Perth Hospital in Western Australia.

RANZCR's Roentgen Medal was awarded to **Greg Slater, M.B.B.S.**, radiologist and partner at Queensland X-Ray in Queensland, Australia, and president-elect of RANZCR.

AOSR Gold Medals were awarded to 2010 RSNA President **Hedvig Hricak, M.D., Ph.D., Dr. h.c.**, **Kenneth Thomson, M.B.B.S.**, and **Hans Ringertz, M.D., Ph.D.** Dr. Hricak is chair of the Department of Radiology at Memorial Sloan-Kettering Cancer Center in New York, a professor of radiology at Cornell University Medical College and an attending radiologist at Memorial Hospital in New York. Dr. Thomson is a professor and the director of radiology at the Alfred Hospital in Melbourne, Australia. Dr. Ringertz, recipient of the RSNA Special Presidential Award in 2010, is a professor emeritus at the Linköping University Hospital and the Karolinska University Hospital in Stockholm and a visiting professor at Stanford University.



The Royal Australian and New Zealand College of Radiologists (RANZCR) awarded its Gold Medal to (top, far left) Mark Khangure, M.B.B.S., pictured with 2012 RANZCR President Prof. Dinesh Varma; the RANZCR Roentgen Medal was awarded to Greg Slater, M.B.B.S., (top right); Asian Oceanian Society of Radiology (AOSR) Gold Medals were awarded to Kenneth Thomson, M.B.B.S., (bottom, center) pictured with 2011-2012 AOSR President Prof. Byung-Ihn Choi, left, and AOSR President-Elect Prof Kazuro Sugimura and Hans Ringertz, M.D., Ph.D. (bottom, far right). Hedvig Hricak, M.D., Ph.D., Dr. h.c., also received an AOSR Gold Medal but was unable to attend the ceremony.

GUNDERMAN RECEIVES TOP AAMC TEACHING AWARD

The Association of American Medical Colleges (AAMC) named Richard Gunderman, M.D., Ph.D., the recipient of the 2012 Alpha Omega Alpha Robert Glaser Distinguished Teacher Award at its recent annual meeting in San Francisco. Dr. Gunderman, professor of radiology at Indiana University, is a past recipient of the RSNA Outstanding Educator Award and the American Roentgen Ray Society (ARRS) Distinguished Educator Award and is a nine-time recipient of the Indiana University Trustees Teaching Award. He is the second radiologist to receive the AAMC's top award for teaching, which was created in 1988.



Reede Awarded ASHNR Gold Medal

The American Society of Head and Neck Radiology (ASHNR) awarded its 2012 Gold Medal to **Deborah L. Reede, M.D.**, during the society's recent annual meeting in Miami. Dr. Reede is chief of the Department of Radiology at SUNY Downstate Medical Center University Hospital of Brooklyn at Long Island College Hospital.



In Memoriam

RSNA honors three distinguished radiologists and their contributions to cardiovascular, musculoskeletal and genitourinary radiology.

Stewart R. Reuter, M.D.

Cardiovascular radiology pioneer **Stewart R. Reuter, M.D., J.D.**, died July 8, 2012, at the age of 78. Dr. Reuter served as chair of the Department of Radiology at the University of Texas Health Science Center at San Antonio for 20 years. He was the first to describe the angiographic abnormalities in several disease processes in the abdomen.



Dr. Reuter was a founding member of the Society of Cardiovascular and Interventional Radiology, of which he was named a fellow. He was also a fellow of the American Heart Association and the American College of Legal Medicine and received gold medals from the Texas Radiological Society, the Society of Interventional Radiology and the American College of Legal Medicine.

Carl Michael Sandler, M.D.,

World-renowned genitourinary radiology expert **Carl Michael Sandler, M.D.**, died July 22, 2012, at the age of 66. Over his 27-year career at University of Texas Medical School, he rose from assistant professor to chair of the Radiology Department and held many university positions. After stepping down as chair, he continued his career at MD Anderson Cancer Center.



Dr. Sandler was a past-president of the Society of Uroradiology and the Houston Radiological Society. In March 2012, the Society of Uroradiology awarded him the Howard Pollack Gold Medal for his achievements in his field.

Henry H. Jones, M.D.

Henry H. Jones, M.D., whose distinguished career as a professor of radiology at the Stanford University School of Medicine spanned seven decades, died August 11, 2012 at the age of 95.

After 68 years of diagnosing and treating patients with bone and soft tissue tumors, he left a legacy of more than 2,000 case studies, which are being digitized to make them available to students today and in the future.

Dr. Jones contributed to landmark research on how running affects bone

density and how tennis elbow increases bone size and explored how X-ray might be used to provide movies of a beating heart, a precursor of widely used technology. Dr. Jones was the first chief of the radiology service at the Palo Alto Veterans Administration Hospital, now the Veterans Affairs Palo Alto Health Care System. He was a recipient of Stanford University's Henry J. Kaiser Award for Excellence in Teaching.



MOC News

ABR Offers Focused Practice Recognition in Cardiac CT

The American Board of Radiology (ABR) now offers Focused Practice Recognition in Cardiac CT (FPR-CCT) as an optional component of the Maintenance of Certification (MOC) program. FPR-CCT is the only specialization of any kind in cardiac imaging recognized by the American Board of Medical Specialties (ABMS). Diplomates participating in FPR-CCT will be recognized on the ABMS and ABR websites as "Meeting MOC requirements in diagnostic radiology, with focused practice recognition in cardiac CT."

FPR-CCT is designed to allow ABR diagnostic radiology diplomates who

are enrolled in MOC, meeting MOC requirements and active in cardiac CT practice to achieve an added credential that demonstrates their commitment to maintaining quality, safety, expertise, and volume of practice in that modality. To review the requirements for FPR-CCT, go to www.theabr.org/FP-cardiac. To apply, diplomates can access their ABR Personal Database (PDB) at www.abronline.org. Under the "Optional Program" section, click the designated link to begin participation. (See the PDB graphic.)

Further questions regarding the program can be directed to fprcct@theabr.org.



My Turn

Amid the Science Lies the Art of Treating Patients

I have just returned from RSNA 2012 and I'm still feeling the enthusiasm of my colleagues as they expressed their commitment to the patient-centered theme woven throughout the meeting.

Messages about putting our patients first resonated with a wide range of RSNA meeting attendees, from radiologists, physicists and radiologic technologists to exhibitors and the media covering the meeting. Many who heard 2012

how we can make changes to positively affect those perceptions. There is an art to being both humanistic and scientific as we treat our patients and

said that they already practice patient-centered radiology, but they wanted to

help build momentum by pledging. It is really more than a pledge—it's a commitment to your patients. It's an assurance that you will do all you can to treat them as you would treat a loved one.

Dr. Richard Gunderman put it simply and succinctly in his Annual Oration in Diagnostic Radiology at RSNA 2012: *We must see the patient behind the image.*

The *RadiologyCares.org* website provides tools to help you to actualize the concept of patient centeredness in your radiology practice. While you're there, I encourage you to watch the short and entertaining *Radiology Cares: The Untold Future* videos on

the site. And, of course, take the pledge! We're interested to hear your thoughts about the movement to be patient centered. Please email your comments to RadiologyCares@rsna.org.



Mary C. Mahoney, M.D., is director of breast imaging at the University of Cincinnati Medical Center's Barrett Cancer Center and chair of RSNA's Patient-centered Radiology Steering Committee.

Read more about Radiology Cares in *RSNA.org* on Page 24

“There is an art to being both humanistic and scientific as we treat our patients and bring them the best of both worlds.”

RSNA President Dr. George Bisset's presidential address exited the session with an enthusiasm about our profession that they hadn't felt for some time.

Dovetailing beautifully into the overtones of putting our patients first was the launch of RSNA's campaign *Radiology Cares: The Art of Patient Centered Practice*. The campaign is the evolution of many patient-centered radiology courses, workshops and other activities presented through the years and is overseen by the Patient-Centered Radiology Steering Committee, which I'm honored to chair.

Amid all the significant scientific and technologic breakthroughs we see in our field, it is essential for us to remember that there is an art to treating our patients. There is an art to understanding how our patients perceive their experiences in the radiology department and

bring them the best of both worlds.

Being patient-centered isn't only about talking to your patients. And while it's encouraged, it doesn't even require that you talk to them. Being patient-centered means you've considered

the patient experience holistically—from the first time they have contact with any member of your staff until the time they are given their reports—and into your follow-up communications.

During the Radiology Cares launch at RSNA 2012 we asked attendees to join us in our pledge to put our patients first. Many of those who stopped by the booth

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MR Imaging Unit in Afghanistan Gives Soldiers Front-line Treatment

Since 2011, mobile MR imaging has played a surprising and unique role in diagnosing and treating mild traumatic brain injuries (mTBI) and other afflictions suffered by U.S. soldiers in war-torn Afghanistan, according to the presenter of an RSNA 2012 session.

MR IMAGING is greatly improving care to wounded warriors, many who suffer head injuries from roadside bombs, said Lt. Col. Sean Jersey, M.D., a third-year radiology resident at David Grant Medical Center, Travis Air Force Base, California, who discussed the current and future role of mobile MR imaging in combat and the clinical benefit and types of diseases identified with the modality.

Although he was not able to attend RSNA 2012, Lt. Col. Robert Jesinger, M.D., Task Force Medical East Expeditionary Medical Support Squadron radiology flight commander, deployed to Afghanistan in 2012 and led the project to expand MR imaging in a combat war zone. Maj. Samuel Southam, M.D., also contributed to the project.

In addition to brain injuries, trauma, tumors, infectious/inflammatory diseases and congenital disorders are among the afflictions diagnosed and treated by mobile MR imaging on host nationals, military contractors and Special and U.S./NATO Forces and others who otherwise would not have immediate access to MR technology, Dr. Jersey said.

“While U.S./NATO troops could be removed from the combat zone for MR imaging, more rapid diagnosis of conditions with mobile MR imaging has been value-added in their care,” Dr. Jersey said. “And local nationals—who cannot leave the country—can be considered for MR imaging when under U.S./NATO care and when medically warranted.”

While TBI is a signature injury of war, the ability to peer into the brain and see the injury, diagnose it, and actually examine the injury is relatively new, said Dr. Jersey, who reviewed cases remotely via teleradiology links between Afghanistan and the U.S. “Mobile MR imaging allows us to gather data on mild traumatic brain injury in the combat zone, diagnose mission-changing injuries such as neurological decompression sickness and musculoskeletal injuries in Special Forces troops, diagnose conditions only identifiable with MR imaging and even image military working dogs,” he said.

ON THE COVER

U.S. soldiers benefit from the arrival of an MR imaging machine in Afghanistan.

Images courtesy of U.S. Air Force.



Jersey



Jesinger

“Medical people are deployed to the front line with the troops,” Dr. Jersey added. “These guys are getting a lot of stabilization treatments right on the front line. They’re getting a lot better treatment.”

MR imaging has future potential in helping detect possible early signs of TBI, Dr. Jesinger said.

“If you do a CT for TBI, you are usually looking for big problems, such as a head bleed,” Dr. Jesinger said. “MRI is geared to find subtle problems. If someone has had a concussion and we do an MRI and identify brain injury, then that’s a big deal. If we don’t see anything with an MRI, then it may be that there is nothing there, but we hope to find MRI as a helpful distinguishing tool. Treatment guidelines for head injury can be upgraded and more aggressive treatment can be

“While U.S./NATO troops could be removed from the combat zone for MR imaging, more rapid diagnosis of conditions with mobile MR imaging has been value-added in their care.”

Lt. Col. Sean Jersey, M.D.



Image courtesy of U.S. Air Force

Physically getting the mobile imaging machine to the Bagram Air Base in Afghanistan was a major undertaking that took weeks, according to Lt. Col. Sean Jersey, M.D., who said the results were worth the considerable effort. “These guys are getting a lot of stabilization treatments right on the front line,” Dr. Jersey said.

done for someone with a head injury and visible results on an MRI, than if there are no indicators. Knowing that information sooner helps treatment to get initiated sooner.”

Current results and future potential of MR imaging are worth the considerable effort put into buying and transporting the equipment, Drs. Jesinger and Jersey said. The U.S. Congress collaborated with the chairman of the Joint Chiefs of Staff to fund placement of the three mobile 1.5 Tesla MR imaging machines, including the one operated by the U.S. Air Force at Bagram Air Base in Afghanistan.

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Physically getting the mobile imaging machine to the Bagram Air Base in Afghanistan was a major undertaking that took weeks, Dr. Jersey said. It was also years in the making, creating a controversy as to whether or not it was worth the millions it cost, he said.

Role of MR Imaging Expands to Myriad Conditions

While the main purpose of MR imaging in a combat zone was for research and gathering data on U.S./NATO troops with brain injuries, the modality’s role has been carefully expanded to include medical conditions where results will change mission requirements and/or medical management, Dr. Jersey said.

Examples include the use of MR imaging on a 19-year-old Army specialist who had experienced three weeks of left hip pain, limiting her duties. Her physical exam and radiographs were not diagnostic and after the soldier’s orthopedic surgeon requested an MR, she was diagnosed with an iliac wing sarcoma, Dr. Jersey said.

In another case, MR imaging revealed an unstable T3 burst fracture in a 22-year-old Marine who fell and injured his upper thoracic spine. Toe cellulitis and osteomyelitis were discovered in a Special Forces troop member through MR and an acute biceps tendon tear was detected in a 23-year old Special Forces soldier who injured his elbow during combat.

With MR imaging, an F-16 pilot with an acute right knee chondral injury was deemed unable to safely or effectively fly a combat aircraft, while a U-2 pilot was diagnosed with neurologi-

cal decompression sickness. A military bomb-sniffing dog that developed leg weakness was diagnosed with a spine tumor. “We take care of our dogs just as we do people,” Dr. Jersey said.

The equipment also aided in treating local nationals. MR imaging detected a radioactive adenopathy from cellulitis infection in an Afghan Army troop member, cortical dysplasia in an Afghan child with seizures and congenital brains cysts, Dr. Jersey said.

In the future, MR imaging in combat zones could provide perfusion imaging applications such as neuroradiology and abdominal imaging as well as cardiovascular MR imaging and a more robust use of military teleradiology networks for MR imaging interpretation including second opinion consults, Dr. Jersey said. □



Image courtesy of U.S. Air Force/Senior Airman Krista Rose

From left: Col. James Sperl, Col. Jane Prather and Lt. Col. Charles Voigt cut the ribbon for the grand opening of the new MR imaging machine at Craig Joint Theater Hospital at Bagram Air Base, Afghanistan, in October 2011.

On-site Radiologist Could Be New Model of Care in Radiation Oncology

The presence of a dedicated in-house radiologist improves patient care in the radiation oncology department and is on track to become the way of the future, according to research presented at RSNA 2012.

RADIATION ONCOLOGISTS are using increasingly complex cross-sectional imaging techniques to improve the accuracy of their radiation therapy planning contours, despite little formal training in diagnostic imaging, said Noel Young, M.D., a radiologist at the University of Western Sydney in Sydney and co-author of the paper, "Incorporating a Radiologist in a Radiation Oncology Department: A New Model of Care?"

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"Contour accuracy is essential in conformal techniques like intensity-modulated radiation therapy," Dr. Young said. "There is need for a more reliable imaging review."

Dr. Young and colleagues studied the impact of having a radiology fellow in the radiation oncology department over a nine-month period. The fellow provided radiological advice on diagnostic and treatment planning images for two sessions per week and reviewed the accuracy of the patient's tumor contours for the weekly quality assurance audit meetings.

"The oncology staff was able to book time slots with the radiologist and complete a feedback questionnaire afterward," Dr. Young said.

There were 49 consultation sessions during the study period, including a review of 56 diagnostic imaging or treatment planning scans. The radiologist's advice resulted in a change of patient management in 25 percent of cases and recommendations for further evaluation in another 20 percent. Changes to target volume and normal tissue volume were among the radiologist's recommendations.

"A good percentage of patients benefitted from this interaction and the oncologists were open-minded about having changes made to their target planning," Dr. Young said.

In one case, the planning CT revealed a vertebral lesion in a patient with potentially metastatic prostate cancer. The radiologist confirmed the finding as a benign tumor on an earlier diagnostic CT, avoiding unnecessary further imaging or biopsy.

"A radiologist who is located within the department has access to the patient's clinical notes and other multimodality diagnostic imaging and time to review the planning scans in detail prior to the



Young

meeting," said study co-author Marion Dimigen, M.D., from Liverpool Hospital in Sydney. "This results in a qualified interpretation of imaging leading to better radiation oncology care."

The radiologist also reviewed 94 CT scans for the quality assurance audit meetings. Queries over the accuracy of the contours resulted in a significant change of management in six

“Having more clinical interaction between radiology and clinical medicine—in this case, cancer care—is the way of the future.”

Noel Young, M.D.

patients. Dr. Young displayed images from one case where the radiologist had added a nearby lymph node group to the target area in a patient with Merkel cell carcinoma, a rare form of skin cancer.

Drs. Young and Dimigen suggested that access to an on-site radiologist may become the new model of care as radiation therapy planning imaging becomes more complex.

"The rationale behind this being a fellowship position is to conduct collaborative research between the two specialties," Dr. Dimigen said. "However an alternative model of care may be funding a radiologist for sessions within the radiation oncology department to review diagnostic and radiotherapy planning images for direct clinical care."

"Having more clinical interaction between radiology and clinical medicine—in this case, cancer care—is the way of the future," Dr. Young added. □



Patients stand to benefit from having an on-site radiologist in the radiation oncology department, according to research presented at RSNA 2012.

Radiology and Radiation Oncology Need Closer Alliance

After a long separation, it may be time for radiation oncology and radiology to get back together, according to a leading expert.

Anthony L. Zietman, M.D., M.B.B.S., a professor of radiation oncology at Harvard Medical School and director of the radiation oncology program at Massachusetts General Hospital—both in Boston—traced the long separation to the early days of radiology, when the therapeutic side of the practice existed in the shadows of the diagnostic side.

"Radiologists spent nine months training in therapy," said Dr. Zietman, delivering the Annual Oration in Radiation Oncology at RSNA 2012.

"During the 40s and 50s, small groups of radiologists began concentrating more on therapy and less on diagnosis. These physicians argued that therapy was a separate area, and that nine months of training was woefully inadequate."

RSNA annual meetings in the 1950s became occasions for unofficial gatherings of fledgling radiation oncologists at Chicago restaurants—Dr. Zietman showed an invitation to one such meeting at Barney's Steakhouse—and in 1958, the radiation oncologists ended up forming the American Club of Radiation Oncologists, precursor to the American Society for Radiation Oncology (ASTRO). The development of specialized radiation oncology residency training programs followed and, by the late 1960s, two completely separate specialties had been established.

"The amicable divorce between therapy and diagnosis was complete," Dr. Zietman said.

The ensuing decades saw both specialties prosper. Diagnostic radiology spun off its own therapeutic branch—interventional radiology—with many subspecializing in cancer therapy using ablative techniques, while radiation oncology became the most sought after residency in the U.S., according to Dr. Zietman. But trouble looms on the horizon for both specialties, he warned, due to an increasing reliance on technology.

"The problem is that as you become more and more technological, you make yourself less and less necessary," he said. "The art of radiotherapy has progressively been lost as we've taken a technological focus."

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Zietman

Dr. Zietman believes it is time to consider rebuilding the union between the professions. He pointed out that radiation oncologists and interventional radiologists have complementary strengths that would serve cancer patients well.

"Radiation oncologists are good at treating small lesions, and less good at treating bulk tumor, while interventional radiologists handle bulk tumor much better with their ablative techniques," Dr. Zietman said. "Think how powerful it would be if we could put them together."

Pilot programs that offer a hybrid specialty to interested medical residents would be a good way to bring the erstwhile partners back together, Dr. Zietman suggested.

Obstacles to a union remain, including tradition, self-interest and training concerns, but Dr. Zietman said that strengthening the bond between radiology and radiation oncology is essential to protect each specialty from becoming irrelevant. □

“Brazil Presents” Spotlights Latest MR Imaging Techniques

Radiology remains integral to the growth of healthcare in Brazil, according to presenters who offered the latest state-of-the-art in MR imaging during the “Brazil Presents” session at RSNA 2012.

BRAZIL, which offers universal health coverage that is utilized by 75 percent of the public, is now the fifth-largest buyer of MR imaging devices in the world, according to moderator Pedro Daltro, M.D., who outlined the country’s healthcare expenditures, including medical diagnostics.

Douglas Racy, M.D., whose presentation focused on factors that can influence the quality of MR imaging, was among the Brazilian presenters who demonstrated highly advanced techniques in a variety of MR applications.

“There are tradeoffs for MR imaging parameters,” Dr. Racy explained. “Often we cannot gain advantage in one parameter without sacrificing another.” He outlined techniques to ensure the appropriate tradeoffs for various clinical indications, emphasizing the best quality in the shortest acquisition time.

“As the number and complexity of identified midbrain-hindbrain malformations has increased, neuroradiologists must be prepared to study and discuss with neurologists and geneticists the embryological events and genetic mutations,” said Leonardo Vedolin, M.D., Ph.D. Dr. Vedolin noted that the current pattern-recognition approach to MR imaging has limitations and identified developmentally based classification methods for congenital posterior fossa malformations.

Emerson Gasparetto, M.D., Ph.D., demonstrated advanced MR techniques including images acquired at 7T for distinguishing demyelinating diseases from tumors, infection, vascular disease and other demyelinating diseases.

“The most common reason for falsely attributing a patient’s symptoms to multiple sclerosis is faulty interpretation of MR imaging,” said Dr. Gasparetto, who also demonstrated the role of advanced MR in assessing treatment response, progression and prognosis.

In characterizing hypervascular lesions in the cirrhotic liver, MR imaging tools can help narrow the differential diagnosis, said Antonio Eiras de Araujo, M.D., who outlined diagnostic approaches and management techniques for challenging cases.

“Hypervascular lesions are common in the cirrhotic liver and differentiating them is a relevant responsibility of the radiologist,” Dr. Eiras de Araujo said.



Daltro



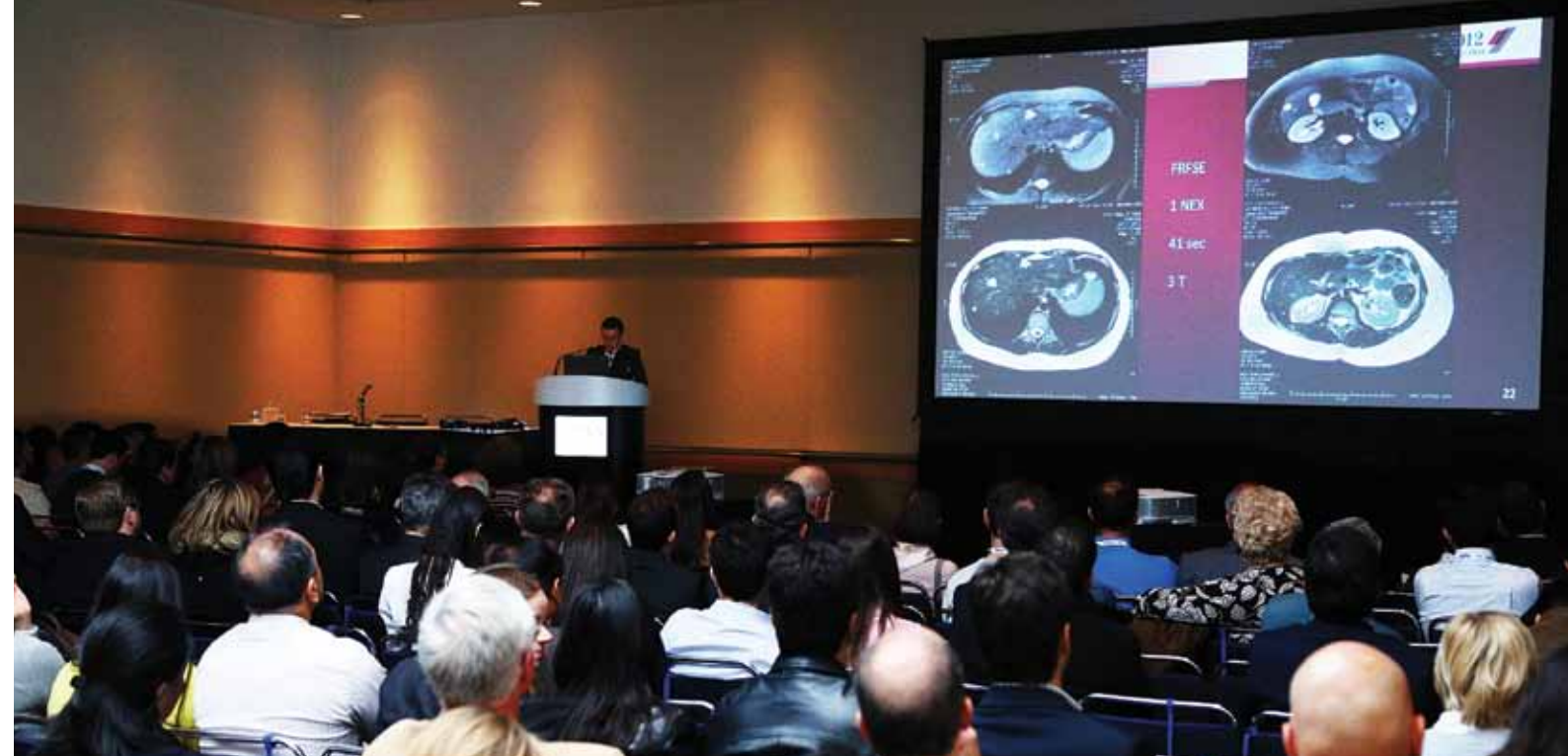
Gomes da Silva

In his visually engaging presentation of advances in fetal MR imaging technology, Dr. Daltro explained how 3D simulation videos can be created to demonstrate a virtual path through anatomical structures and how, for example, a facial mass can obstruct the airway. He also showed how imaging can guide molds for physical models of the fetus and internal structures.

“The most common reason for falsely attributing a patient’s symptoms to multiple sclerosis is faulty interpretation of MR imaging.”

Emerson Gasparetto, M.D., Ph.D.

Daily Bulletin coverage of RSNA 2012 is available at RSNA.org/bulletin.



Noted Brazilian radiologists presented scientific papers on the latest topics in MR imaging, including practical factors that influence the quality of MR imaging, the role of MR in demyelinating diseases and pediatric neuroimaging and the use of 3D MR to evaluate fetal abnormalities, during the Brazil Presents session at RSNA 2012.

Future of Research in Brazil is Promising

The MR imaging research is a good example of the promise Brazil holds for the future, according to Manoel Aparecido Gomes da Silva, M.D., president of the Colégio Brasileiro de Radiologia e Diagnóstico por Imagem, CBR (Brazilian College of Radiology and Diagnostic Imaging), who gave the opening address at Brazil Presents.

Radiology centers at Brazil’s largest medical institutions are conducting cutting-edge research, offering postgraduate courses and training a new class of radiologists whose skills will benefit the country at large, Dr. Gomes da Silva said.

“Our current challenge is to disseminate to more distant regions a better quality of radiology, similar to that practiced in large cities,” he added.

Brazil’s research output has grown quickly in recent years and is likely to continue on that course, Dr. Daltro said.

“The government is investing more not only in infrastructure for research, but also in people by offering scholarships in Brazil and abroad,” he said. □

RSNA PARTNERS WITH SPR FOR JPR MEETINGS IN SÃO PAULO, BRAZIL

RSNA has partnered with the Radiological and Diagnostic Imaging Society of São Paulo (SPR) for the joint planning of Jornada Paulista de Radiologia (JPR) in 2014, 2016 and 2018. JPR is the leading medical imaging meeting in Latin America.

RSNA forms international alliances to develop and enhance the contact between radiologists and professionals from various regions of the world. Collaborating on scientific meetings like JPR is an important example of this work.

After many years of attending JPR meetings, RSNA and SPR leaders decided that a partnership

would benefit their shared goal of advancing radiologic science and education internationally. They agreed to work together to plan and implement a meeting in 2014, designed to showcase some of the best work

offered by both organizations. In 2014, 2016, and 2018, RSNA will work closely with SPR to plan meeting content, provide speakers and assist in developing materials and courses that are not typically offered at JPR.

“We look forward to collaborating with SPR on a variety of initiatives

to bring unique opportunities to radiologists in Brazil,” said Richard L. Baron, M.D., RSNA Board Liaison for International Affairs. “Initially, this endeavor will begin with RSNA participating in the JPR program plan-

ning and sending expert speakers to help facilitate nontraditional sessions.”

The partnership is expected to extend beyond the meeting to promote membership in both organizations.



Lean Job Market Makes Enlisting, Retaining Staff Critical

With market forces and new federal policies prompting cutbacks in radiology hiring, academic institutions and private practices must focus on recruiting—and keeping—the best possible staff for the positions they do have, experts say.

“THE CURRENT SITUATION is certainly a recruiter’s dream, a trainee’s nightmare,” said C. Douglas Maynard, M.D., professor emeritus of radiology at Wake Forest University in Winston-Salem, N.C., and 2000 RSNA President. Dr. Maynard was one of four presenters of the RSNA 2012 session, Recruiting and Retaining Radiologists and Staff. “We’ve been here before—this has happened in my lifetime at least three times,” he said. “Until the economy recovers, it’s not likely we’ll have additional jobs available.”

A faculty vacancy survey Dr. Maynard has been conducting over the last dozen years with the Society of Chairs of Academic Radiology Departments (SCARD) members and other radiology chairs shows a steady decline in available positions in academic radiology. Certain subspecialties such as pediatric radiology, interventional radiology and breast imaging remain difficult positions to fill, Dr. Maynard said.

Exacerbating the economic pressures against creating new positions is the fact that physicians are not retiring, further reducing the vacancies available to new radiologists. While there is increased demand for night coverage, a number of department chairs have suggested decreasing the number of residents and fellows, Dr. Maynard said.

“Some practices are actually downsizing faculty and letting staff members go,” he said. “The market out there is extremely tough.”

Top-notch Recruitment Essential to Faculty Quality

Academic radiology practices looking to fill their precious open positions with exemplary staff are wise to start by recruiting the best possible residents, training them well and exposing them to the excitement of an academic environment from the onset, said session presenter R. Gilbert Jost, M.D., the Elizabeth Mallinckrodt Professor of Radiology and chair of the Department of Radiology for Washington University School of Medicine in St. Louis and director of the Mallinckrodt Institute of Radiology.

“We draw a significant number of faculty recruits from our residents,” said Dr. Jost, 2007 RSNA President, a 2012 RSNA Gold Medal recipient and a member of the *RSNA News* Editorial Board. “We pride ourselves on being extremely friendly and responsive. We go out of our way to create a col-



Maynard

Jost

Borgstede

Thorwarth

legal environment. Learning to be a great radiologist can be a challenging experience, but it shouldn’t have to be a painful one.”

Also key to academic recruitment and retention are intellectual challenges, opportunities for growth, job security, feelings of worth and contribution, appropriate compensation and an enjoyable workplace, said presenter James P. Borgstede, M.D., a professor and vice-chair of radiology at the University of Colorado School of Medicine in Aurora.

“Learning to be a great radiologist can be a challenging experience, but it shouldn’t have to be a painful one.”

R. Gilbert Jost, M.D.

While factors like salary, location, vacation and clinical focus can make private practices more desirable to job candidates than academic institutions, some private practices are adopting a cost-cutting model of operating smaller practices and eliminating less profitable imaging exams, Dr. Borgstede said.

More appropriate, Dr. Borgstede said, is a strategy to retain quality radiologists and recruit physicians who have IT and decision support expertise along with the skills to fill areas of clinical shortage.

“There will be a shortage of radiologists in the future so the specialty should make no drastic changes in residency positions,” Dr. Borgstede said. “Groups should prepare for competition for new hires in the future.”

Due Diligence Necessary Before Joining Private Practice

Regardless of the market, the recruiting/application process always has two sides, said RSNA session presenter William T. Thorwarth Jr., M.D., a radiologist/partner at Catawba Radiological Associates in Hickory, N.C., and RSNA Board Liaison for Publications and Communications. He urged both parties in employment negotiation to do their due diligence.

“Joining a group is like entering a marriage,” Dr. Thorwarth said. “It is expensive in time and money for both parties, so make it worth your effort.”

The radiology job market has been a roller coaster, “and everyone wishes for a crystal ball but it doesn’t exist,” Dr. Thorwarth said. In the meanwhile, applicants and employers alike should commit to honesty and transparency, he said.

“Practices and applicants should look at their own needs and desires and do their best to match those with the other,” he said. □



The current economic climate has created “a recruiter’s dream and a trainee’s nightmare,” according to presenters of the RSNA 2012 session, “Recruiting and Retaining Radiologists and Staff,” who urge both parties in employment negotiation to do their due diligence before accepting or offering a position.

ARLM COURSES OFFERED AT RADIOLOGY MEETINGS IN 2013

The RSNA 2012 session, “Recruiting and Retaining Radiologists and Staff,” was among the wide variety of RSNA 2012 courses sponsored through the Academy of Radiology Leadership and Management (ARLM), dedicated to offering radiology professionals the opportunity to enhance and develop as leaders.

ARLM is sponsored by five participating radiology education societies, including RSNA, which continues to offer courses either online or in-person at meetings throughout 2013.



Medical imaging professionals can earn a Certificate of Achievement from ARLM by earning 50 education credits—at least 30 credits in person—across a spectrum of core learning domains, including Financial

Skills, Human Resources, Professionalism, Legal/Contracting, Academic Mission and General Management. A minimum of three credits in each domain is required.

There are no fees beyond costs associated with CME activities, and many of those are free to members of the respective sponsoring societies.

To view the course catalog for 2013 and for more information on ARLM, go to www.radleaders.org/index.cfm.

Research Spurs Progress in Pancreatic Cancer Diagnosis

A new biomarker with potential for improving early detection of pancreatic ductal adenocarcinoma (PDAC), which is one of the deadliest of cancers, has led one researcher down a promising path to earlier detection and perhaps better treatment.



PART OF THE REASON PDAC IS SO lethal is that patients often have no symptoms until the disease has reached an advanced stage and treatments like surgery and chemotherapy are rarely curative. As a result, the 5-year survival rate for PDAC is only 4 percent, according to the American Cancer Society.

Researcher Joshua Dowell, M.D., Ph.D., knew that a certain protein, Plectin-1 (Plec-1), is buried in a cell's cytoplasm, but in PDAC it migrates to the cellular membrane, making it a conspicuous marker for disease. Through a \$30,000 Bracco Diagnostics/RSNA Research Resident Grant, Dr. Dowell developed a novel diagnostic and treatment approach to PDAC as a radiology resident at the University of Virginia in Charlottesville in 2010.

"Plec-1 is overexpressed in PDAC and clearly distinguishes PDAC from inflammatory and premalignant pancreatic changes," said Dr. Dowell, now an assistant professor of interventional radiology at The Ohio State University Wexner Medical Center in Columbus.

Dr. Dowell worked with two professors in the University of Virginia's Biomedical Engineering Department, Kimberly Kelly, Ph.D., and Alexander L. Klibanov, Ph.D., to develop a synthetic agent that targets Plec-1 in PDAC. The agent is a peptide paired with a liposome that can be engineered to carry drugs, dyes and imaging agents. Dr. Dowell and colleagues proposed linking liposomes carrying fluorescent DiR dye to a Plec-1 targeting peptide to study its uptake in pancreatic cancer cells.

Using the RSNA grant funding, Dr. Dowell and colleagues tested the new targeted agent on mice with human pancreatic cancer implanted under their skin. Using fluorescence molecular tomography (FMT) the researchers compared the efficacy of the targeted liposomes with control liposomes that did not have the Plec-1 targeting peptides.

Preliminary results presented at RSNA 2011 showed that the targeted agent delivered high payloads of DiR dye with a high degree of specificity to the pancreatic tumors. "There was an eight-fold increase in accumulation of dye over controls at 20 hours post-injection," said Dr. Dowell, who received a Trainee Research Prize for his RSNA 2011 presentation. "This increased accumulation of dye within the subcutaneous pancreatic tumors persisted one week post-injection."



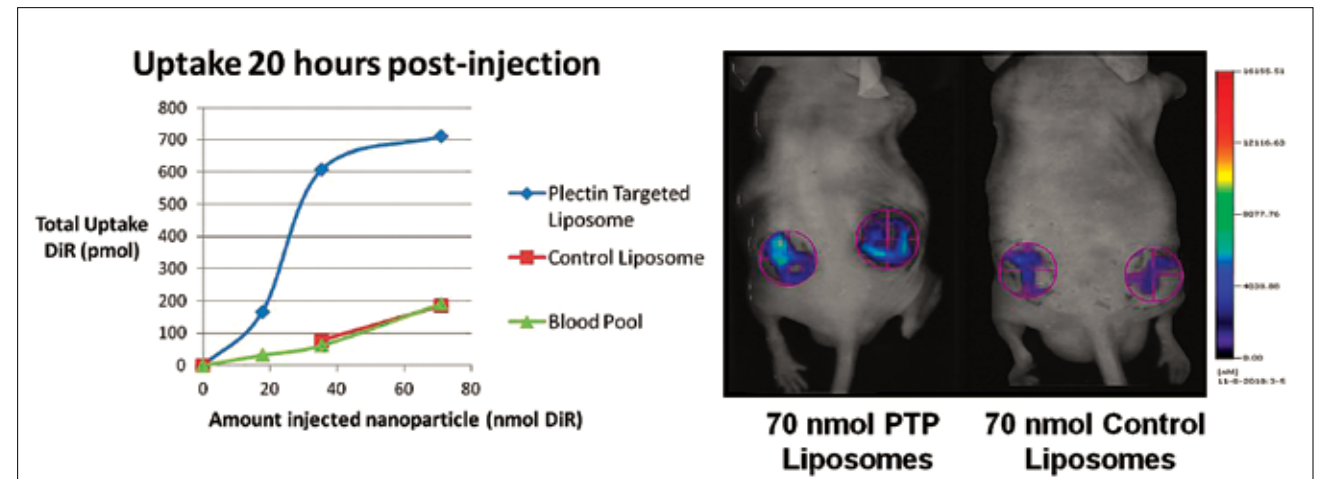
Dowell

Targeted Agent Has Possible Therapeutic, Diagnostic Applications

The targeted agent is a potential tool in the burgeoning field of theranostics, in which one drug can have both therapeutic and diagnostic applications. Besides providing earlier detection of pancreatic lesions, the novel PDAC-targeted imaging agent may allow for higher doses of radionuclides and chemotherapy drugs, Dr. Dowell said.

"These results, although preliminary, are of great interest as a platform to deliver high payloads of chemotherapy."

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



Researcher Joshua Dowell, M.D., Ph.D., developed a novel diagnostic and treatment approach to pancreatic ductal adenocarcinoma (PDAC). Above: Specific accumulation of PTP-lipo in tumors. (Left) Mice with L3.6pl subcutaneous tumors were injected with three concentrations of DiR-loaded liposomes then imaged 20 hours post-injection. An 8-fold higher accumulation of PTP-lipo in tumors for the 35 nM dose was observed over control liposomes or blood pool. (Right) Representative images and regions of interest from FMT imaging of the animals 20 hours post-injection.

"These results, although preliminary, are of great interest as a platform to deliver high payloads of chemotherapy," he said. "We hope that by targeting the cancer we can lower the side effects associated with the drugs." Indeed, early results using gemcitabine-loaded, targeted liposomes are promising. "We were able to deliver more small molecules to the tumor when targeting with Plec-1 than when not targeting with it and we saw some tumor-specific killing," Dr. Kelly added.

Dr. Dowell noted that while chemotherapy is typically given to patients with PDAC to relieve pain and improve quality of life, higher levels of the drugs might increase the possibility of a cure. Targeted agents such as these may also offer the possibility of early detection, he said. "Agents which allow for earlier detection would be useful in screening patients at high risk, such as those with a family history," Dr. Dowell said. "Currently, there are no great ways to screen such patients."

Currently, researchers are working to optimize the technique to allow loading higher doses of drugs and contrast agents onto the liposomes.

No matter what direction his studies take, Dr. Dowell credits the RSNA R&E grant for establishing his career as a researcher and paving the way for further grants. "I'm grateful and honored to be an RSNA grant recipient," Dr. Dowell said. "It has given me great opportunities to extend my research beyond the fellowship stage and continue to develop as a physician-scientist."

"These grants are incredibly important," Dr. Kelly added. "Without them, we wouldn't get funds to do this more risky science. Dr. Dowell could one day prescribe a drug that he created with the help of this grant." □

GRANTS IN ACTION

NAME:

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

GRANT RECEIVED:

\$30,000 Bracco Diagnostics/RSNA Research Resident Grant, 2010

STUDY:

Plectin-1 Targeted Liposomes for Possible Early Detection and Treatment of Pancreatic Adenocarcinoma

CAREER IMPACT:

Dr. Dowell continues to be interested in the early detection and treatment of targeted cancers. Additionally, his educational project, "A Pharmacopeia iPhone/iPad Mobile Communication Application for the Interventional Radiologist" was funded by a 2011-2012 RSNA/AUR/APDR/SCARD Education Research Development Grant. "These RSNA grants have, and will continue to have, an impact on my career and future as I develop as a physician-scientist," Dr. Dowell said.

CLINICAL IMPLICATIONS:

Dr. Dowell's development of the PDAC-targeted imaging agent may allow earlier detection of pancreatic lesions based on molecular signature and serve as a platform for targeted therapies for pancreatic cancer.

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

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A recipient of the 2012 Bracco Diagnostics/RSNA Research Resident Grant, **Andrew Nicholson, M.D.**, a diagnostic radiology resident at Emory University in Atlanta, says his project "In Vivo Imaging of the Neuroprotective Effects of Thrombolytically-Inactive tPA" will serve as the basis for future research. "Thanks to my grant, I have been able to build a strong collaborative relationship between the neuroscience labs and the radiology department at Emory. We have found that tissue Plasminogen Activator (tPA), used for thrombolysis in acute stroke, has neuroprotective properties independent of thrombolysis, and that these properties are modulated by an increased uptake in glucose in the ischemic hemisphere. This research may lead to future clinical investigations into the use of thrombolytically-inactive tPA in treating stroke patients not eligible for traditional tPA therapy."



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Education and Funding Opportunities



RSNA Introduction to Research for International Young Academics

Deadline for nominations—**April 15, 2013**
The RSNA Committee on International Radiology Education (CIRE) seeks nominations for this program that encourages young radiologists from countries outside North America to pursue careers in academic radiology by:

- Introducing residents and fellows to research early in their training
- Demonstrating the importance of research to the practice and future of radiology
- Sharing the excitement and satisfaction of research careers in radiology
- Introducing residents to successful radiology researchers, future colleagues and potential mentors

The program consists of a special four-day seminar held during the RSNA Scientific Assembly and Annual Meeting. CIRE recommends 15 international young academics for consideration by the RSNA Board of Directors each year. Complimentary registration, shared hotel accommodation for the duration of the program and a stipend to help defray travel expenses are awarded to successful candidates.

Eligible candidates are residents and fellows currently in radiology training programs or radiologists not more than two years out of training who are beginning or considering an academic career. Nominations must be made by the candidate's department chairperson or training director. Fluency in English is required.

Nomination forms are available at RSNA.org/IRIYA.

Growing Number of CME, SAMs Certificates Awarded at RSNA 2012, Online

RSNA annual meetings offer the perfect opportunity to earn CME and self-assessment module (SAM) credit. RSNA 2012 was designated for a maximum of 93.75 AMA PRA Category 1 Credits™. At RSNA 2012, a total of 96,692.25 AMA PRA Category 1 Credits™ were awarded to attendees.

An integral part of any physician's Maintenance of Certification (MOC) needs, the American Board of Radiology (ABR) recommends that physicians obtain two SAMs credits per year. At RSNA annual meet-

ings, courses designated for SAM credit include paper tests or an electronic audience response system. RSNA 2012 provided 40 SAM opportunities for physicians and more than 2,300 SAM certifications were issued.

Members can also access RSNA's growing collection of CME and SAMs offerings by visiting RSNA.org/order. Online, members can earn CME credits for activities such as refresher courses, cases of the day, *RadioGraphics* CME tests and more. Courses are free to RSNA members.

Medical Meetings

February-April 2013

FEBRUARY 21-24

American Society of Spine Radiology (ASSR), Annual Symposium, JW Marriott Camelback Inn Scottsdale Resort & Spa, Ariz.
• www.theassr.org

FEBRUARY 24-MARCH 1

Society of Abdominal Radiology (SAR), Annual Meeting, Grand Wailea Resort, Maui, Hawaii
• www.abdominalradiology.org

MARCH 3-7

Healthcare Information and Management Systems Society (HIMSS), Annual Conference and Exhibition, Ernest N. Morial Convention Center, New Orleans
• www.himssconference.org

MARCH 7-11

The European Society of Radiology (ESR), European Congress of Radiology (ECR), Austria Center Vienna
• www.ecr.org

MARCH 8-10

Australian Institute of Radiography (AIR), 10th Annual Scientific Meeting of Medical Imaging and Radiation Therapy, Wrest Point Convention Center, Hobart, Tasmania
• www.air.asn.au/asmirt2013

APRIL 2-6

International Diagnostic Course Davos (IDKD), 45th IDKD 2013 Davos, Musculoskeletal Diseases, Convention Center Davos, Switzerland
• www.idkd.org

APRIL 6-10

American Institute of Ultrasound in Medicine (AIUM), Annual Convention, New York Marriott Marquis Hotel
• www.aium.org

APRIL 6-9

Society of Breast Imaging, 11th Postgraduate Course, Hyatt Regency Century Plaza, Los Angeles
• www.sbi-online.org

APRIL 9-12

Association of University Radiologists (AUR), 61st Annual Meeting, JW Marriott Los Angeles at LA Live
• www.aur.org

APRIL 11-14

Japan Radiological Society (JRS), 72nd Annual Meeting, Pacifico Yokohama, Japan
• www.radiology.jp

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RSNA.org/calendar.aspx

Radiology in Public Focus

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

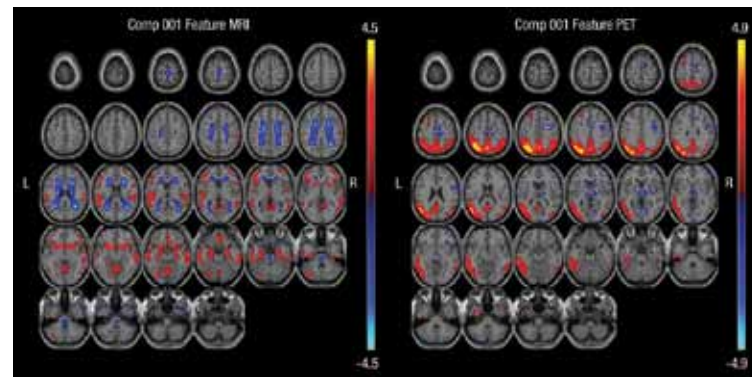
Predicting Cognitive Decline in Subjects at Risk for Alzheimer Disease by Using Combined Cerebrospinal Fluid, MR Imaging, and PET Biomarkers

IMAGING and cerebrospinal fluid (CSF) biomarkers can improve prediction of conversion from mild cognitive impairment (MCI) to Alzheimer disease (AD) compared with predictions based on clinical parameters, according to new research.

Jennifer L. Shaffer, M.D., of Duke University Medical Center, Durham, N.C., and colleagues examined 97 patients with MCI from the Alzheimer Disease Neuroimaging Initiative (ADNI), a national multicenter biomarker study in which patients are followed serially to track disease progression. MR imaging-derived gray matter probability maps and FDG PET images were analyzed by using independent component analysis, an unbiased data-driven method to extract independent sources of information from whole-brain data.

Combining MR imaging, FDG PET, and CSF data with routine clinical tests significantly increased the accuracy of predicting conversion to AD compared with clinical testing alone. The misclassification rate decreased from 41.3 percent to 28.4 percent, results showed.

“Among these three imaging and molecular biomarkers, FDG PET appears to be the primary contributor, with misclassification rates for FDG PET, MR imaging, and CSF compared with clinical variables alone of 27.2 percent ($P = .00001$), 39.2 percent ($P = .08$), and 39.6 percent ($P = .32$), respectively,” the authors concluded.



Example components from separate ICAs. Z threshold was 1.5. Both components significantly differentiated converters from nonconverters. Left: The MR imaging component (Comp) highlights in red the bilateral medial temporal lobes, inferior and lateral temporal lobes, and anterior and inferior frontal lobes, consistent with atrophy in these regions in converters. Negative signal, noted in blue, is seen in the periventricular white matter, consistent with higher levels of white matter disease in converters. Right: The FDG PET component highlights in red the temporoparietal lobes, right greater than left, and the posterior cingulate region, consistent with hypometabolism in these regions in converters.

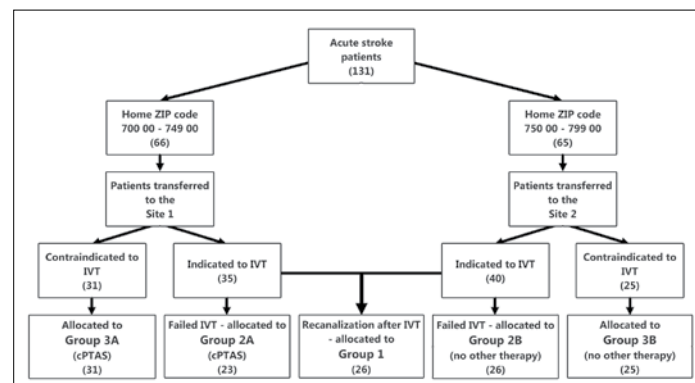
(*Radiology* 2013;266:2:583-591) ©RSNA, 2013. All rights reserved. Printed with permission.

A Controlled Trial of Revascularization in Acute Stroke

INTRAArTERIAL REvascularization with stents was an effective and safe treatment option in patients with acute middle cerebral artery (MCA) occlusion with contraindication to intravenous thrombolysis (IVT) or after IVT failure, according to the results of a controlled trial.

Martin Roubec, M.D., Ph.D., of Ostrava University and University Hospital Ostrava, examined 131 patients (74 men and 57 women) with acute ischemic stroke (AIS) due to MCA occlusion; 75 underwent IVT. No further recanalization therapy was performed in 26 (35 percent) of IVT-treated patients with MCA recanalization. Patients with IVT failure after 60 minutes were allocated to endovascular treatment or no further therapy. Patients with contraindication to IVT were allocated to endovascular treatment within eight hours of AIS onset or to no recanalization therapy. Neurologic deficit at admission, MCA recanalization, symptomatic intracerebral hemorrhage and three-month clinical outcome were evaluated.

Results showed intraarterial revascularization with the use of stents is an effective and safe therapeutic method for patients with AIS, with a 92.6 percent recanalization rate; it had a favorable clinical outcome for 43.5 percent of those with IVT failure and for 45.2 percent with contraindication to IVT, with a 4 percent risk of symptomatic intracerebral hemorrhage.



Study flowchart. (*Radiology* 2013;266:3) ©RSNA, 2013. All rights reserved. Printed with permission.

“Cerebral PTA with stent placement seems to be a safe endovascular therapeutic method for patients with acute ischemic stroke and might be effective both in patients with MCA occlusion after IVT failure and in patients with contraindication to IVT,” the authors write. “Nevertheless, the safety and efficacy of cerebral PTA with stent placement, as endovascular method, needs to be compared directly with IVT and/or other conservative treatment within the same time window by a prospective randomized trial.”

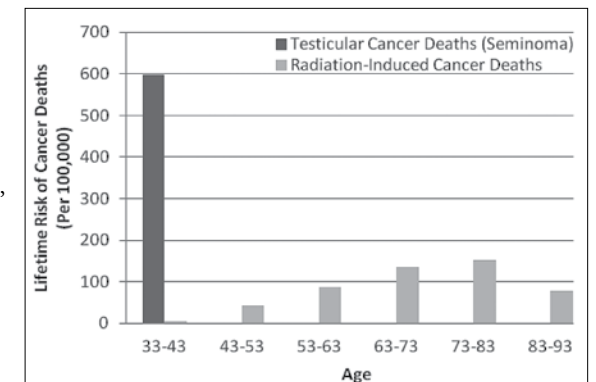
Patients with Testicular Cancer Undergoing CT Surveillance Demonstrate a Pitfall of Radiation-induced Cancer Risk Estimates: The Timing Paradox

LIFETIME radiation risk estimates, when used for decision making, may overemphasize radiation-induced cancer risks relative to short-term health risks, new research shows.

Pari V. Pandharipande, M.D., M.P.H., of the Massachusetts General Hospital Institute for Technology Assessment, and colleagues developed a Markov model to project outcomes in patients with testicular cancer undergoing CT surveillance in the decade after orchiectomy. To quantify effects of early versus delayed risks, life expectancy losses and lifetime mortality risks due to radiation-induced cancers from CT. Projections of life expectancy loss—unlike lifetime risk estimates—account for the timing of risks over the course of a lifetime, which enabled evaluation of the described limitation of lifetime risk estimates.

Researchers projected that 33-year-old men with early-stage cancer who undergo CT surveillance incur a slightly higher lifetime mortality risk from testicular cancer (598 per 100,000; 95 percent uncertainty interval [UI]: 302, 894) than from radiation-induced cancers (505 per 100,000; 95 percent UI: 280, 730). However, life expectancy loss attributable to testicular cancer (83 days; 95 percent UI: 42, 124) was more than three times greater than life expectancy loss attributable to radiation-induced cancers (24 days; 95 percent UI: 13, 35).

“Lifetime risk metrics do not account for the delayed timing of radiation-induced cancers over the course of a patient’s lifetime; as a result, radiation-induced cancer risks may be overemphasized relative to more immediate health risks in many clinical settings,” the authors write.



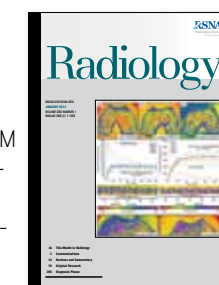
Graph shows relative timing of deaths due to testicular cancer versus radiation-induced cancers. Testicular cancer risks predominate immediately after orchiectomy; radiation-induced cancer risks peak in the 7th–8th decades of life. If weighing lifetime mortality risk metrics only—and thereby disregarding the timing of such risks—one would compare the black bar (representative of testicular cancer deaths) against all gray bars combined (representative of radiation-induced cancer deaths). This type of comparison would make these risks seem more “equal” than they are.

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Media Coverage of RSNA

In November, media outlets carried 603 RSNA-related news stories. These stories reached an estimated 391 million people.

Print coverage included *Chicago Tribune*, *The Florida Times-Union*, *The Star-Ledger* (Newark, N.J.) and *The Bellingham Herald* (Wash.). Broadcast coverage included WGN-AM (Chicago), WWJ-TV (Detroit), WFSB-TV (Hartford, Conn.), KWTW-TV (Oklahoma City, Okla.) and KIMT-TV (Rochester, Minn.). Online coverage included Yahoo! News, *TIME*, Reuters, *Boston Globe*, *Houston Chronicle*, *Boston Herald*, *Denver Post*, *San Francisco Chronicle* and *Examiner.com*.



New on *RadiologyInfo.org*

Visit *RadiologyInfo.org*, RSNA and ACR’s jointly-sponsored public information website, today to read the latest procedure description posted on the site: Abnormal Vaginal Bleeding. Visit RadiologyInfo.org/en/info.cfm?pg=vaginalbleeding.

FEBRUARY OUTREACH ACTIVITIES FOCUS ON CORONARY CTA

In February, RSNA is distributing the “60-Second Checkup” audio program to nearly 100 radio stations across the U.S. The segments focus on how coronary CTA could benefit patients who present with chest pains in the emergency department.

RadiologyInfo.org App Now Available

RadiologyInfo.org, the RSNA/American College of Radiology public information website, recently launched its Patient Safety in Imaging app for tablet devices and iPhones. The app offers information related to numerous safety topics including radiation dose, radiation safety for pediatric patients and CT/MR during pregnancy. The app contains 18 videos to help illustrate content.

Download the easy-to-navigate app for iPad, iPhone and Android tablets at:

- Google Play: play.google.com/store/apps/details?id=org.rsna.radiologyinfo
- iTunes: itunes.apple.com/us/app/radiologyinfo.org/id572550481?mt=8



Journal Highlights

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

Interventional Oncologic Approaches to Liver Metastases

Image-guided interventional techniques are powerful tools in the management of secondary liver malignancies. These approaches aim to either to allow patients with unresectable tumors to become surgical candidates, provide curative treatment options in nonsurgical candidates or improve survival in a palliative or even curative approach.

In a State-of-the-Art Review and Commentary in the February issue of *Radiology* (RSNA.org/Radiology), Andreas H. Mahnken, M.D., M.B.A., M.M.E., E.B.I.R., and colleagues review the rationale, application and clinical results of each of these techniques on the basis of the current literature and discuss future prospects such as gene therapy and immunotherapy. Specifically, the authors discuss:

- Portal vein embolization
- Hepatic artery infusion chemotherapy
- Transarterial chemoembolization
- Radioembolization
- Radiofrequency ablation

"With modern ablation techniques such as microwave ablation on their way to routine practice and highly innovative techniques such as intraarterial gene therapy in very early stages of development, interventional oncology will gain further ground in the treatment of liver metastases," the authors conclude.

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

US Appearance of Ductal Carcinoma in Situ

Ductal carcinoma in situ (DCIS), which accounts for 25 percent of all breast cancers diagnosed in the U.S., can have a variable appearance at ultrasound. Advances in ultrasound have improved the ability not only to characterize mammographic masses and asymmetries but also to detect calcifications. Because of increased implementation of ultrasound for screening and for targeted evaluation of breast MR imaging abnormalities, recognizing the ultrasound features of DCIS has become increasingly important.

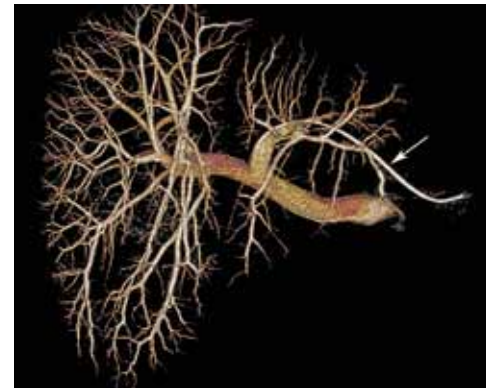
In an article in the January-February issue of *RadioGraphics* (RSNA.org/RadioGraphics), Lilian C. Wang, M.D., of Northwestern Memorial Hospital, Northwestern University, Chicago, and colleagues discuss the ultrasound features of calcified DCIS, noncalcified DCIS and DCIS diagnosed at MR imaging-directed ("second-look") ultrasound. Optimal imaging techniques, relevant pathologic findings and the diagnostic utility of ultrasound in the detection of DCIS are also discussed by authors.

Ultrasound features are nonspecific and careful correlation with respect to lesion location, size, shape and depth is needed, according to the authors. The presence of internal vascularity can help increase the positive predictive value of ultrasound in this setting.

"With improved technology and the increased use of ultrasound and MR imaging, recognizing the ultrasound features of DCIS will become increasingly important for the detection of early-stage breast cancer," the authors write.

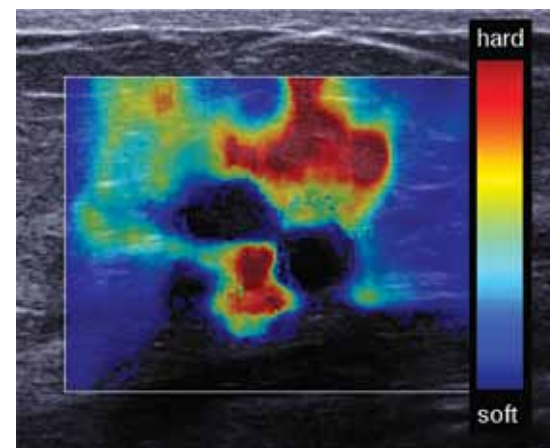
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Radiology



A 3D portogram obtained via 5-F catheter inserted through left PV branch (arrow) shows usual PV anatomy in a patient scheduled for right PVE.

(*RadioGraphics* 2013;266;2:407-430) ©RSNA, 2013. All rights reserved. Printed with permission



Noncalcified grade 1 cribriform DCIS in an 82-year-old woman who presented with a palpable mass that was diagnosed as invasive ductal carcinoma. Shear-wave elastographic image demonstrates diffuse stiffness of the surrounding tissue, a finding that may represent desmoplastic reaction.

(*RadioGraphics* 2013;33;2:13-228) ©RSNA, 2013. All rights reserved. Printed with permission

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RSNA Offers Affordable Membership as Residents Transition into Practice

Residents and fellows transitioning into practice will likely find one incentive for maintaining their RSNA membership hard to pass up: reduced rates.

While members-in-training receive free RSNA membership, members transitioning from training qualify for greatly reduced rates during their first and second years of practice—just \$100 in year one and \$200 in year two. It is not until the third year of practice that transitioning members pay standard membership dues.

This RSNA benefit gives individuals time to settle into the profession before paying full membership dues. Under the program, residents receive all the benefits of full membership,

including subscriptions to *Radiology*, *RadioGraphics* and *RSNA News*, free admission (with advance registration) to the annual meeting and free access to online CME opportunities.

For more information about transitioning rates, contact the Membership Department at 1-877-RSNA-MEM (1-877-776-2636) or membership@rsna.org.



Residents & Fellows Corner

Roentgen Award Nominations Being Accepted

NOMINATIONS are being accepted now for the RSNA Roentgen Resident/Fellow Research Award, recognizing residents and fellows who have contributed significantly to advancing their departments through research as evidenced by presentations and publications of scientific papers, receipt of research grants or other contributions. One resident or fellow per ACGME-approved program can be nominated by the program director or department chair.

The RSNA Research & Education (R&E) Foundation provides an award plaque for the department to display and a personalized award to present to the selected resident or fellow. The nomination deadline is April 1. Learn about the nomination process and see a list of past recipients at RSNA.org/Roentgen_Research_Award.aspx.



Alex C. Whitley, M.D., Ph.D., (right), received his 2012 RSNA Roentgen Research Award from program director O.L. Burnett III, M.D.

Annual Meeting Watch

RSNA 2013 Online Abstract Submission Now Open

The online system to submit abstracts for RSNA 2013 is now active. The submission deadline is 12 p.m. Central Time on Wednesday, April 10, 2013. Abstracts are required for scientific presentations, education exhibits, applied science and quality storyboards.

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

The easy-to-use online system helps the Scientific Program Committee and Education Exhibits 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.

Attendance Healthy at RSNA 2012

Despite a slow economy, attendance at RSNA 2012 remained vigorous. Final numbers show a total attendance of 53,778 including 26,154 professional attendees, 21,288 exhibitors and 6,336 attendees classified as “guest” or “other.” Thirty-six percent of professional attendees were from outside North America. The RSNA 2012 Virtual Meeting attracted more than 6,000 attendees from 107 countries.

Important Dates for RSNA 2013

- April 10:** 2013 Call for abstracts deadline
- May 8:** Member registration and housing open
- June 5:** Non-member registration and housing open
- July 10:** Course enrollment opens
- October 25:** International deadline to have full conference badge mailed
- November 8:** Final housing and discounted registration deadline
- November 27:** Deadline to guarantee a seat for all ticketed courses
- December 1-6:** 99th Scientific Assembly & Annual Meeting



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RSNA.org

Web Portal Helps Users Show 'Radiology Cares'

Coinciding with the recent launch of Radiology Cares—a new RSNA initiative rallying radiologists to align their practices with their patients' needs and best interests—RadiologyCares.org is your one-stop portal for tools, resources and information aimed at helping radiologists transform patient-centered care from a concept into practice.

Located under Science & Education on RSNA.org, RadiologyCares.org features access to a wide variety of resources related to patient-centered care, including:

- ▶ **Education Toolkit:** Your index to literature about the movement to become patient-centered, from experts, scientific journals, medical trade publications and mainstream consumer media.
- ▶ **Presentation Toolkit:** Customizable PowerPoint presentation decks to help you convey the importance of radiologists being patient-centered to your colleagues and communities.
- ▶ **RadiologyInfo.org:** Direct your patients to RadiologyInfo.org for information on radiology procedures, treatments and therapies.
- ▶ **Contact:** RadiologyCares@rsna.org with questions/comments about the campaign or to share your patient-centered activities.

The page also features an entertaining, three-episode video series, “Radiology Cares: The Untold Future,” illustrating why you want to become more visible to your patients.

Users are also invited to “Take the Pledge” to communicate more effectively with their patients and other healthcare providers, ultimately to help patients participate in informed decision making regarding their healthcare. The page posts a current tally of total pledges.

COMING NEXT MONTH

Read about the impact on radiology of the new Medicare payment rates that include payment cuts under the sustainable growth rate (SGR) formula and expansion of the multiple procedure payment reduction.



CALL FOR ABSTRACTS

DO YOU WANT TO PRESENT AT RSNA 2013? SUBMIT ABSTRACTS FOR SCIENTIFIC PRESENTATIONS, APPLIED SCIENCE, EDUCATION EXHIBITS, QUALITY STORYBOARDS, AND QUANTITATIVE IMAGING READING ROOM SHOWCASE.

DEADLINE: WEDNESDAY, APRIL 10, 2013

12:00 NOON CHICAGO TIME

SUBMIT ONLINE: RSNA.ORG/ABSTRACTS

Questions? Call 1-877-776-2227 (within U.S.) or 1-630-590-7774 (outside U.S.)

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