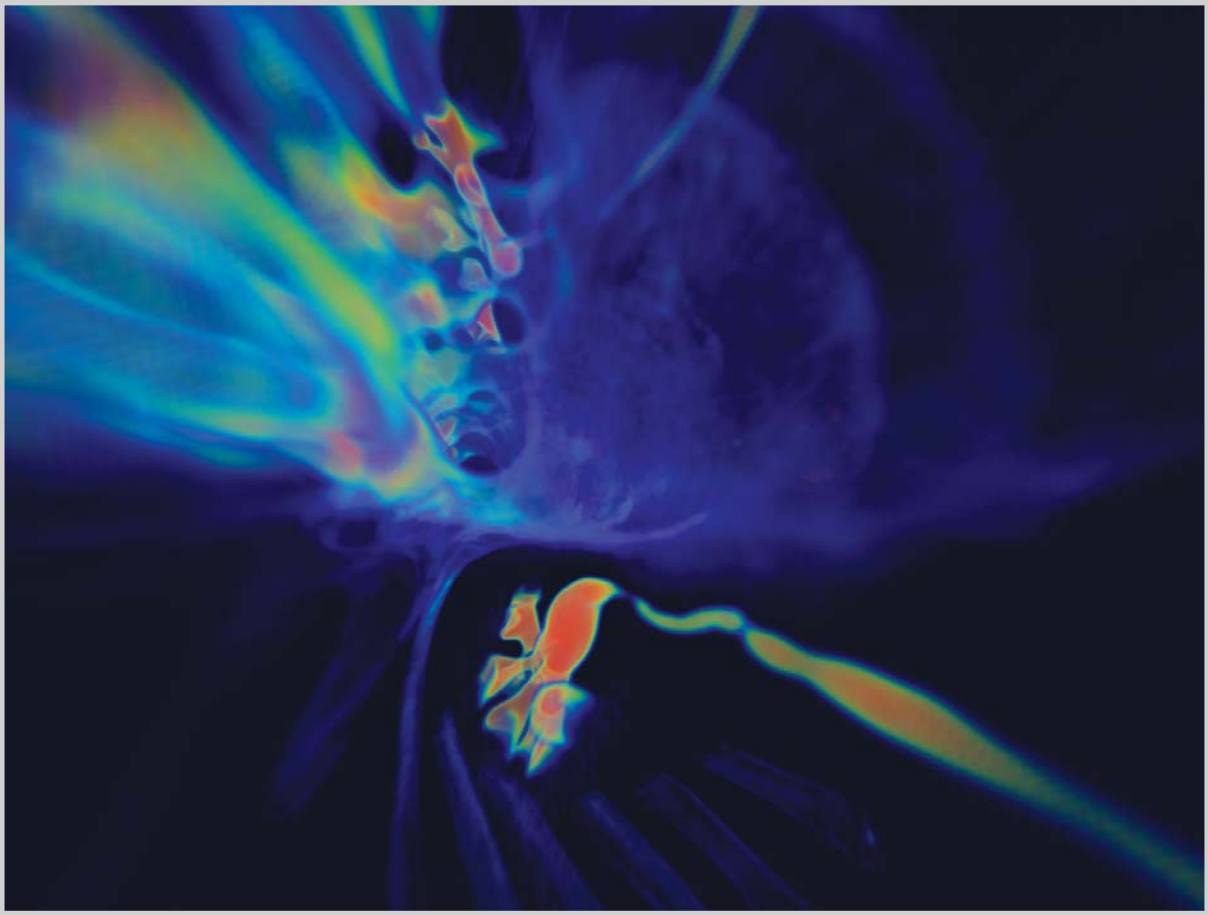
RSNA News™

November 2010 Volume 20, Number 11



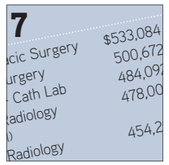
CT Artwork Offers Unique Slice of Radiology

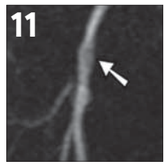
ALSO INSIDE:

RSNA 2010
November 28 – December 3

CELEBRATING 20 YEARS

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





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RSNA Members Inducted into IOM

The Institute of Medicine (IOM) inducted three RSNA members into its ranks this October: **Maximilian F. Reiser, M.D.,** a professor of radiology and chair of the Department of Clinical Radiology at Ludwig Maximilian University in Munich; **Ralph Weissleder, M.D., Ph.D.,** a professor of systems biology and radiology at Harvard Medical School; and **Richard L. Ehman, M.D.,** a professor of radiology at Mayo Clinic in Rochester, Minn.

In all, five foreign associates and 65 new members were inducted during the Institute's 2010 annual meeting.

The first radiologist elected as an IOM foreign associate, Dr. Reiser is a 2008 RSNA Honorary Member and serves on the RSNA Public Information Advisors Network.

Dr. Weissleder is a director of the Center for Systems Biology at Massachusetts General Hospital in Boston. Dr. Weissleder received the 2008 RSNA Outstanding Researcher Award and is a past-chair of the RSNA Molecular Imaging Committee.

Dr. Ehman, known for his research into nuclear MR, received the 2006 RSNA Outstanding Researcher Award. He chairs the RSNA Research Development Committee and is a member of the RSNA Research & Education Foundation Board of Trustees.

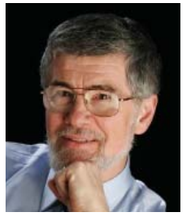
(from left) **Institute of Medicine (IOM) President Harvey V. Fineberg, M.D., Ph.D., Maximilian F. Reiser, M.D., RSNA President Hedvig Hricak, M.D., Ph.D., Dr. h.c., and Ralph Weissleder, M.D., Ph.D., celebrated the inauguration of 2009 IOM members and foreign associates at IOM's 40th annual meeting in October. Election to the IOM is considered one of the highest honors in the fields of health and medicine and recognizes individuals who have demonstrated outstanding professional achievement and commitment to service. Not pictured: Richard L. Ehman, M.D.**

AAPM Bestows Awards

The American Association of Physicists in Medicine (AAPM) presented awards at its recent annual meeting.

David W.O. Rogers, Ph.D., the Canada Research Chair in Medical Physics who heads the Carleton Laboratory for Radiotherapy Physics in Ottawa, received the William D. Coolidge Award, the association's highest honor. After receiving his Ph.D. in experimental nuclear physics from the University of Toronto in 1972, Dr. Rogers joined what is now the National Research Council's Ionizing Radiation Standards Group that provides Canada's national calibration service for instruments that measure ionizing radiation. He became group leader in 1984 and held that position until 2003, when he moved to Carleton.

The Award for Achievement in Medical Physics was presented to Benjamin R. Archer, Ph.D., and Laurence P. Clarke, Ph.D. Dr. Archer is a professor of radiological science at Baylor College of Medicine in Houston where he has served for more than 35 years. Since 1999, Dr. Clarke has served as the branch chief for imaging technology development in the Cancer Imaging Program at the National Cancer Institute in Bethesda, Md.



Rogers

Clarke

Radiology, Nuclear Medicine Represented on Isotopes Committee

The U.S. Nuclear Regulatory Commission has named **Christopher J. Palestro, M.D.,** as the nuclear medicine physician and **Milton J. Guiberteau, M.D.,** as the diagnostic radiologist representatives on the Advisory Committee on the Medical Uses of Isotopes (ACMUI).

Dr. Palestro is chief of the division of nuclear medicine and molecular imaging of the North Shore Long Island Jewish Health System and a professor of radiology at the Hofstra University School of Medicine. Dr. Palestro is a *Radiology* associate editor and a manuscript reviewer for *Radiology* and *RadioGraphics*.

Dr. Guiberteau currently serves as academic chief of radiology, chief of nuclear medicine and chief of women's imaging at St. Joseph Medical Center in Houston and is a member of the medical staffs at CHRISTUS St. John and St. Catherine Hospitals. He also serves as a professor of clinical diagnostic radiology and nuclear medicine at the University of Texas Medical School-Houston. Dr. Guiberteau is a past-chair of the nuclear medicine subcommittee of the RSNA Scientific Program Committee and serves on the RSNA Public Information Advisors Network and the RSNA-ACR Public Information Website Committee *(RadiologyInfo.org)*.

The ACMUI was established in 1958 and advises the NRC on policy and technical issues related to the regulation of the medical uses of radioactive material.

INTERNATIONAL VISITING PROFESSOR TEAMS NAMED

The RSNA Board of Directors has announced the teams of International Visiting Professors (IVP) for 2011. The professors and their destinations are:

LITHUANIA

Ricardo D. Cury, M.D.
Massachusetts General Hospital, Boston

Manohar M. Shroff, M.D., D.M.R.D.
Hospital for Sick Children, Toronto

MALAYSIA

Andrea S. Doria, M.D.
Hospital for Sick Children, Toronto

John P. McGahan, M.D.
University of California, Davis Medical Center, Sacramento

David M. Yousem, M.D.
Johns Hopkins Hospital, Baltimore

MYANMAR

Thomas B. Kinney, M.D., M.S.M.E.
University of California, San Diego Medical Center

Jeffrey J. Peterson, M.D.
Mayo Clinic, Jacksonville, Fla.

Howard A. Rowley, M.A., M.D.
University of Wisconsin, Madison

MEXICO
(In cooperation with the Federación Mexicana de Radiología e Imagen A.C.)

Jonathan M. Rubin, M.D., Ph.D.
University of Michigan, Ann Arbor

Annina N. Wilkes, M.D.
Thomas Jefferson University Hospital, Philadelphia

For more information about the IVP Program, go to *RSNA.org/International/CIRE/ivpp.cfm*. An article about the IVP team that traveled to Brazil in 2010 will appear in the February 2011 issue of *RSNA News*.

My Turn

Shaping the Golden Age of Radiology

Receiving the RSNA Gold Medal in 2009 was a deeply profound moment in my life. The award is so meaningful because it directly connects me to a long line of RSNA Gold Medalists who were leaders in radiology during my career and long before it began.

Among them: RSNA's 1983 Gold Medal recipient, Alexander R. Margulis, M.D., my mentor and chair of the Department of Radiology at the University of California, San Francisco (UCSF) during the time I was a resident and fellow, and Herbert L. Abrams, M.D., RSNA's 1995 Gold Medal recipient, who served as director of diagnostic radiology at Stanford before becoming chair of the Department of Radiology at Brigham and Women's Hospital in Boston.

This honor is a link to pioneers from past generations who shaped our discipline through their efforts, such as my father, Norman Glazer, M.D., one of the early U.S. pediatric radiologists and a founding member of the Society for Pediatric Radiology. He would be so proud that his son was awarded the RSNA Gold Medal. Evidently, this love for radiology permeates the Glazer family as my oldest son, Daniel Glazer, M.D., is now a resident at the University of Michigan, where I began my faculty career.

That long list of RSNA Gold Medal winners dating back to 1919 also includes world-renowned physicians who have shaped the course of medicine throughout the world. Three such luminaries—Mme. Marie Curie, the 1922 RSNA Gold Medal winner, Paul C. Lauterbur, Ph.D., the 1987 gold medalist, and Godfrey Hounsfield, D.Sc., awarded the RSNA Gold Medal in 1980—went on to capture Nobel Prizes for their remarkable work.

Currently, the Gold Medal connects me to a larger web of contemporaries, including the radiologists who I trained under at UCSF; the faculty who worked side-by-side with me at the University of Michigan when I was a young faculty member; and my colleagues who helped me build the Stanford Department of Radiology over the past decades. I have also been privileged to work with so many outstanding radiologists in Europe and Asia as well as leaders of industry to advance imaging and to help shape this Golden Age in Radiology.

As we prepare to induct three new gold medalists into the RSNA annals at this month's annual meeting, let us reflect on the long list of physicians whose accomplishments not only earned them this prestigious connection, but helped define radiology as we know it today and set the course for the specialty's future.

Gary Glazer, M.D., is the Emma Pfeiffer Merner Professor in the Medical Sciences and chair of the Department of Radiology at Stanford University School of Medicine in California.

For a complete list of RSNA Gold Medal winners, go to *RSNA.org/About/history/honorees.cfm*.

IN MEMORIAM

Alexander Gottschalk

Alexander Gottschalk, a pioneering researcher and author who helped to shape modern medical imaging, died on Oct. 5. He was 78.

An innovative scientist, clinician and educator, Dr. Gottschalk worked with the first clinically useful prototype Anger scintillation camera and performed the first dynamic camera studies of the brain and heart using technetium-99m and the first dynamic camera studies of the kidneys. Dr. Gottschalk served as one of the principal investigators in the landmark Prospective Investigation of Pulmonary Embolism Diagnosis (PIOPED) study.

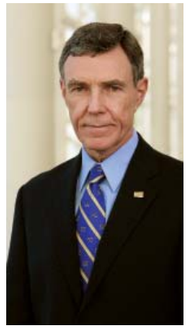
Most recently a professor of diagnostic radiology at Michigan State University in East Lansing, Dr. Gottschalk began his career as a research associate at Donner Laboratory at Lawrence Radiation Lab at the University of California, Berkeley. After a decade at the University of Chicago where he helped form the university's first section of nuclear medicine, Dr. Gottschalk moved to Yale University School of Medicine, serving as director of the section of nuclear medicine, vice-chair of the Department of Diagnostic Radiology and director of the diagnostic radiology residency program.

An RSNA member since 1965, Dr. Gottschalk served as an RSNA second vice-president and chair of the nuclear medicine subcommittee of the RSNA Scientific Program Committee. He was awarded the RSNA Gold Medal in 2004.

During his long and distinguished career, Dr. Gottschalk served as president of the Society of Nuclear Medicine, the Association of University Radiologists and the Fleischner Society and on national committees for the U.S. Food and Drug Administration, the National Institute of General Medicine Sciences and the Accreditation Council for Graduate Medical Education.

A dedicated researcher, Dr. Gottschalk authored or coauthored nearly 400 publications. For a decade, he was editor-in-chief of the *Yearbook of Nuclear Medicine*.

Dunnick Named ASTRO Honorary Member



RSNA Board Liaison for Science N. Reed Dunnick, M.D., has been named a 2010 Honorary Member of the American Society for Radiation Oncology (ASTRO), the highest honor the Society bestows upon distinguished cancer researchers and leaders in disciplines other than radiation oncology, radiation physics or radiobiology. Dr. Dunnick was recognized at ASTRO's recent annual meeting.

Currently the Fred Jenner Hodges Professor and chair of the Department of Radiology at the University of Michigan in Ann Arbor, Dr. Dunnick previously held academic appointments at Duke University Medical Center in Durham, N.C., the National Institutes of Health in Bethesda, Md., and Stanford University School of Medicine in Stanford, Calif. The current American Board of Radiology president, Dr. Dunnick is a past-president of the Academy of Radiology Research, American Roentgen Ray Society (ARRS), Association of University Radiologists, Michigan Radiological Society and the Society of Uroradiology (SUR).

Dr. Dunnick's accolades include the Gold Medal for Distinguished Service from ARRS and the SUR Gold Medal. Dr. Dunnick serves as a reviewer for *Radiology*.

RSNA Joins Effort to Stop Medicare Cuts

RSNA is among 65 national physician organizations to sign on to an effort, led by the American Medical Association, calling on Congress to take immediate action to stop the 30 percent Medicare payment cuts slated for the end of 2010.

Signatory organizations of a recent letter to Congress also included medical societies representing 50 states and the District of Columbia. The letter notes that the Preservation of Access to Care for Medicare Beneficiaries and Pension Relief Act of 2010 stabilized Medicare physician payments only until November 30—after that date, Medicare and TRICARE payments for physician services will be cut by more than 23 percent, with another 6.5 percent cut to follow on January 1, 2011.

Physician practices simply cannot absorb cuts of this magnitude in programs as important as Medicare and TRICARE, the letter states. "Congress must break the cycle of forestalling a crisis in patient access to physician care for only a few months at a time, and take action on legislation to provide stability and predictability for the program at least through 2011."

Read the letter to Congress in its entirety at *www.ama-assn.org*.

Numbers in the News

3.7

Percent increase in the median salary of diagnostic radiologists in 2009, to $454,205, according to a recent survey. Interventional radiologists reported a median salary of $478,000, representing no increase at all from the year before. (See "Radiology Salaries Remained Flat in 2009," Page 7.)

15.3

Average reduction, in hours, in report turnaround time among a group of radiologists using speech recognition software. Despite these findings, however, more physicians must "buy in" to the software and undergo the necessary training to maximize its effectiveness, according to researchers. (See "Human Factor Critical to Speech Recognition Technology Success," Page 9.)

28.8

Total, in millions of dollars, of grants awarded recently by the Agency for Healthcare Research to three past recipients of RSNA Research & Education (R&E) Foundation funding. (See "Former R&E Grant Recipients Receive HHS Grants," Page 15.)

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Patients at risk for Type 2 Diabetes who underwent MR imaging and MR spectroscopy to assess visceral adipose tissue and hepatic lipids, as part of a study published in this month's issue of *Radiology*. Researchers found that both measurements are predictive factors for improving insulin sensitivity and can be significantly reduced during lifestyle intervention. (See "Radiology in Public Focus," Page 16.)

RSNA 2009 NAMED AMONG GOLD 100

Along with ranking 32nd among "the 100 shows in 2009 that set the gold standard for the trade show industry" by *Trade Show Executive* magazine, RSNA 2009 also received the magazine's "Highest Economic Impact of 2009," award for its $123 million impact on Chicago's local economy. The magazine honored the organizers of the 100 largest trade shows at a September summit held in Laguna Niguel, Calif.

RadiologyInfo.org™ Wins Award

On the heels of its recent redesign, the *RadiologyInfo.org*™ public information website has received a Medical Standard of Excellence Award for Outstanding Achievement in Web Development from the Web Marketing Association.

RadiologyInfo.org is a joint project of RSNA and the American College of Radiology. In addition to a new look and simplified navigational tools, *RadiologyInfo.org* now offers more video presentations to enhance explanation of radiology procedures and a version of the website for mobile devices. Users can sign up to receive updates about new developments, safety updates and more. In addition, pediatric content throughout the site is now identified with a special icon.

RadiologyInfo.org draws more than 600,000 visitors a month and is available in Spanish.

RadiologyInfo.org
The radiology information resource for patients

RSNA Board of Directors Report

At its September meeting, the RSNA Board of Directors approved discounted rates for RSNA members serving in the U.S. military, as well as members living in developing countries. The Board also appointed volunteers to RSNA committees for the coming year.

Discounted Membership Rates Offered

In recognition of certain RSNA members who want to keep their membership current, but whose circumstances pose a challenge, the Board voted to discount some member dues. RSNA members who are currently serving in the U.S. military and are deployed overseas will pay only half the regular rate during deployment.

RSNA members in developing nations will also pay a reduced rate to receive access to all online member benefits, including *Radiology* and *RadioGraphics*. Printed copies of the journals and RSNA News are not included, nor is free registration for the annual meeting.

Questions about the new membership rates can be directed to the RSNA Membership Department, *membership@rsna.org*, 1-877-RSNA-MEM (776-2636) or 1-630-571-7873 (outside the U.S. or Canada). More information is also available at *RSNA.org/membership*.

R&E Officers, Trustees Named

The Board appointed 2010 RSNA President Hedvig Hricak, M.D., Ph.D., Dr. h.c, as treasurer of the 2011 R&E Foundation Board of Trustees and E. Russell Ritenour, Ph.D., as secretary. The board named Gregory C. Karnaze, M.D., and Thomas N. McCausland as new trustees.

The Board also approved appointments to RSNA's many committees, in consultation with the committee chairs. The Board thanks the hundreds of exceptional and dedicated volunteers who help RSNA to meet its mission.

Point of Care CME Offered

A new feature on myRSNA® allows RSNA members to earn CME credit as a result of researching procedures in the course of their work. RSNA's new Point of Care (PoC) online tracking mechanism meets the American Medical Association (AMA) guidelines for the three-step PoC learning cycle, ensuring that physicians can properly claim *AMA PRA Category 1 Credit*™.

To take advantage of PoC CME, members use the mySearch function on myRSNA to research a clinical question, then select the most relevant literature from resources identified on the PoC CME tab. Clicking the PoC link and answering every question after reading the article(s) allows the user to obtain CME credit.

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

IHE® Representatives Named

The Board continued RSNA's longstanding support of the Integrating the Healthcare Enterprise (IHE®) project by appointing David S. Mendelson, M.D., as RSNA representative to the IHE International board and Dr. Mendelson, David Avrin, M.D., and RSNA Assistant Executive Director for Scientific Assembly and Informatics Steve Drew as RSNA representatives to the IHE USA board. Established more than a decade ago by RSNA and the Healthcare Information and Management Systems Society (HIMSS), IHE seeks to improve patient care by standardizing the way health systems exchange information.

Education Initiatives Supported

RSNA is a charter member of the Image Wisely™ campaign to increase understanding of adult radiation protection among radiologists, referring practitioners, medical physicists and radiologic technologists. The Board approved the proposed three-step process for an individual to fully participate in Image Wisely: signing a pledge, pursuing accreditation and participating in a dose registry. RSNA attendees can sign the Image Wisely pledge at one of three locations at RSNA 2010. See Page 25 for more information.

In addition, the Board approved funding to update the radiobiology educational program for radiology residents on *RSNA.org*.

RSNA 2011 Clustered Programming Pilot Approved

With the RSNA 2010 opening session just weeks away, the Board is already starting to plan for RSNA 2011. Among the new offerings slated for next year is a pilot of clustered programming in pediatric radiology. All pediatric content—refresher and multisession courses and oral and digital presentations—will be offered in a designated area of McCormick Place, allowing for intense study with no need to travel between nonadjacent halls and classrooms. More information will be published in RSNA 2011 meeting materials and on the RSNA 2011 website.

I'm excited about what's in store for next year, but even more excited about what's right around the corner. I look forward to seeing all of you at this year's annual meeting.

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

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CT Artwork Offers Unique Slice of Radiology

Exploring interior views of the human body inspired Kai-hung Fung, M.B.B.S., F.R.C.R., to apply that one-of-a-kind perspective to creating radiology artwork that has captured the imagination of artists, scientists and the public at large since 2003.

"I IMAGINE MYSELF as a traveler in virtual space, visiting every corner of the human anatomy and exploring the beautiful scenery that Mother Nature has created in normal and diseased states," said Dr. Fung, a diagnostic radiologist at Pamela Youde Nethersole Eastern Hospital in Hong Kong. "There are so many anatomical variants one can explore using this method. Individuals may look similar, but humans differ from one another in detail."

Dr. Fung is one among several artists who use radiologic images to create art, enchanting physicians and non-physicians alike.

Using images of the human body based on data acquired from CT scanners, Dr. Fung creates artwork that has grown in scope and reputation since its debut seven years ago. Since 2008, Dr. Fung's work has been featured regularly in the Illuminations section of *RadioGraphics* (see sidebar). For example, the July 2010 issue featured Dr. Fung's image "Van Gogh Remembered," which uses a 3D CT rendering of an aortic stent-graft to capture the deep colors and rich textures made legendary in the Dutch artist's sunflower paintings. "Imagine the joy van Gogh would have experienced with digital media and all of its possibilities!" proclaims the legend under the image.

The innovative artwork has left a lasting impression on the journal and its readers, according to *RadioGraphics* Editor William W. Olmsted, M.D. "Dr. Fung's beautiful clinical artwork contributes immensely to the look and appeal of *RadioGraphics*," Dr. Olmsted said.

In just a few short years, the list of publications featuring Dr. Fung's artwork has grown to include *Radiologic Technology, Leonardo, GEO, Discover* and *Vanity Fair.* His artwork has also been featured in museums including the Hong Kong Art Museum, William Benton Museum of Art in Storrs, Connecticut, the American University Museum Katzen Arts Center in Washington and the New York Hall of Science. The artwork is not for sale but is available for charity purposes.

Fung

Stuelke

"Stepping artifacts are well known in 3D reconstruction because we have to stack up multiple cross-sectional slices to create the 3D image," Dr. Fung explained. "The thicker the slice, the more obtrusive the artifact. Although most software developers try to avoid these artifacts by smoothing out the surface, I found that the resulting contour line effect is quite interesting and contributes to creative 3D representation; therefore I tried my best to enhance it. By converting each contour line into a rainbow with many colors, I created the 'rainbow technique.'

> "I imagine myself as a traveler in virtual space, visiting every corner of the human anatomy and exploring the beautiful scenery that Mother Nature has created both in normal and diseased states."
>
> **Kai-hung Fung, M.B.B.S., F.R.C.R.**

3D Image has Rainbow Connection

In 2007, Dr. Fung created an award-winning artwork using 3D CT of the human nose and paranasal sinuses along with a special rendering method known as the "rainbow technique," which he discovered almost by accident.

The aesthetic effect shares similarity with pointillism except that I use color lines instead of color dots to create the picture.

"As with pointillism, when colorful lines are amassed together, the color effect is enhanced," Dr. Fung said. "On the other hand, when lines are relatively spaced apart, as in a close-up view, the colorful lines add to the 3D contour effect, enhancing resolution."

Using rainbow rendering, the surface behaves like a colorful Venetian blind, making objects on either side of the surface clearly visible, Dr. Fung said. This work, "What Lies Behind Our Nose?," was awarded first prize in the photography category in the 2007 5th Annual International Science and Engineering Visualization Challenge, sponsored by *Science*, the journal of the American Association for the Advancement of Science, and the National Science Foundation.

Art Springs from Everyday Artifacts

Another physician whose artwork has captured a sizeable audience began his Radiology Art project in 2007 for educational as well as aesthetic reasons.

"When I began creating this artwork, I was thinking 'How can people learn from these images'?" said Satre Stuelke, M.D., an intern at the University of Pittsburgh Medical Center, whose work is featured on his website, *radiologyart.com,* and exhibited everywhere from pediatricians' offices to the National Institutes of Health and the Ellen Powell Tiberino Museum in Philadelphia.

"I would like patients to feel more comfortable with the radiology procedures that can often be intimidating," Dr. Stuelke said.

Before earning his medical degree from Weill Cornell Medical College (WCMC), Dr. Stuelke—who also holds a master of fine arts degree from the School of the Art Institute of Chicago—worked as an artist and art professor. As a first-year medical student in 2007, Dr. Stuelke began using CT scanner time donated by WCMC's Biomedical Imaging Center to capture images of dozens of everyday objects.

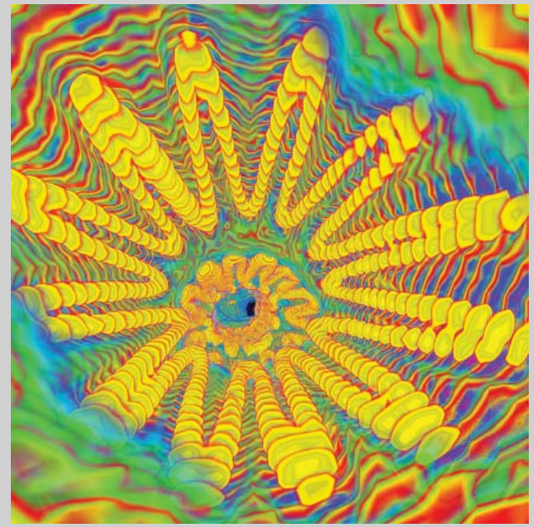
Using a four-slice CT scanner to acquire the DICOM images, Dr. Stuelke processed the scans using OsiriX Mac software which allowed him to assign different colors to areas of varying density. The resulting collection of more than 30 images ranging from elephants and giraffes to objects like toasters, telephones and TV dinners, have earned him recognition and media coverage in the *New York Times* and the "Today Show," among others.

Radiology Demystified

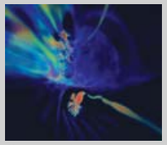
Although Dr. Stuelke still maintains his website and will provide high-resolution prints of his artwork upon request, he now concentrates full time on his medical career. Especially when it is displayed in pediatricians' offices, he believes his artwork can help young patients understand that imaging procedures allow doctors to see the inner workings of the body in order to diagnose and treat them.

Continued on Page 8

KAI-HUNG FUNG, M.B.B.S., F.R.C.R.



"Van Gogh Remembered"



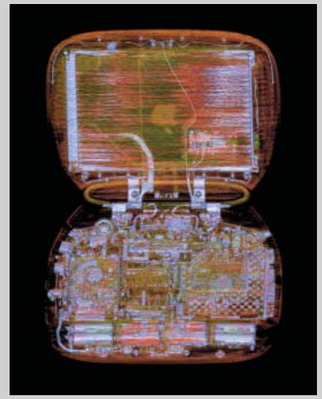
"Musician of the Night"

Created from CT renderings, the innovative artwork of Kai-hung Fung, M.B.B.S., F.R.C.R., has appeared in publications including *Leonardo, Radiologic Technology,* and *RadioGraphics,* which featured the cover image above, "Musician of the Night," in October 2009, and "Van Gogh Remembered," left, in July 2010.

SATRE STUELKE, M.D.

Buzz Lightyear

Wind-up Bugatti Race Car



Laptop Computer

Using dozens of CT scans of everyday objects, Satre Stuelke, M.D., has created more than 30 images *(above)* ranging from elephants and giraffes to objects like toasters, telephones, TV dinners and many more.

TO SEE MORE

The artwork of Kai-hung Fung, M.B.B.S., F.R.C.R., can be viewed at *RSNA.org/RadioGraphics* and in Web galleries for the magazines GEO, *www.geo-international.de,* and Leonardo at *www.leonardo.info,* among others. The artwork of Satre Stuelke, M.D., can be viewed at *radiologyart.com.*

Radiology Salaries Remained Flat in 2009

The changing face of healthcare and the faltering economy are among factors continuing to impact radiology salaries, which hovered just above the rate of inflation or flatlined altogether in 2009. Nevertheless, experts say those numbers should begin rebounding in 2010.

"I expect compensation to gradually start picking up again, but the days of double-digit increases are behind us at this point," said Brad Vaudrey, M.B.A., C.P.A., a director with RSM McGladrey's Health Care Consulting Group, which administered the 2010 American Medical Group Association (AMGA) 22nd Annual Medical Group Compensation and Financial Survey. "I don't see a lot of groups planning to significantly increase their physician compensation just yet, but I still expect the future trend to be a little bit above inflationary rates when taking into consideration increases in productivity."

AMGA's findings are the result of the survey sent to more than 2,700 medical groups in January 2009. RSM McGladrey received responses from 248 medical groups representing 49,700 providers.

Cardiac/thoracic surgeons were the highest paid specialty, with a median salary of $533,084, while orthopedic surgeons ranked second with a salary of $500,672; compensation for both increased 5.1 percent.

Of the 30 specialties surveyed, interventional radiologists scored third highest and diagnostic radiologists earned the fifth highest salary for 2009.

With a median salary of $454,205, diagnostic radiologists' compensation increased by 3.7 percent in 2009, while interventional radiologists reported a median salary of $478,000, which was unchanged from the year before.

Specialties with the highest compensation increases from 2008 to 2009 were pulmonary disease at 10.4 percent, dermatology at 7 percent and urology at 6.4 percent. Median salaries for the specialties were $267,148 for pulmonary disease, $344,847 for dermatology and $383,029 for urology.

SpeakUp
How did your practice do in 2009? Vote in this month's *RSNA News* reader poll at *rsnanews.org*.

The survey's finding of an overall weighted average increase of 3.4 percent was slightly lower than the 4.1 increase averaged over the last four years, Vaudrey said. "Radiology wasn't the only profession hit this year—it was widespread."


Vaudrey


Chan

"Ebb and Flow" Impacts Specialty

Salary increase percentages for both specialties dropped from 2008 when diagnostic radiologists' compensation increased by 4.8 percent and interventional radiologists received a 3.19 percent pay increase. Flat salaries for interventional radiologists in 2009 were partially caused by market adjustments, Vaudrey said. "In 2005 and 2006, interventional radiology had double digit growth due to new technology creating higher revenue and higher demand," Vaudrey said. "After a surge like that, we expect an adjustment period to follow and compensation to level off.

"Even with the lower reimbursement pressures, considering the number of interventional radiologists and the continuing demand, I don't expect to see compensation going down in the specialty," Vaudrey said. "It will probably keep going up but at a much slower pace. It's an ebb and flow."

The steady increase in salaries for diagnostic radiologists was in keeping with the overall consistency of the specialty, Vaudrey said. "For traditional diagnostic services there is a more consistent service line, consistent work effort and consistent reimbursement," explained Vaudrey.

Overall, approximately three in four specialties reported compensation increases, including primary care specialists who received a 3.8 percent increase, according to Vaudrey. Salaries for that specialty are likely to continue rising, Vaudrey said.

> "I expect compensation to start picking up again, but the days of double-digit increases are behind us for now."
>
> **Brad Vaudrey, M.B.A., C.P.A.**

"We are seeing a lot of investment in primary care with the medical home model," Vaudrey said. "The specialty is experiencing physician shortages and better reimbursement after four or five years of non-increases. As they catch up to the market, those factors are coming into play."

While the sweeping new healthcare reform law will undoubtedly have financial ramifications, it is too soon to predict the impact on radiology compensation increases, Vaudrey said. "We do know that medical groups have a strong interest in how compensation pay plans will be restructured," Vaudrey said. "In coming years, we will likely see significant changes in terms of greater focus on incentivizing quality and cost saving metrics."

Interventional Radiologists Work More for Same Pay

Despite a flat compensation, interventional radiologists did register an increase in one category in 2009: workload. Interventional radiologists showed a 5 percent increase in Relative Value Units (RVU)—the primary measure of a physician's productivity at the majority of participating medical groups—in 2009. "The amount of work that went into maintaining their salaries had an above average increase," Vaudrey explained.

For non-interventional radiologists, RVUs increased by 1.1 percent in 2009. "This increase in work effort is more in line with other specialties," Vaudrey said.

Cardiac/thoracic surgeons showed the largest increase in RVUs, jumping 6.68 percent in 2009, while the average increase in work RVUs was 1.2 percent for the specialties surveyed, Vaudrey said. Primary care remained fairly flat, while other medical specialties increased by 2.7 percent and surgical specialties went up an average of 3.0 percent, he said.

Outlook Relatively Bright

Although radiology salaries were essentially stagnant in 2009, the specialty will "continue to do well in the long term," despite increased competition from other specialists including cardiologists and neurologists, said Stephen Chan, M.D., an academic radiologist at New York's Columbia University and a member of RSNA's Professionalism Committee. Dr. Chan received a 2001 Education Scholar grant from the RSNA Research & Education (R&E) Foundation for graduate study in educational informatics to develop a program in radiology management.

"With the contracting healthcare dollar, radiologists can expect to face more competition," Dr. Chan said. "Nevertheless, we have always had this concern. In 1993, we started worrying about healthcare reform under the Clinton administration, in the late 1990s no one was hiring and we worried about the future of our profession," he continued. "Next, we worried about the growing number of subspecialists. All those worries were followed by a radiology job boom in the 2000s."

Despite a lackluster year salary-wise, the future bodes well for radiology, given the significant increase in imaging volume and anticipated physician shortages, Dr. Chan said.

"Radiologists are well placed," Dr. Chan said. "As long as we are valued by the people who send us patients, I have full confidence we will continue to thrive. Wherever we maintain robust connections within the medical structure, our practices will continue to remain strong." □

TOP PHYSICIAN COMPENSATION

Specialty	2009	2008	2008-2009 Percentage Change	2007
Cardiac/Thoracic Surgery	$533,084	$507,143	5.12	$497,307
Orthopedic Surgery	500,672	476,083	5.16	450,000
Cardiology — Cath Lab	484,092	471,746	2.62	456,048
Diagnostic Radiology (Interventional)	478,000	478,000	0.00	463,219
Diagnostic Radiology (non-interventional)	454,205	438,115	3.67	420,858

Source: American Medical Group Association (AMGA) 2009 Medical Group Compensation and Financial Survey.

LEARN MORE
More information about the American Medical Group Association is available at *www.amga.org*.

CT Artwork Offers Unique Slice of Radiology

Continued from Page 6

"People can be frightened and mystified about radiology exams," Dr. Stuelke said. "It's ultimately not that scary or mysterious. If I can show that through my artwork, maybe that can help alleviate fears over getting an MRI, a CT scan or even just a normal X-ray."

Moving beyond human subjects is also a goal of Dr. Fung, who anticipates using his imaging techniques on objects both large and microscopic.

"Although the only imaging data available to work on now is patients undergoing clinical exams, I would eventually like my subjects to include biological samples, human artifacts, paintings and objects of art," Dr. Fung said. "I could also contribute to a virtual museum or the study of evolution by applying advanced medical imaging technology and 3D visualization technology. It might also be feasible to apply the rendering method to visualize nanoscaled objects in 3D scanning electron microscopy."

After all, a good picture is worth a thousand words, as the adage goes. "This is the essence of medical or scientific data visualization," Dr. Fung said. "The picture speaks for itself."

That, Dr. Fung said, is when he knows his unique combination of art and technology has successfully intersected to accomplish his primary purpose. □

Human, Financial Factors Impact Speech Recognition Technology Success

Although voice recognition software has been shown to dramatically improve radiology report turnaround time, factors including human behavior and financial incentives can play a pivotal role in the overall success of the technology, according to new research.

In a study conducted at the University of North Carolina (UNC), Chapel Hill, researchers found that implementing speech recognition software—which essentially substitutes a person's voice for keyboard entry on a personal computer—decreased report turnaround time for the department overall and for 28 of the 30 individual faculty members included in the research, as expected. But the improvement correlated with work habits, researchers found.

"That human element has never been addressed or documented by data until this research," said Joseph K.T. Lee, M.D., a Distinguished Professor of Radiology at UNC, immediate past-chair of the Department of Radiology at UNC and co-author of the study published in the September edition of the *American Journal of Roentgenology.* "What our research taught us is not to underestimate the human role. Everybody uses technology, but we're still humans. Technology is just an enabling tool. You also have to have the buy-in from the users."

Dr. Lee and colleagues collected information in two timeframes: the nine-month period prior to implementation of speech recognition software and the nine-month period afterward, following a six-month training period.

Attending radiologists—full-time faculty members throughout the research period—were divided into three groups based upon the predominant pattern of their work habits. Type 1 faculty were those who reviewed, revised and finalized trainee reports at the time of image review; Type 2 faculty reviewed images with the trainee and verified reports in several batches daily after the trainee made corrections; and Type 3 faculty members also worked in batches but verified reports less frequently (once daily or less often).

While all but two of the participants showed improved turnaround time, researchers discovered the original rank order of the radiologists did not change.

"We found the people who demonstrated Type 1 and Type 2 behavior had a statistically significant improvement over the people who continued with the Type 3 behavior," said Arun Krishnaraj, M.D., the study's lead author. "When you change the manner in which you are generating and signing reports, it causes a lot of disruption. Even those who did well during the first study period were fighting the system somewhat in the beginning."

Lee

Krishnaraj

Hirschorn

Training is Critical

Echoing the findings of the UNC researchers, David Hirschorn, M.D., director of radiology informatics at New York's Staten Island University Hospital, found that getting hospital staff to believe in the new process is one of the major hurdles in implementing speech recognition technology.

"There is frustration and aggravation in the beginning while people get used to a new process," said Dr. Hirschorn, who presented his findings at the Society of Imaging Informatics in Medicine conference in May. "It is definitely one of the biggest hurdles to the success of this technology."

Training is critical and deploying a speech recognition program should be planned carefully in order to fully benefit from the software, Dr. Hirschorn said. Identifying a physician champion to motivate the department and reinforce the benefits of the technology also increases the odds of acceptance within the department.

"When radiologists learn how to use the system well, they can achieve greater results in the long run," he said.

> "What our research taught us is not to underestimate the human role. Everybody uses technology, but we're still humans."
>
> **Joseph K.T. Lee, M.D.**

Although previous studies have documented reductions in turnaround time for radiology reports after implementing voice recognition software *(shown above)*, researchers at the University of North Carolina, Chapel Hill, found that improvements in report turnaround time correlate with work habits rather than workload, suggesting that human behavior may play a role in determining the outcome of adopting the productivity-enhancing technology. Researchers at Brigham and Women's Hospital in Boston found that combining technology with financial incentives measurably and sustainably improved radiologists' report-signing behavior.

Financial Incentives Pay Off

Taking another approach, researchers at Brigham and Women's Hospital in Boston found that combining technology with financial incentives measurably and sustainably improved radiologists' report-signing behavior—a substantial component of total report turnaround time—and resulted in better overall performance than through technology alone.

In the 52-month prospective study published in the March 2010 edition of the *Journal of the American College of Radiology,* lead author Katherine P. Andriole, Ph.D., of the radiology departments at Brigham and Women's Hospital and Harvard Medical School in Boston, and colleagues measured radiologist signature times at a 751-bed, urban tertiary-care teaching hospital. Imaging volume over the study period was steady, averaging 48,000 imaging exams per month.

Along with implementing a PACS-integrated speech recognition reporting system and paging application that alerted radiologists when reports were ready for signing, researchers offered a financial incentive to reward radiologists for signature time performance. A $4,000 bonus was added semiannually to the regular paychecks of attending radiologists who met the departmental goal of a median signing time of eight hours or 80 percent of reports signed within 16 hours during the six-month period preceding the award date.

While results showed that just adopting the transcription and notification technology alone reduced the median signature time from five to one hour and 80th percentile signature time from greater than 24 hours to between 15 and 18 hours, adding the financial incentive further improved 80th percentile signature times to between 4 and 8 hours, researchers found.

"...the addition of financial incentive results in further significant improvements in signature time, which were sustained even after the financial incentive was discontinued," the authors wrote. This suggests a time-limited incentive program after the new technology is implemented can result in long-term behavioral changes. □

LEARN MORE

For more information on the studies cited in this article, go to *rsnanews.org.*

Contrast Debate Promises Stimulating RSNA 2010 Session

Although a mainstay in diagnostic imaging, gadolinium-based contrast agents (GBCAs) for MR imaging continue to stir controversy for their association with serious adverse reactions including nephrogenic systemic fibrosis (NSF) in patients with renal insufficiency.

Because contrast is used in approximately half of all MR imaging procedures and gadolinium-free agents for MR exams aren't poised to enter the market anytime soon, the debate over the use of GBCAs continues to gain momentum, according to presenters of the RSNA 2010 Special Interest/Controversies/Hot Topics session, "MR Contrast Agents: What is Their Value?"

"Overall, contrast agents have a very good standing for efficacy and safety, especially in body imaging and neuroradiology," said session moderator Elmar Merkle, M.D., of the Department of Radiology at Duke University Medical Center in Durham, N.C. "In our academic setting, approximately 70 percent to 75 percent of MR studies are performed with contrast agents. The main risk is in terms of NSF—this is what people are worried about."

In 2006, the U.S. Food and Drug Administration (FDA) issued a public health advisory discouraging the routine use of GBCAs in patients with moderate to severe impairment in kidney function. In September 2010, the agency began requiring safety-related label changes for all GBCAs to warn of NSF, a rare and potentially fatal syndrome that involves fibrosis of skin, joints, eyes and internal organs. One of those GBCAs—gadofosveset—is among the contrast agents to be debated at the RSNA 2010 session (see sidebar).

Willinek

Leiner

The Case for Gadofosveset

As the first blood-pool agent approved for use in contrast-enhanced MR angiography (MRA), gadofosveset offers a unique set of clinical and practical benefits that potentially outweigh associated risks, according to Winfried Willinek, M.D., an associate professor of radiology at the University of Bonn in Germany, and a presenter at the RSNA 2010 session.

"From my clinical experience, the number of patients who benefit from contrast-enhanced MR as compared to those who are potentially at risk for NSF is by far much higher," Dr. Willinek said.

Blood pool allows for steady-state images with higher resolution that have shown to improve diagnostic accuracy compared to first-pass imaging alone using digital subtraction angiography as the standard of reference, Dr. Willinek said.

"In addition to increased sensitivity and specificity, blood pool MRA in the steady state does not rely on bolus timing, thus enabling repeatable imaging in the absence of additional injections with a reduced number of retakes," he added.

At the University of Bonn, contrast enhancement with gadofosveset is now applied in the evaluation of all patients with known or suspected peripheral vascular disease rather than the standard first-pass protocol alone, Dr. Willinek said.

"This shift toward using the properties of a blood-pool agent indicates not only the ease of use, but also of the underlying belief by practitioners that this approach can indeed confer a benefit in clinical practice and care of patients, whether by delineating vessel segments with higher resolution or segments that were previously not visible, through the use of a single low-dose of gadolinium contrast," he said.

The Case against Gadofosveset

While not disputing the advantages of gadofosveset in terms of diagnostic accuracy and dose reduction, RSNA 2010 presenter Tim Leiner, M.D., Ph.D., of the Department of Radiology at Maastricht University Medical Center in The Netherlands, believes there are several important safety aspects associated with the contrast agent that must be considered.

> "In my opinion, the emphasis on NSF has promoted other modalities such as contrast-enhanced CT, sometimes with an even higher risk-benefit balance."
>
> **Winfried Willinek, M.D.**

Although gadofosveset has intermediate stability—and is not likely to release gadolinium—it remains in the body a considerably longer time than other agents, putting patients at higher risk, Dr. Leiner said. "Even though the agent can be dosed lower than standard GBCAs, the prolonged plasma time in the body still makes it a safety consideration," he said.

Dr. Leiner also contends that the jury is still out on gadofosveset and that more evidence is needed to demonstrate that the contrast agent leads to improved patient management compared to existing agents. "Standard extracellular agents work fine for most MRA indications," he added.

It is also a possibility that gadolinium-based contrast agents like gadofosveset will be phased out at some point in the future as vendors ramp up promotion of non-contrast-enhanced MR techniques. "Non-contrast MRA seems to be promising," Dr. Leiner said. "Although there is no non-gadolinium contrast agent on the market that can be used for the same set of clinical indications as GBCAs, this might change and we will have to carefully assess these agents if and when they become widely available."

Preventing NSF Requires Diligence

In terms of adverse reactions, Drs. Leiner and Willinek agree the risk of NSF remains a critical consideration, but that the radiologic community been successful in identifying patients at high risk for NSF, effectively preventing new cases. Nevertheless, the emphasis on NSF has created a separate set of risks for some patients. "In my opinion, the emphasis on NSF has promoted other modalities such as contrast-enhanced CT, sometimes with an even higher risk-benefit balance," Dr. Willinek said.

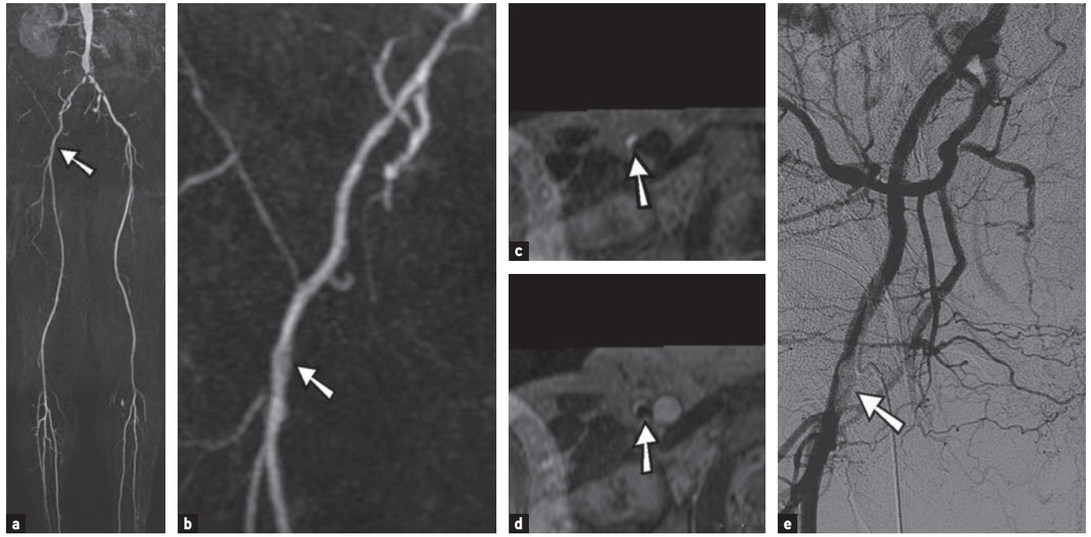
While conceding that the FDA must err on the side of caution, both physicians agree that there is very little evidence linking GBCAs—including gadofosveset—to NSF and that a blanket label warning for all subtypes of GBCAs may not be the best way to ensure patients receive the most beneficial treatment at the lowest risk.

"I recommend that radiologists and clinicians dealing with this matter carefully consider which study is in their patient's best interest," said Dr. Leiner, who co-authored, "NSF Prevention in Clinical Practice: Summary of Recommendations and Guidelines in the United States, Canada, and Europe," for the October 2009 issue of the *Journal of Magnetic Resonance Imaging*. "Very often, this is still contrast-enhanced MR imaging or MRA." (See sidebar)

Concurred Dr. Willinek: "I strongly recommend that radiologists and referring physicians consider the risks, request an agent with high stability and low risk, administer a low dose and carefully select the candidates who benefit from a contrast-enhanced MR study." □

LEARN MORE

For more information on the studies cited in this article, go to *rsnanews.org*.



The case for and against gadofosveset will be presented at an RSNA 2010 Special Interest/Controversies/Hot Topics session. Published in the November 2008 issue of *Radiology*, a study conducted at the University of Bonn in Germany, by RSNA 2010 presenter Winfried Willinek, M.D., and colleagues, illustrated MR angiographic and digital subtraction angiography (DSA) images of high-grade stenosis of common right femoral artery *(arrow)* in a 72-year-old man with severe aortoiliac occlusive disease. *(a, b)* Fused maximum intensity projections of moving-table-subtracted contrast-enhanced T1-weighted gradient-echo images. *(c)* Cross-sectional multiplanar reformation of contrast-enhanced T1-weighted gradient-echo images (2.7/0.89) during the arterial first pass. *(d)* Cross-sectional multiplanar reformation of high-spatial-resolution contrast-enhanced T1-weighted gradient-echo images (4.8/1.42) during the steady state. *(e)* Anterior view of DSA of right pelvic arteries. Stenosis grading of right common femoral artery *(arrow)* was judged as less than 50% on first-pass MR angiogram, but 50 percent or higher on steady-state MR angiogram and DSA image. Note the vast underestimation of stenosis grade on *a* and *b*. (*Radiology* 2008;249;2:701-711) ©RSNA, 2010. All rights reserved. Reprinted with permission.

CONTRAST VALUE DEBATED AT RSNA 2010

RSNA 2010 Special Interest/Controversies/Hot Topics session, "MR Contrast Agents: What is Their Value?" moderated by Elmar Merkle, M.D., and Neil Rofsky, M.D., will be held Thursday, Dec. 2. Events and lecturers are:

- The Case against Gd-EOB-DTPA, Hero Hussain, M.D.
- The Case for Gd-EOB-DTPA, Claude Sirlin, M.D.
- The Case for Gadofosveset, Winfried Willinek, M.D.
- The Case against Gadofosveset, Tim Leiner, M.D., Ph.D.
- Insights into Gadobutrol, Henrik Michaely, M.D.

Registration for RSNA 2010 continues at *RSNA.org/register*.

R&E Charitable Gift Annuity Multiplies Benefits

Through the RSNA Research & Education (R&E) Foundation's newly established charitable gift annuity program, radiologists now have the opportunity to give back to their specialty while reaping financial benefits and security for themselves and their loved ones.

"A charitable gift annuity is one of the best ways to give," said Allen F. Turcke, M.D., who donated a significant portion of appreciated stock to the R&E Foundation. "Not only do you support an organization that has proven worthwhile over time, but you receive an income check for the rest of your life and a very nice tax deduction."

In return for making a donation of cash or stocks to the R&E Foundation, RSNA pays the charitable gift donor—and spouse if so designated by the donor—a fixed amount each year for the rest of that person's life. The gift itself is partially income tax-deductible, as are the payments the donor receives.

Allen F. Turcke, M.D., (pictured with his late wife, Mary) donated a significant portion of appreciated stock to the R&E Foundation's newly established charitable gift annuity program.

The R&E Foundation is just one of a number of charities to which Dr. Turcke and his late wife, Mary, have donated over the years. "My wife and I were always community service-oriented people with an interest in philanthropy," said Dr. Turcke, who retired in 1999 after spending 41 years in private practice in Flint, Mich. "As part of our regular charitable distributions, we have been donating to the R&E Foundation for approximately 10 years. When my wife passed away about three years ago, I just kept donating and will probably continue to do so."

A charitable gift annuity is one of many options for lending support beyond a one-time cash gift, Dr. Turcke explained. Depending on the donor's age and the donation amount, the gift can provide significant supplemental income.

For example, a 70-year-old donor who establishes a $20,000 charitable gift annuity with the R&E Foundation today would receive an annuity rate of 5.8 percent, or $1,160 each year for the remainder of her life. Throughout her life, $831 of each payment would remain tax-free and she would also receive a charitable deduction of $6,795 if she itemizes her income taxes. After her death, the remaining amount would continue to support the Foundation.

Donors Shape the Future of Radiology

Along with their own financial benefits, charitable gift annuity donors have the

Continued on Page 15

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One Life

Your Age	Rate of Return
60	5.2%
65	5.5%
70	5.8%
75	6.4%
80	7.2%
85	8.1%
90+	9.5%

Two Lives

Your Ages	Rate of Return
60/65	5.0%
65/70	5.2%
70/75	5.5%
75/80	5.9%
80/85	6.6%
85/90	7.5%
90/95+	9.0%

R&E LAUNCHES PLANNED GIVING WEB PAGE

The charitable gift annuity is among the giving options featured on the newly launched R&E Foundation Web page designed to help potential donors understand their opportunities for supporting the R&E Foundation during or after a donor's lifetime.

Opportunities are explained in plain language and the site features an "Explore Your Options" page that lets users compare gifts, quiz themselves on planned giving and instantly calculate their benefit payments. The user-friendly site features easy-to-find information and tools like clearly visible buttons for adjusting text size to the user's preference.

For more information, visit *RSNA.org/PlannedGiving* or contact RSNA Research & Education (R&E) Foundation Director Karena Galvin at 1-630-590-7742 or *kgalvin@rsna.org*.

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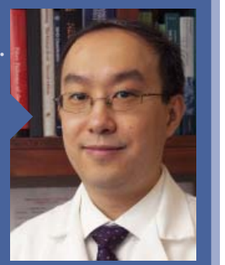
With an RSNA R&E Foundation grant, **Steve H. Fung, M.D.,** is working to develop a new class of enzyme-activatable MR nanoprobe contrast agents for early detection of micrometastasis within the lymph nodes.



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Roger L. Gonda Jr., M.D.
Kate & Shaun J. Gonda, M.D.
Audrey E. Graham, M.D.
Edward G. Grant, M.D.
Bennett G. Gray IV, M.D.

Continued on next page

AHRQ Awards $28.8 Million Through CHOICE Program

Three grants totaling 28.8 million were awarded recently by the Agency for Healthcare Research and Quality (AHRQ) to radiologists who are past recipients of RSNA Research & Education (R&E) Foundation funding. The grants are part of the Clinical and Health Outcomes Initiative in Comparative Effectiveness (CHOICE) program, part of $473 million awarded by AHRQ through a number of patient-centered outcomes research programs. More information is available at *www.ahrq.gov.*

	RSNA Grant	AHRQ Grant
Rebecca Smith-Bindman, M.D.	1999 Nycomed Amersham Imaging (now GE Healthcare)/RSNA Research Fellow Grant, "Prenatal Diagnostic Ultrasound for the Detection of Birth Defects and Chromosomal Abnormalities"	"Randomized Controlled Trial of US versus CT for Patients in the ED with Suspected Renal Colic"
Jeffrey G. Jarvik, M.D., M.P.H.	1994 RSNA Research Seed Grant, "A Feasibility Study for A Randomized Controlled Trial Comparing the Outcomes and Cost Effectiveness of Patients with Low Back Pain Receiving Either a Rapid Screening MR or Plain Films of the Lumbar Spine"	"Back Pain Outcomes Using Longitudinal Data (BOLD)"
Arthur E. Stillman, M.D., Ph.D.	1992 Philips Medical Systems/RSNA Research Seed Grant "Magnetic Resonance Spectroscopy of Radiation Treated Normal Brain"	"RESCUE: Randomized Evaluation of Patients with Stable Angina Comparing Utilization"

Continued from previous page

Vanessa & William A. Guyette, M.D.
Labib F. Haddad, M.D.
Sueli K. & Dalton L. Haga, M.D.
Seiki Hamada, M.D., Ph.D.
Lynwood W. Hammers, D.O.
Jo Ann & Gerald T. Hanley, M.D.
Isis S. Hannallah, M.D. & Raafat S. Hannallah
Amy & Matthew S. Hartman, M.D.
Sylvia & Harald Haueisen, M.D.
Heidi B. Henslee, M.D. & David Henslee
Jennifer M. Cutts, M.D. & Marc Hepp
Mark D. Herbst, M.D.
Sally D. Herschorn, M.D.
John R. Hesselink, M.D.
Joseph L. Higgins Jr., M.D., Ph.D.
Shozo Hirota, M.D.
Norinari Honda, M.D.
Yun-Soo Kim & Hyun-Sook Hong, M.D., Ph.D.
Charles W. Horner, M.D.
Sara P. Petrillo, M.D. & Edward Hulten
Miriam T. & David H. Hussey, M.D.
In memory of Peggy J. Fritzsche, M.D.
Yumi & Mitsuru Ikeda, M.D.
Patrick R. Inscore, M.D.
Tae Iwasawa, M.D.
Gail & Jeffrey G. Jarvik, M.D., M.P.H.
Takeshi Johkoh, M.D., Ph.D.
Susan D. John, M.D. & Darrell John
Amjed Kadhim, M.D.
Nadja Kadom, M.D.
Mel L. Kantor, D.D.S., M.P.H.
Junko Kato, M.D. & Katsuhiko Kato, M.D.
C. S. Keklak, M.D.
Todd W. Kennell, M.D.
Maged F. Khalil, M.D.
Sobia & Abdul-Majid Khan, M.D.
Ania Z. Kielar, M.D.
Rosemary J. Klecker, M.D.
Karen L. Kodsi, M.D.
Chi Wan Koo, M.D.
Lisa Peng & Phillip Kuo, M.D.
Kent T. Lancaster, M.D.
Peter C. Lau, M.D.
Eu-Meng Law, M.B.B.S.
Scott K. Lee, M.A., M.D.
Joseph L. Lenkey, M.D.
Gregory M. Lim, M.D.
In honor of Horacio R. D'Agostino, M.D.
Elizabeth Rider, M.D. & Harold E. Longmaid III, M.D.
Jaime M. Gallas, M.D.
Joan Cho & David A. Mankoff, M.D., Ph.D.
Mylon W. Marshall, M.D.
Melissa C. Martin, M.S. & Donald Martin, Ph.D.
Michael A. Matyas, M.D.
Gordon McLennan, M.D.
Mary E. Meyerand, Ph.D.
William D. Miller, M.D.
Sheri Saltzman & Robert J. Min, M.D.
Lee M. Mitsumori, M.D., M.S.
Jennifer & Jonathan A. Morgan, M.D.
Martha M. Munden, M.D. & Reginald F. Munden, M.D., D.M.D.
Akira M. Murakami, M.D.
Jennifer & Lennard A. Nadalo, M.D.
Keiko & Kiyoshi Namba, M.D.
Elsie Nguyen, M.D.
Charlene & Randy L. Niblett, M.D.
Hiroshi Nobusawa, M.D., Ph.D.
Karen A. Tong, M.D. & Andre Obenaus
In memory of Peggy J. Fritzsche, M.D.
Marc G. Ossip, M.D.
Jennifer & Joe E. Parkey, M.D.
William Pavlicek, Ph.D.
Pamela J. Koch, M.D. & Raymond Peart
David R. Pede
Andee & David M. Penn, M.D.
Dieu H. Pham, M.D.
Douglas W. Picton, M.D.
Stuart W. Point, M.D.
Silvia Prieto & Franks Prieto
Lorentz G. Quekel, M.D., Ph.D.
Christine & Robert M. Quencer, M.D.
Loreto Melys Beck & Cristian Andres J. Quezada, M.D.
Keshav P. Raichurkar, M.D.
Maria Caldas Vasquez & Roy F. Riascos, M.D.
Christine Caldwell & Michael L. Richardson, M.D.
Paul A. Richardson, M.D.
E. Russell & Julia R. Ritenour
David A. Roberts, M.D., Ph.D.
Russell L. Roberts Jr., M.D.
Moises Roizental, M.D.
Susan G. Roux, M.D.
Merri & Carl S. Rubin, D.O.
Noriko Salamon-Murayama, M.D & Georges Salamon, M.D.
Jason P. Salber, M.D.
Cynthia J. Sandberg, M.D. & Scott A. Sandberg, M.D.
Angela & Michael A. Sargent, M.D.
Robert J. Schmall, M.D.
Heather & Scott B. Schuber, M.D.
Nora Dajani, M.D. & Tom Shahwan
Richard Shoenfeld, M.D.
Richard J. Silberstein, M.D.
In memory of Peggy J. Fritzsche, M.D.
Laura W. Simons, M.D.
Claus S. Simpfendorfer, M.D.
Christopher E. Smith, M.D.
Becky & Gregory B. Smith, M.D.
Gail B. Carney & David L. Spizarny, M.D.
Harry L. Stein, M.D.
Keith A. Stenroos, Ph.D.
Donna & Randall H. Stickney, M.D.
Klaus-Peter F. Stocker, M.D.
Gideon Strich, M.D.
Colin D. Strickland, M.D.
Karen & Michael A. Sullivan, M.D.
In honor of Susan Thomas
Amanda J. Ferrell, M.D. & E.W. Swan
Nina & Joel D. Swartz, M.D.
George A. Taylor, M.D.
Kimberly & Jason A. Taylor
Nina L. Terry, M.D., J.D.
Alexandra & Sean Theisen, M.D.
David I. Thickman, M.D.
Jannette Collins, M.D., M.Ed. & Ken F. Thomson
William E. Tiemann, M.D.
Kitt Shaffer, M.D., Ph.D. & Timothy Titcomb
Dianne & Phuoc T. Tran, M.D., Ph.D.
Wen-Sheng Tzeng, M.D.
Christie & Bradford R. Uricchio, M.D.
Prasad Vasireddy, M.D.
In honor of Oscar C. Zink Jr., M.D.
Kusum Yadav & Kingal Virshni, M.D.
Jason M. Wagner, M.D.
Nicolaus A. Wagner-Bartak, M.D.
Darlene & James C. Walker Jr., M.D.
Horst Weissleder, M.D.
Donna & Josef C. Wenker, M.D.
Anthony L. Wheeler, M.D.
Erin L. Winston, M.D.
Zerrin Yetkin, M.D.
Shoko Yoshida, M.D.
Nancy & Hilary Zarnow, M.D.
Ghislaine & Albert Zilkha, M.D.

R&E Charitable Gift Annuity Multiplies Benefits

Continued from Page 13

satisfaction of knowing they are paving the way for the future of radiology, Dr. Turcke said.

"I've watched the Foundation grow and help young scientists and educators over the years," Dr. Turcke said. "There has been a vast change in the technology, and heaven only knows what's going to happen in the future.

"If you can help organizations that foster the education process, the more the better; and if you can do it within the sphere where you spent your academic and vocational years, better still," added Dr. Turcke. "Making a gift like this is a good way to redistribute a little of your wealth and enjoy some financial benefits at the same time." □

Radiology in Public Focus

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

Cardiovascular Disease: Prediction with Ancillary Aortic Findings on Chest CT Scans in Routine Practice

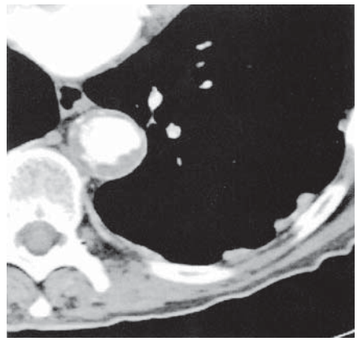
Calcifications of the thoracic aorta detected on routine diagnostic chest CT images in a clinical care population can be used to predict cardiovascular events, researchers have found.

As part of the Prognostic Value of Ancillary Information in Diagnostic Imaging project, which aims to investigate the relevance of unexpectedly detected imaging findings on chest CT, Martijn J.A. Gondrie, M.D., of the University Medical Center Utrecht in the Netherlands, and colleagues developed prediction models incorporating incidental aortic findings detected on chest CT.

From a total of 6,975 patients who had undergone diagnostic, contrast-enhanced chest CT for non-cardiovascular indications, researchers studied a representative sample of 817 patients plus 347 patients who experienced a cardiovascular event during a mean follow-up period of 17 months. Scores were assigned for incidental aortic abnormalities found on CT, including calcifications, plaques, elongation and other irregularities.

Each aortic abnormality was highly predictive and all models performed well, researchers found.

"A derived prediction model incorporating ancillary aortic findings detected on routine diagnostic CT images complements established risk scores and may help to identify patients at high risk for CVD," the authors write.



Aortic findings on transverse CT images obtained in four patients. Image shows irregular descending aorta with plaques and some calcified foci.
(*Radiology* 2010;257;2:549–559)

CARDIOVASCULAR RESEARCH IS FOCUS OF *RADIOLOGY* PODCAST

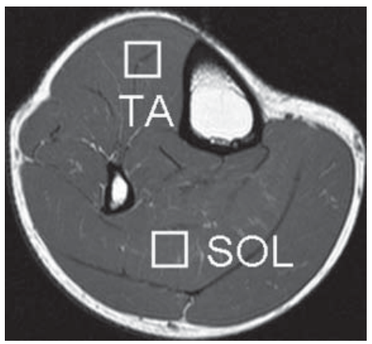
"Cardiovascular Disease: Prediction with Ancillary Aortic Findings on Chest CT Scans in Routine Practice" and the accompanying editorial will be the subject of *Radiology's* November podcast. Readers can access the podcast by clicking on the "Hear What We Think" link at *RSNA.org/Radiology*. Read more about *Radiology* podcasts in For Your Benefit, on Page 18.

Follow-up Whole-Body Assessment of Adipose Tissue Compartments during a Lifestyle Intervention in a Large Cohort at Increased Risk for Type 2 Diabetes

In subjects at increased risk for Type 2 Diabetes, visceral adipose tissue and hepatic lipids—as assessed with MR imaging and MR spectroscopy—can be significantly reduced during lifestyle intervention including optimized nutrition and controlled physical activity. Baseline values emerged as predictive factors for improving insulin sensitivity, researchers found.

In a prospective study, Jürgen Machann, Dipl. Phys, of the University Hospital Tübingen in Tübingen, Germany, and colleagues performed MR imaging and MR spectroscopy on 243 subjects (99 men and 144 women) prior to and nine months after lifestyle intervention. Compared with women, men had almost twice the amount of visceral adipose tissue and a smaller amount of total adipose tissue at baseline. In addition, their insulin sensitivity was significantly lower than that of women, researchers found.

"Our results suggest that men with low baseline levels of visceral and abdominal subcutaneous adipose tissue will benefit from this form of lifestyle intervention, with an improvement of insulin sensitivity," researchers concluded. "In addition, low baseline levels of hepatic lipids are associated with a positive response in both sexes."



Images from MR spectroscopy of skeletal muscle. T1-weighted MR image of the lower leg shows volumes of interest in the anterior tibial muscle (TA) and soleus muscle (SOL).
(*Radiology* 2010;257;2:353–363)

RADIOLOGY EDITORIAL ADDRESSES MACHANN RESEARCH

An accompanying editorial, "Total Body Fat Distribution as Part of Multiorgan MR Imaging: New Tool for Risk Assessment in the Metabolic Syndrome," by Hildo J. Lamb, MS.C., Ph.D., will appear in the November issue of *Radiology*.

Journal Highlights

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

Clinical Radiation Management for Fluoroscopically Guided Interventional Procedures

Considering the large number of fluoroscopically guided interventional (FGI) procedures performed each year and the potential risk of radiation effects to patients, management of radiation exposure is essential for these procedures.

In an article in the November issue of *Radiology (RSNA.org/radiology),* Donald L. Miller, M.D., of the National Naval Medical Center in Bethesda, Md., and colleagues stress that dose optimization is possible through appropriate use of the basic features of interventional fluoroscopic equipment and intelligent use of dose-reducing technology

Radiology

The authors detail the process for creating an effective clinical radiation management plan, specifically addressing:

- Radiation effects
- Principles of radiation protection
- Radiation dose estimation
- Radiation management in interventional procedures

"Minimizing the likelihood and severity of radiation effects requires appropriate and properly functioning equipment, a radiation management process that extends from preprocedure planning through postprocedure follow-up and a robust quality assurance and quality improvement program," the authors conclude.

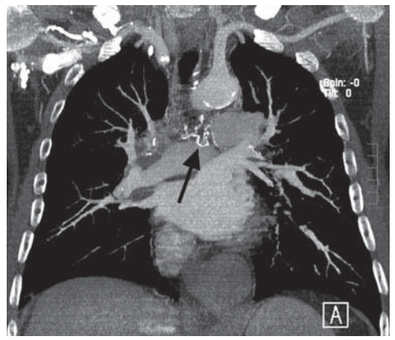
CT Findings in Diseases Associated with Pulmonary Hypertension: A Current Review

Because diseases that can induce pulmonary hypertension display a wide spectrum of partially overlapping CT features, definitive diagnosis may require correlation of CT imaging findings with clinical, histopathologic and angiographic findings.

RadioGraphics

In an article in the November-December issue of *RadioGraphics (RSNA.org/radiographics),* Claudia Grosse, M.D., and Alexandra Grosse, M.D., of the Department of Radiology at the Medical University of Vienna in Austria, review CT features and histologic findings of diseases associated with pulmonary hypertension with reference to their underlying pathophysiologic mechanisms and histologic hallmarks.

"High-resolution CT and CT angiography play a crucial role in the diagnostic work-up of pulmonary hypertension and are particularly important for identifying patients with chronic or recurrent pulmonary thromboembolism and for assessing the feasibility of pulmonary thromboendarterectomy," the authors conclude.



Chronic thromboembolic pulmonary hypertension in a 59-year-old man with a systolic pulmonary artery pressure of 100 mm Hg. Coronal reformatted image from contrast-enhanced CT more clearly depicts collateral vessels *(arrow).*

(*RadioGraphics* 2010; 30;1753–1777) ©RSNA, 2010. All rights reserved. Printed with permission.

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

Radiology in Public Focus

Media Coverage of RSNA

In September 2010, media outlets carried 850 RSNA-related news stories. These stories reached an estimated 456 million people.

September print coverage included *The New York Times, Chicago Tribune, Orlando Sentinel, Straits Times, Edmonton Sun, Toronto Sun, News and Observer* (Raleigh-Durham, N.C.), *Daily Herald* (Chicago), *Cincinnati Enquirer, Charleston Gazette, Lexington Herald-Leader, San Bernardino Sun, Executive Travel, R&D Magazine, Diagnostic Imaging* and *Bioscience Technology.*

Broadcast coverage included KING-TV (Seattle), WCAU-TV (Philadelphia), WMAQ-TV (Chicago), WPIX-TV (New York), KXAS-TV (Dallas-Fort Worth), WYFF-TV (Greenville, S.C.), WXII-TV (Winston-Salem, N.C.), KSDK-TV (St. Louis), WVIT-TV (Hartford, Conn.), KCRA-TV (Sacramento), WMC-TV (Memphis, Tenn.), KNSD-TV (San Diego), WBAL-TV (Baltimore), WDSU-TV (New Orleans), KSHB-TV (Kansas City, Mo.), KGW-TV (Portland, Ore.), KSL-TV (Salt Lake City) and WOR-AM (New York)

Online coverage included Yahoo! News, *The New York Times* Online Edition, *Chicago Tribune* Online Edition, ABC News Online, MSN Health, Everyday Health, CBS News Online, FOX News Online, Science Blog, Medical News Today, *Examiner.com, Newsday.com, USNews.com, QualityHealth.com, iVillage.com, AZCentral.com, TheStreet.com* and *ScienceDaily.com.*

November Public Information Activities Focus on Lung Cancer

In recognition of National Lung Cancer Awareness Month in November, RSNA distributed public service announcements (PSAs) focusing on:

- Symptoms of lung cancer
- Risk factors
- Possible treatment options

In addition to the PSAs, RSNA also distributed the "60-Second Checkup" audio program to radio stations. The radio segments focus on lung cancer awareness and potential screening methods.

For Your Benefit

Podcasts Broaden Discussion of *Radiology* Research

In the continuing effort to expand the online experience for journal readers, *Radiology* began offering podcasts in January 2009 to promote a broader discussion of manuscripts of particular interest.

Rather than mere capsule summaries of the articles, the monthly podcasts—digital audio files in an mp3 format—provide in-depth discussion among study authors, editor and deputy editors on the context and implications of the selected research.

The Value of Membership

We tend to choose articles that we believe have the potential for broad reader interest. Podcasts have featured discussions among authors of two or three unrelated articles and, increasingly, among several authors of related manuscripts.

For example, *Radiology's* November podcast features a panel discussion moderated by Alex Bankier, M.D., the journal's deputy editor for thoracic imaging, along with three authors of studies in that issue that describe chest CT data sets in assessing risks for other diseases unrelated to the original study indications. Howard P. Foreman, M.D., M.B.A., the author of a provocative November editorial, "What We Can and Cannot See Coming," on the practice implications raised by these studies, also participates in the podcast. (See Radiology in Public Focus, Page 16)

We invite readers to experience the "Hear What We Think" podcast in this—and every month's issue—and explore the online podcast archive at *RSNA.org/Radiology.* Podcasts are also available as free downloads on iTunes.

Kressel

Herbert Y. Kressel, M.D., is the editor of *Radiology.*

Member Question of the Month

What is the single best course you've ever taken at the RSNA annual meeting?

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

MOC News

Healthcare Reform Underscores Importance of MOC Program

As regulators, payers, providers and quality groups develop quality programs and metrics as a result of healthcare reform, the American Board of Radiology (ABR) has joined the other member boards of the American Board of Medical Specialties (ABMS) to set meaningful standards and to position participation in maintenance of certification as a credible marker of quality healthcare. ABMS and ABR want to help physicians serve their patients while allowing them to be rewarded under the new healthcare system.

The MOC Program of the ABMS has been developing for more than a decade. ABR participates not only because its board is accountable to the public, but also because participation in MOC is imperative for professionals who enjoy a position of privilege within society—the public wants and deserves to know that physicians have remained current and that they practice according to contemporary standards and guidelines. The requirements of the ABR MOC Program result from very thoughtful deliberations, consideration of practice diversity and national healthcare priorities, review of published evidence, dialogue with specialty societies and compliance with ABMS guidelines.

While details must be fleshed out by individual member boards, including ABR, a proposed amendment to new, reform-based criteria for participating in quality reporting and incentive payment adjustment inserts the words "or through a Maintenance of Certification program operated by a specialty body of the American Board of Medical Specialties that meets the criteria for such a registry."

The ABR thanks all MOC participants for their support of a program that is already having a durable impact on the quality and safety of radiology practice.

ABR will distribute its new custom maintenance of certification (MOC) lapel pins at RSNA 2010. Available at the ABR booth in the Lakeside Learning Center, the pins will be free of charge to all MOC participants and to anyone who signs up for MOC at the booth.

Education and Funding Opportunities

Writing a Competitive Grant Proposal

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

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

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

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

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

Medical Meetings

December 2010 – March 2011

DECEMBER 9-11
American Society for Radiation Oncology (ASTRO), Chicago Hilton, Chicago
• *www.astro.org*

JANUARY 17–21, 2011
Integrating the Healthcare Enterprise (IHE®) North American Connectathon, Hyatt Regency Chicago
• *www.ihe.net/Connectathon*

JANUARY 28–31, 2011
Indian Radiological & Imaging Association (IRIA), 63rd Annual Congress, Hotel Ashok, Chankya Puri, New Delhi, India
• *www.iriadelhi2011.com*

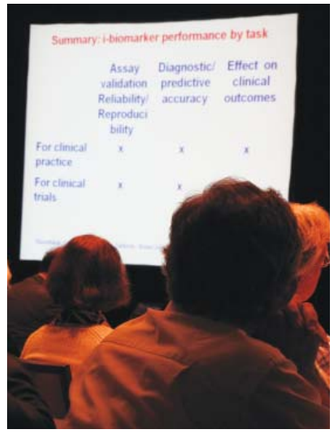
FEBRUARY 12–17, 2011
International Society for Optics and Photonics (SPIE), Medical Imaging 2011, Lake Buena Vista, Orlando, Fla. • *www.spie.org*

FEBRUARY 20-24, 2011
Healthcare Information and Management Systems Society (HIMSS), Annual Conference and Exhibition, Orlando, Fla.
• *www.himssconference.org*

MARCH 6-9, 2011
Society of Thoracic Radiology, Annual Meeting, Hyatt Regency Coconut Point, Bonita Springs, Fla.
• *www.thoracicrad.org*

More Than 50 Attend RSNA Biomarker Roundtable

Held September 21-22 in Chicago, the Imaging Biomarkers Roundtable, moderated by RSNA Science Advisor Daniel Sullivan, M.D., *(right),* was attended by more than 50 representatives of pharmaceutical and device manufacturers, government organizations, academic institutions, professional societies and clinical research organizations. A number of participants were invited to share their interests and activities in quantitative imaging and imaging biomarkers, with the goal of discovering gaps and fostering communication and coordination among the groups. The second day featured focused breakout sessions on topics including regulatory approach to combined products and open image archives.



RSNA.org

Easy Navigation Key to Revamped QIBA Page

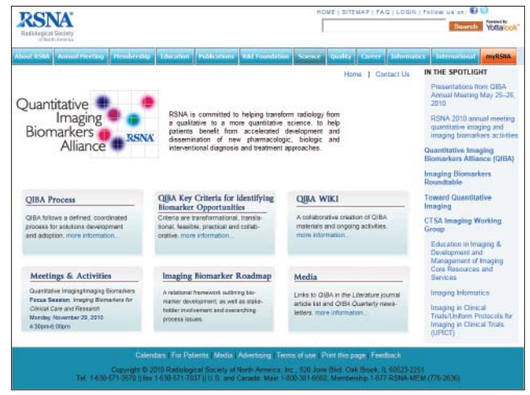
Along with an inviting new look, visitors to the Quantitative Imaging Biomarkers Alliance (QIBA) Web page will find an easy-to-navigate format highlighting QIBA's expanding library of cutting-edge content. Easy-access boxes link to information on QIBA's process, keys to criteria for identifying biomarker opportunities and much more.

To SEE QIBA's new look, log onto *RSNA.org,* go to "Science" on the top navigation bar, and click Quantitative Imaging from the drop-down tab. Highlights include:

QIBA WIKI: Along with QIBA's mission statement, this page offers a collection of QIBA materials, committees, activities and documents.

Media: Offers links to the *QIBA Quarterly* newsletter and QIBA in the Literature, providing links to research citing QIBA and its members.

In the Spotlight: Links to additional imaging biomarker and quantitative imaging activities supported by RSNA.



Johns Hopkins Site Devoted to CT

Website-ing

CT is the sole focus of *www.ctisus.com,* the nonprofit website created and maintained by Elliot K. Fishman, M.D., of the Advanced Medical Imaging Laboratory, which is part of the Department of Radiology at the Johns Hopkins Medical Institutions in Baltimore. Along with CME courses, lectures and exhibits, the site offers scanner protocols, learning modules and a host of other features including hot topics in CT, real-time videos and teaching files. Dr. Fishman was the 2009 RSNA Outstanding Educator and is a member of the RSNA-ACR Public Information Website Committe that oversees *www.RadiologyInfo.org.*

COMING IN DECEMBER

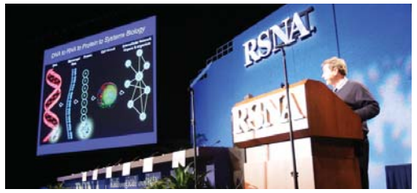
As the war in Afghanistan toils on, medical personnel—including radiologists—continue to do their part aiding American soldiers on the front lines. Next month, *RSNA News* will report the 2009 wartime experiences of two radiologists assigned by the U.S. Navy to a battlefield hospital in Kandahar Airfield, where they treated more than 2,000 soldiers in a M.A.S.H.-like setting—often in the line of incoming fire.

Retrospective

Celebrating 20 Years of *RSNA News*

Headlines

Remembering radiologic topics that made the news. This month's feature: just a few of the most **memorable lectures from the RSNA annual meeting,** and the people who delivered them.



ANNUAL ORATION IN RADIATION ONCOLOGY

1991: Chemoirradiation: A New Initiative in Cancer Treatment

Marvin Rotman, M.D.

1994: Carcinoma of The Prostate: A Model for Management Under Impending Health Care System Reform

Carlos A. Perez, M.D.

2002: Linking Radiation Oncology and Imaging through Molecular Biology (or Now That Therapy and Diagnosis Have Separated, It's Time to Get Together Again!)

C. Norman Coleman, M.D.

ANNUAL ORATION IN DIAGNOSTIC RADIOLOGY

1998: Colorectal Cancer Imaging: A Challenge for Radiologists

Giles W. Stevenson, M.D.

2001: The Impact of MR Imaging in Sports Medicine

Clyde A. Helms, M.D.

2005: Radiology: Back to the Future

William R. Brody, M.D., Ph.D.

EUGENE P. PENDERGRASS NEW HORIZONS LECTURE

1996: Image-guided Procedures and the Operating Room of the Future

Ferenc A. Jolesz, M.D.

2004: Molecular Imaging: From Nanotechnology to Patients

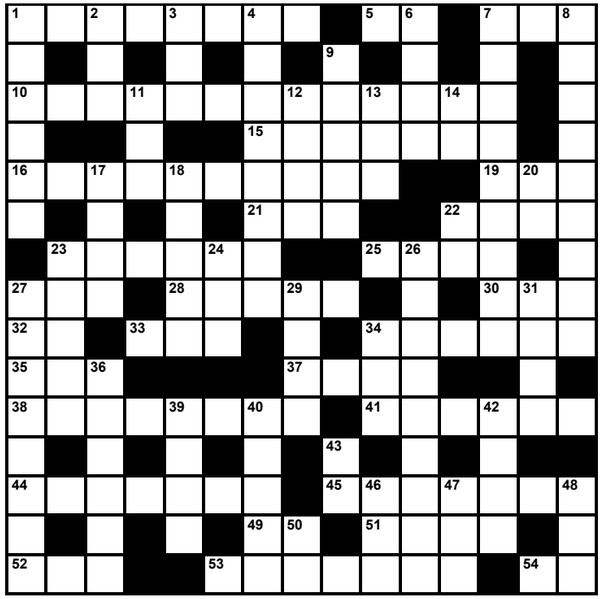
Michael E. Phelps, Ph.D.

2008: Nanotechnology in the Future of Imaging: Prospects and Pitfalls

Michael J. Welch, Ph.D.

Crossword

Test your knowledge of radiology history and the press, politics and pop culture of the last 20 years. Answers will appear in the December issue of *RSNA News.*



Across

1 Official newspaper of RSNA annual meeting: Daily _____
5 Sooners' locale
7 It's worldwide
10 Patient-focused radiology Web site
15 Between walked and ran
16 Method of obtaining images using high frequency waves
19 Place for sweaters?
21 Non-profit broadcasting service, started in 1970
22 Person with outstanding performance
23 Became first female U.S. House speaker, in 2007
25 As far as (2 words)
27 Elton John or Paul McCartney
28 Standard for digital imaging and communications
30 "Evita" narrator
32 Amarillo state
33 Harden in place, as of a bone
34 Kind of bee
35 Ventilate
37 Hairstyle
38 Instrument results
41 Campaign to reduce radiation dose in pediatric patients: Image _____
44 Sends data over the Internet
45 Original name for RSNA: _____ Roentgen Society
49 In the direction of
51 Shot, as in a picture
52 Goes with Mex
53 _____tron: subatomic particle accelerator, used to produce X-rays
54 Twin cities state

Down

1 Metallic chemical outlines digestive tract on X-ray
2 Was ahead
3 Old Tokyo
4 Having the same atomic number but different mass numbers
6 Lois's sweetheart, in film
7 August 1994 festival celebrated 25th anniversary of this
8 RSNA leads the way in promoting imaging as this measurement of treatment efficacy
9 French capital of gastronomy
11 Mediterranean land, abbreviation
12 Chow
13 "___ be my pleasure!"
14 Iron symbol
17 Stage
18 Voltaic cell
20 William Penn state
22 Wall or Main __
23 Mischievous one
24 Command to Fido
26 RSNA venture sends physicians throughout the world: Visiting _____ Program
27 NASA mission successfully ended in 2006, becoming first to return dust from a comet
29 "The Lord of the Rings" evil warriors
31 Return to health
34 Halloween accessory
36 RSNA-developed radiology lexicon
39 Tehran's nation
40 Wind description
42 Hike
43 Bug, maybe
46 African country, abbreviation
47 Unduly
48 Indian bread
50 "Man ___ Fire" Denzel Washington movie

CHALLENGE YOURSELF An interactive version of this puzzle at *rsnanews.org* includes a timer and optional hints.

RSNA 2010 Lectures/Orations Preview

RSNA 2010 will feature honored lectures on a spectrum of healthcare topics. All lectures will be presented in the Arie Crown Theater.

Special Lecture

Personalized Cancer Care

• Sunday, Nov. 28 • 8:30 a.m.

Planning cancer treatment today is a multimodality, collaborative process, according to University of Texas MD Anderson Cancer Center President **John Mendelsohn, M.D.,** who will deliver a special lecture Sunday during the RSNA 2010 opening session.

Dr. Mendelsohn

Treatment depends on the particular genetic and molecular abnormalities in the patient's cancer, as well as the tissue type and the stage, Dr. Mendelsohn said. "Biomarkers—laboratory and imaging—are critical for identifying patients likely to respond to new targeted therapies," he said.

Dr. Mendelsohn has effected monumental change in personalized cancer treatment on the bench, in the clinic and from the executive suite. MD Anderson has doubled in size by most parameters since he assumed the presidency in 1996.

While earning his bachelor's degree in biochemical sciences from Harvard, Dr. Mendelsohn was the first undergraduate student of Dr. James D. Watson, who later won the Nobel Prize in Medicine for identifying the structure of DNA.

Dr. Mendelsohn previously chaired the Department of Medicine at Memorial Sloan-Kettering Cancer Center in New York, where he held the Winthrop Rockefeller Chair in Medical Oncology. He also was the founding director of a National Cancer Institute-designated cancer center at the University of California, San Diego.

Dr. Mendelsohn is particularly well known for his research on targeted anti-receptor therapy. Antibody 225, or Cetuximab, was first produced by Dr. Mendelsohn and his collaborators at UCSD and further tested during his tenure at Memorial Sloan-Kettering. Cetuximab was approved by the U.S. Food and Drug Administration for colon cancer in 2004 and for head and neck cancer in 2006.

Annual Oration in Diagnostic Radiology

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

• Sunday, Nov. 28 • 8:30 a.m.

While past radiologic guidelines for evaluating focal pulmonary lesions were based on morphologic parameters and the concept of size stability over time, a broader spectrum of factors—

Dr. Herold

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including individual risk determination, texture analysis, growth rate and metabolic behavior—have now been integrated into an accepted management approach, according to the presenter of the RSNA 2010 Annual Oration in Diagnostic Radiology.

"While this evidence-based expert consensus strategy now provides a simple roadmap for the management of groups of individuals with similar morphologic and risk characteristics and defines a new standard of practice, it does not yet entertain the concept that the biological behavior of focal pulmonary lesions can differ from patient to patient," said lecturer **Christian J. Herold, M.D.**

Moreover, relatively new findings such as non-solid and part-solid lesions have not been investigated to the extent that would allow for undisputed research and evidence-based integration into a holistic management and treatment approach, Dr. Herold said.

"Undoubtedly, the next steps in refining these strategies should aim at a tailor-made approach for the individual with a focal pulmonary abnormality," Dr. Herold said.

An internationally recognized diagnostic radiologist and ambassador for the European radiology community, Dr. Herold is currently a professor and chair at the Medical University of Vienna, Vienna General Hospital, and the university's director of international affairs. Dr. Herold maintains a part-time faculty appointment at The Johns Hopkins University in Baltimore.

A past-president of the European Congress of Radiology, Dr. Herold has received the Hounsfield Award of the Society of Computed Body Tomography and a European Society of Gastrointestinal and Abdominal Radiology award. Dr. Herold was awarded RSNA honorary membership in 2007.

Eugene P. Pendergrass New Horizons Lecture

Strategies for the Earlier Detection of Cancer

- Monday, Nov. 29 • 1:30 p.m.

Dr. Gambhir

Too much research investment is placed on later stages of cancer, when the probability of survival is markedly reduced, said **Sanjiv S. Gambhir, M.D., Ph.D.,** presenter of the New Horizons Lecture at RSNA 2010. Radiology, said Dr. Gambhir, can fundamentally shift the equation towards earlier detection—the merger of in vitro diagnostics, such as blood tests for proteins, and in vivo molecular/anatomical imaging will enable a fundamental revolution.

"There is significant promise for profound change in how we practice medicine," said Dr. Gambhir, who received the 2009 RSNA Outstanding Researcher Award. "Radiology can play a central role, helping evolve and shape this emerging vision for the benefit of cancer patients."

Dr. Gambhir is the Virginia & D. K. Ludwig Professor of Radiology, Bioengineering and Materials Science at Stanford University. He is the head of nuclear medicine, director of the Molecular Imaging Program and a member of the Bio-X program at Stanford, and heads the Canary Center for Cancer Early Detection.

Dr. Gambhir and his team have developed methods to image gene expression in living subjects, including humans. These imaging strategies have been translated into clinical trials for cancer gene/cell therapies. Dr. Gambhir has also led the development of strategies for studying basic cell/molecular biological events such as imaging protein-protein interactions.

Dr. Gambhir developed many of the original management algorithms for cancer patients—including cost-effectiveness models—which led to FDG-PET reimbursement by the Centers for Medicare and Medicaid Services. He also works with imaging vendors and hospital administration to design new nuclear medicine clinical facilities and has set up the FDA radiochemistry/cyclotron facilities with good manufacturing practices.

Special Lecture

Real Reform: Facing the Complexity of Health Care

- Monday, Nov. 29 • 1:30 p.m.

From his unique perspective as a practicing surgeon, writer, teacher and lecturer, **Atul Gawande, M.D.,** tackles the practice of medicine, the reform of healthcare and the human struggle to do better and improve performance. Dr. Gawande encourages incremental reforms that build on the strengths and limitations of the current system and speaks to how to improve care and lower costs.

Dr. Gawande

Dr. Gawande is the author of the bestselling books *Better: A Surgeon's Notes on Performance* (2007) and *Complications* (2002). In his latest bestseller, *The Checklist Manifesto* (2009), Dr. Gawande explores how using the "lowly" checklist has revolutionized medical practice and saved lives.

A staff member of Brigham and Women's Hospital (BWH) in Boston, the Dana Farber Cancer Institute and *The New Yorker* magazine, Dr. Gawande is an associate professor of surgery at Harvard Medical School, associate professor in the Department of Health Policy and Management at the Harvard School of Public Health, and research director for the BWH Center for Surgery and Public Health.

Dr. Gawande served as a senior health policy advisor in Bill Clinton's presidential campaign and in the Clinton White House from 1992 to 1993. He is the director of the World Health Organization's Global Challenge for Safer Surgical Care.

In 2006, Dr. Gawande received the MacArthur Award for "fresh and unique perspective, clarity and intuition" in his written work and his "energetic and imaginative" approach to finding practical ways to improve surgical practice. Dr. Gawande was named to The 2010 TIME 100 at number five in the thinker category.

Special Address*

- Tuesday, Nov. 30 • 1:30 p.m.

President Clinton

President Bill Clinton is a powerful voice for progress around the world. At RSNA 2010, President Clinton will address an international RSNA audience of radiology professionals and medical researchers who are engaged in shaping the practice of radiology around the globe.

*Tickets required to attend address in Arie Crown Theater. Attendees without tickets may view the lecture by simulcast in Room N228 or Room E353A. See *RSNA2010.RSNA.org* for more details.

Annual Oration in Radiation Oncology

Single Dose Radiotherapy (SDRT)—A Changing Paradigm Evolving from IMRT

- Wednesday, Dec. 1 • 1:30 p.m.

The effectiveness of single dose radiation therapy (SDRT) in locally curing tumors regardless of type has led to the hypothesis that SDRT may engage a different mechanism of tumor cure than classical fractionated radiotherapy, according to the presenter of the RSNA 2010 Annual Oration in Radiation Oncology.

"Genetic and pharmacologic studies in experimental tumor models support this notion, demonstrating a unique mechanism of action for SDRT in simultaneously activating two tumor tissue elements as primary targets, inducing potentially lethal lesions in parenchymal tumor stem cell clonogens (SCC) and triggering acid

sphingomyelinase (ASMase)-mediated endothelial apoptosis and an associated dysfunction of the tumor microvascular network," said **Zvi Fuks, M.D.**

Functional linkage of these two-target response mechanisms appears mandatory for tumor cure with SDRT, with the vascular component regulating SCC demise by attenuating DNA double strand breaks (DSB) repair in the irradiated SCCs, according to Dr. Fuks.

Dr. Fuks

"Understanding the complex interactions between the diverse endothelial and tumor SCC death mechanisms provides targets for optimizing SDRT as an emerging alternative modality to classical fractionated radiotherapy," Dr. Fuks said.

World-renowned for his contributions to advancing the cure of cancer with radiation—many which remain standards for clinical practice—Dr. Fuks' recent clinical efforts have focused on developing 3D conformal radiation therapy as a new modality in radiation oncology.

Dr. Fuks joined the Department of Radiation Oncology at New York's Memorial Sloan-Kettering Cancer Center in 2004, serving as chair of the department and deputy physician-in-chief for planning for Memorial Hospital. Currently, Dr. Fuks is a member of the Department of Radiation Oncology and the Molecular Pharmacology and Chemistry Program at Sloan-Kettering Institute for Cancer Research and a member of the Institute of Medicine of the National Academy of Sciences.

The author of more than 400 journal articles and 100 book chapters, Dr. Fuks' many accolades include the Alfred B. Sloan Chair, the Klaas Breuer Gold Medal Award and the gold medal of the American Society for Radiation Oncology.

More About RSNA 2010

REGISTER FOR SCIENTIFIC AND EDUCATION COURSES AT *RSNA.ORG/REGISTER*

Take the Image Wisely™ Pledge

To be launched at RSNA 2010 is the Image Wisely™ campaign to increase understanding of adult radiation protection among radiologists, referring physicians, medical physicists and radiologic technologists. RSNA is among the campaign's charter members, which also include the American College of Radiology (ACR), American Association of Physicists in Medicine (AAPM) and the American Society of Radiologic Technologists (ASRT).

Stop by one of these booths to learn more and pick up your "I pledged to Image Wisely" ribbon:

- ACR – #2809 (Hall A)
- ASRT – #605 (Hall D)
- AAPM – #400 (Hall D)
- *RadiologyInfo.org* (RSNA Services)

Image Wisely™ Joint Task Force co-chairs James A. Brink, M.D., and E. Stephen Amis, Jr., M.D., will discuss the campaign during the special interest session, "Current Issues in Radiation Safety," to be held Monday, Nov. 29, 4:30 – 6:00 p.m. in Room S404AB.

Learn about "Meaningful Use" Doctrine

Vendors and radiologists alike will benefit from the RSNA 2010 lineup of courses covering the impact of the new "meaningful use" doctrine—U.S. government criteria to determine whether healthcare providers are using IT tools effectively.

- Sunday, Nov. 28, 2:30 – 3:30 p.m. "Meaningful Use for Radiology IT Vendors: What your Customers Will Demand, and Your Competition Will Provide." Presenters, David E. Avrin, M.D., Ph.D., and Keith J. Dreyer, D.O., Ph.D.
- Monday, Nov. 29, 12:30 – 2:00 p.m. "Healthcare Reform Through Meaningful Use of Healthcare IT: Implications for Radiologists." Presenters, David E. Avrin, M.D., Ph.D., Keith J. Dreyer, D.O., Ph.D., Ramin Khorasani, M.D., and David S. Mendelson, M.D.
- Monday, Nov. 29, 3:30 – 4:30 p.m. "Adding Millions of Dollars to your Practice through Meaningful Use." Presenters, David E. Avrin, M.D., Ph.D., and Keith J. Dreyer, D.O., Ph.D.

Registration for these and all RSNA 2010 courses is under way at *RSNA2010.RSNA.org.*

Lakeside Learning Center

More than 1,800 education exhibits and about 600 informal scientific presentations (posters), covering a wide range of subspecialties, will be displayed in the Lakeside Learning Center at RSNA 2010. All posters are presented digitally; education exhibits are a mix of digital and backboard panel presentations.

Claire E. Bender, M.D.
Chair, RSNA Education Exhibits Committee

Authors of all scientific posters and select education exhibits will discuss their work in 30-minute presentations scheduled for Sunday from 12:30 to 1:30 p.m. and Monday through Thursday from 12:15 to 1:15 p.m.

While only lunch-hour presentations offer *AMA PRA Category 1 Credit™*, all education exhibits and posters are available throughout the day for self-study credit. Extended hours in the Lakeside Learning Center—until 10 p.m. Monday through Thursday—offer attendees the opportunity to view and understand material at their own pace, which can be particularly helpful if sessions and courses prevent them from visiting the Lakeside Learning Center during the day.

The Lakeside Learning Center is designed so someone looking to study a particular area—neuroradiology or radiation oncology, for example—will find cutting-edge science posters and fundamental education exhibits all in one place. Attendees can further maximize their Lakeside Learning Center experience by searching presentations in advance. See the online *RSNA Meeting Program* at *RSNA2010.RSNA.org* or the mobile version at *m.rsna.org.*

Lakeside Learning Center

Level 2, Hall E
Hours of Operation

Sunday	8:00 a.m. – 6:00 p.m.
Monday – Thursday	7:00 a.m. – 10:00 p.m.
Friday	7:00 a.m. – 12:45 p.m.

Explore MOC

Stop by the American Board of Radiology kiosk in the Lakeside Learning Center at RSNA 2010 to learn more about the maintenance of certification (MOC) process and pick up an MOC lapel pin. See Page 18 for more information.

Tweet Your RSNA 2010 Experience

Access Twitter to follow live feeds about RSNA 2010 and contribute Tweets of your own. RSNA staff members will be Tweeting live buzz and information at @RSNA and want you to join in the discussion. Tweet about your experience and interact with others using the hashtag #RSNA10.

Discover myRSNA®

Demonstrations of myRSNA®, the personalized radiology workspace at *myRSNA.org,* will be offered at the newly redesigned RSNA Services kiosk during the annual meeting. In the hands-on workshops, RSNA staff will demonstrate how to create a customized homepage, bookmark and share links, access files anywhere, and more.

Using myRSNA®: Hands-on Workshop

- Monday, November 29
  12:30 - 2:00 p.m.
- Thursday, December 2
  10:30 a.m. - 12:00 pm.

Experience the Simplified Search of the *RSNA Meeting Program Online*

The *RSNA Meeting Program* online is enhanced for 2010 as the big, 1,200-page printed program has been replaced with a printed "Program in Brief." Abstracts and learning objectives will not be available in the printed program but are instead available online only. New this year, program updates will be available online only rather in the *Daily Bulletin.*

All special interest/controversies/hot topic sessions, multisession and refresher/informatics courses and vendor computer workshops are available in RSNA's online meeting program. Along with searching for courses by title and name of presenter, users can search the online program by day, area and subspecialty, and sort findings from earliest to latest.

To view the online meeting program, go to *RSNA2010.RSNA.org.*

Meet the Editors

Stop by the Journals, News & *RadiologyInfo.org* area in the newly redesigned RSNA Services to meet the editors of RSNA's two peer-reviewed journals. *Radiology* Editor Herbert Y. Kressel, M.D., and *RadioGraphics* Editor William W. Olmsted, M.D., will be on hand to answer questions and discuss these prestigious medical journals with attendees.

Dr. Kressel

Dr. Olmsted

Dr. Kressel

- Monday, Nov. 29
  10:00 – 10:30 a.m.
- Tuesday, Nov. 30
  10:30 – 11:00 a.m.

Dr. Olmsted

- Monday, Nov. 29
  10:30 – 11:00 a.m.
- Tuesday, Nov. 30
  10:00 – 10:30 a.m.

Check Out Activities for Residents

RSNA 2010 features offerings especially relevant to residents and fellows:

AAPM/RSNA Physics Tutorial for Residents

"Communicating Radiation Dose, Risks, and Benefits in Medical X-ray Imaging Patient Dose" is the topic of this year's Physics Tutorial for Residents, presented by RSNA and the American Association of Physicists in Medicine (AAPM) on Saturday, November 27, 12:00 – 2:00 p.m., in Room E351. Recent media coverage of the risks associated with the increasing number of imaging procedures in the U.S. and worldwide can scare patients away from needed procedures and force providers to defend the procedures. Effective communication about the benefits and risks of radiation has never been more important. Residents will learn how to communicate radiation dose, risks and benefits to patients, the public and the media.

Residents Lounge

The residents lounge at RSNA 2010 provides RSNA members-in-training and non-member residents a place to relax and network while enjoying complimentary refreshments. The lounge is located in the Lakeside Learning Center (Hall E, Level 2, across from the entrance to Arie Crown Theater) and is open Sunday through Thursday, 8:00 a.m. – 6:00 p.m., during the annual meeting.

Important Registration Information

Registration Materials Mailed

RSNA 2010 registration materials were mailed to North Americans who registered by November 5 and international attendees who registered by October 22. If your registration materials do not arrive in time, please plan to visit one of the Help Centers onsite, located in the Grand Concourse and Lakeside Center, to have the contents reprinted. RSNA encourages attendees to do this on Saturday, November 28, to avoid long lines later in the week.

For those who registered after these dates, documents will be available for pickup onsite at Professional Registration, located in the Lakeside Center Ballroom.

Name Badge Required

You must wear your name badge at McCormick Place to attend RSNA courses and events or to enter the exhibit halls. RSNA will use radiofrequency identification (RFID) badge scanning technology within the Technical Exhibit halls. No personal information is stored in the RFID badge, only an ID number. Should you wish to "opt out" of this program, please visit either Help Center onsite located in the Grand Concourse or Lakeside Center.

Program in Brief, Lanyard and Official Meeting Bag Offered

One complimentary copy of the *RSNA 2010 Program in Brief,* official meeting bag and lanyard are available with the presentation of a voucher at the distribution counters located in the South Building and Lakeside Center.

Onsite Registration

Those who need to register onsite should proceed to Professional Registration in the Lakeside Center Ballroom.

Hours of Operation

- Saturday, Nov. 27
  12:00 – 6:00 p.m.
- Sunday, Nov. 28 – Thursday, Dec.2
  7:30 a.m. – 5:00 p.m.
- Friday, Dec. 3
  7:30 a.m. – 12:00 p.m.

For more information about registration at RSNA 2010, including fees, visit *RSNA.org/register,* e-mail *reginfo@rsna.org,* or call 1-800-381-6660 x7862.

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RSNA 2010 Technical Exhibition

Technical Exhibition Spans Three Halls

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

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

RSNA.org/showcase

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

Technical Exhibit Hours

Hall A (South Building), Hall B (North Building) and Hall D (Lakeside Center)

Sunday–Wednesday	10:00 a.m. – 5:00 p.m.
Thursday	10:00 a.m. – 2:00 p.m.

Attendees can also find exhibitors via the Company Locators at the entrance to each exhibit hall and You Are Here kiosks placed throughout the Technical Exhibition.

New Products and Services Spotlighted in *Daily Bulletin*

Many exhibiting companies use the New Product & Services section of the RSNA *Daily Bulletin* to promote products and services released within the last 12 months. Published Sunday through Thursday, the *Daily Bulletin* is the official daily newspaper of the annual meeting and provides overnight coverage of meeting news. Each edition of the *Daily Bulletin* features a unique New Products & Services section. the *Daily Bulletin* is available at McCormick Place and also online at *RSNA.org/bulletin*.

Register Onsite for Investment Seminars

RSNA will offer two investment seminars at McCormick Place during RSNA 2010.

Saturday, November 27
1:00 – 5:00 p.m.

Effective Real Estate Investment Strategies, presented by J. Michael Moody, M.B.A.

Monday, November 29
4:30 – 7:30 p.m.

Asset Protection and Retirement Planning in the New Era, presented by Barry Rubenstein, B.S., J.D., L.L.M.

Register for these seminars onsite at McCormick Place Room E271A for Real Estate; E253AB for Asset Protection. You must be registered for the annual meeting in order to enroll in these seminars. These seminars do not qualify for *AMA PRA Category 1 Credit*™. For more information, contact the RSNA Education Center at 1-800-381-6660, x7772 or e-mail *ed-ctr@rsna.org*.

Public Information Activities Address the Media, Patients

Breast Cancer, Osteoarthritis, Sleep Apnea among RSNA 2010 Press Conference Topics

More than 170 members of the news media typically attend the annual meeting, generating thousands of stories appearing in print and electronic media in the U.S. and around the world. Among the press conferences to be presented in 2010 are:

- Light Exercise May Prevent Osteoarthritis
- Belly Fat Puts Women at Risk for Osteoporosis
- Women With Personal History of Breast Cancer Should be Screened with MR Imaging
- Cancer Risk From Medical Radiation May Have Been Overestimated
- Walking Slows Progression of Alzheimer's
- People With Sleep Apnea at Higher Risk for Aggressive Heart Disease
- Annual Breast Cancer Screening Beginning at Age 40 Reduces Mastectomy Risk
- Screening Tool May Better Identify Heart Disease in African Americans
- Diagnosis Uncertainty Increases Anxiety in Patients
- Virtual Biopsy May Allow Earlier Diagnosis of Brain Disorder in Athletes
- New Study Reports Effects of Endurance Running
- Acupuncture Changes Brain's Perception and Processing of Pain
- Researchers Use Patient's Own Blood to Treat Hamstring Injury
- CT Best at Uncovering Drug Mule Payload

2010 Outstanding Researcher, Educators Announced

RSNA will honor three individuals at RSNA 2010 for their contributions to research and education: Charles A. Mistretta, Ph.D., is Outstanding Researcher; Gillian Lieberman, M.B.B.Ch., and Kitt Shaffer, M.D., Ph.D., are Outstanding Educators.

Outstanding Researcher

Charles A. Mistretta, Ph.D., has transformed medical imaging and human health throughout his career with groundbreaking contributions at multiple times and in multiple subfields. The influence of Dr. Mistretta—director of the world renowned International Center for Accelerated Medical Imaging at the University of Wisconsin—also extends to the dozens of exceptional researchers he has mentored.

Dr. Mistretta

Many people associate Dr. Mistretta with digital subtraction angiography (DSA), which he and his team began researching almost 40 years ago. The technique, distributed worldwide, is still the gold standard against which the image quality of new angiographic techniques is measured. Patent royalties from DSA presently rank second among all inventions in the history of the University of Wisconsin, where Dr. Mistretta currently serves as John R. Cameron Professor of Medical Physics and vice-chairman of the Department of Medical Physics.

Dr. Mistretta is also an innovator in MR angiography, leading his team to a number of breakthrough techniques for fast acquisition and unique processing of data, including Vastly undersampled Isotropic PRojection imaging (VIPR), which permits data acquisition accelerations of one to two orders of magnitude relative to conventional Cartesian acquisition. Dr. Mistretta and his team are currently working on 4D DSA.

Outstanding Educators

Gillian Lieberman, M.B.B.Ch., has made her name synonymous with radiology education not only as a teacher, but also as an innovator. For 30 years she has capitalized on new technology to expand both her content and her audience.

Dr. Lieberman

Dr. Lieberman is a director of Medical Student Radiological Education at Harvard Medical School, directs three Harvard clerkships at the Beth Israel Deaconess Medical Center (BIDMC) in Boston, and is co-director of radiologic education at BIDMC. She is a senior fellow of the Cannon Society at Harvard Medical School, a charter education scholar for the Carl J. Shapiro Institute for Education and Research, and a charter scholar of the Academy at Harvard Medical School.

She is perhaps best known for her web-based interactive teaching collections known as "Lieberman's eRadiology." The first offering is a set of 10 interactive web-based primary care radiology textbooks known as "Lieberman's Primary Care Radiology." Another of her innovations, her "Interactive Tutorials in Radiology," have replaced the Lucy Squire tapes for teaching radiology at Harvard and are used nationally and internationally.

Dr. Lieberman is also devoted to providing global free access to effective teaching materials to improve the quality of medical training, particularly in developing and underserved nations.

Kitt Shaffer, M.D., Ph.D., is known for her mastery of cutting-edge technology and evidence-based education innovations. She is vice-chair for education at Boston Medical Center and a professor of radiology at Boston University School of Medicine.

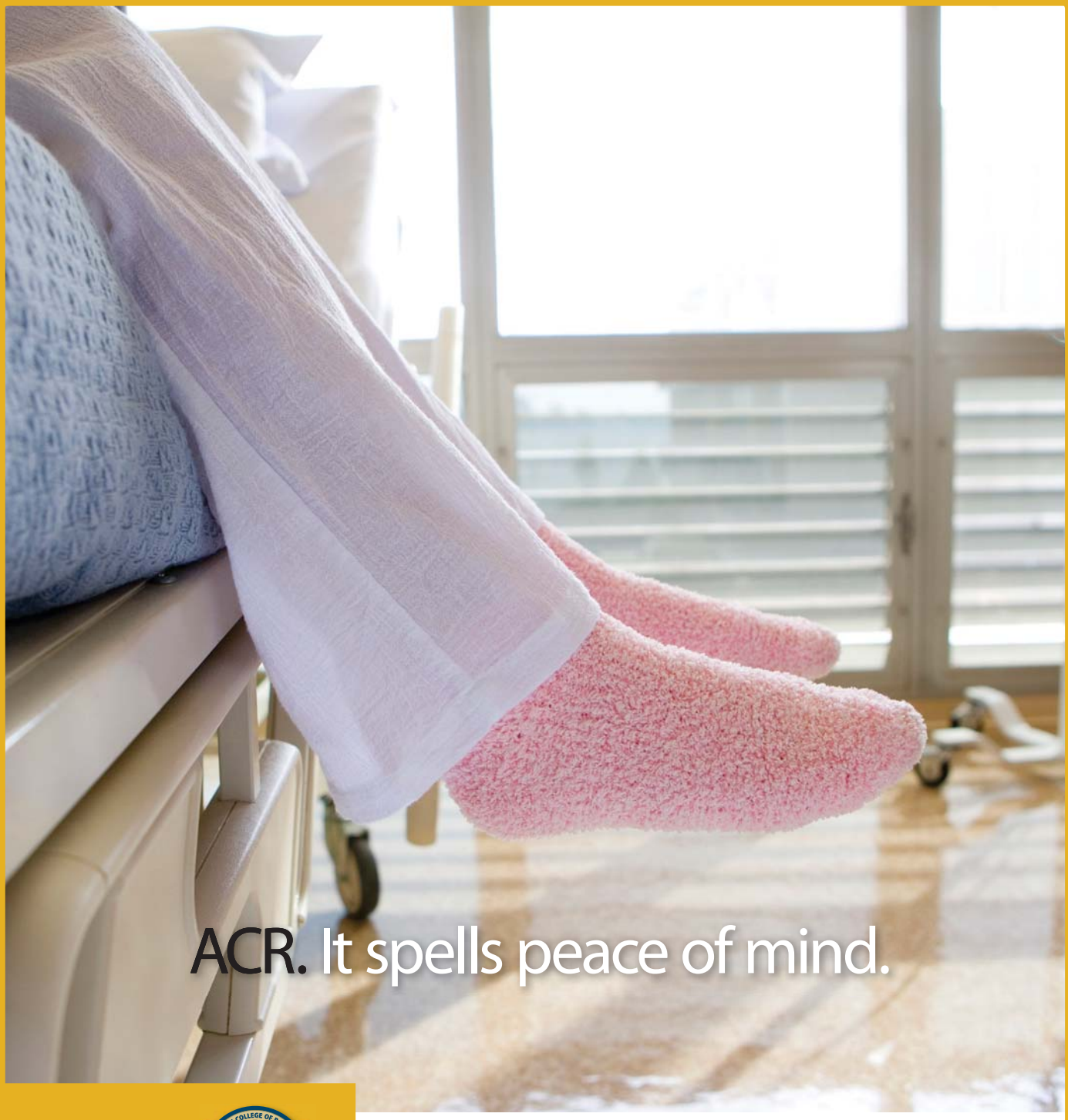
Dr. Shaffer

Previously, as the director of undergraduate medical education for the Cambridge Health Alliance in Cambridge, Mass., Dr. Shaffer developed the radiology portion of the Cambridge Integrated Clerkship, an innovative multidisciplinary revamping of the traditional third year of medical school. She is also known for her work beyond the typical resume of a radiology educator—in particular, in 2004 she assumed the position of director of Harvard Medical School's gross anatomy course.

A PACS authority, Dr. Shaffer helped develop the radiologic consultative service at Dana Farber Cancer Institute and spearheaded the development of a PACS teaching file for use throughout Cambridge Health Alliance.

Dr. Shaffer is a founding member and past-president of the Alliance of Medical Student Educators in Radiology (AMSER) and helped develop national curricular guidelines for medical student education in radiology. She traveled to Shanghai, China, in 2008 as part of the RSNA International Visiting Professor program and leads a mentoring program for RSNA Research & Education Foundation applicants from the developing world.

A full biography of Dr. Mistretta will appear in the January 2011 issue of *Radiology*. Full biographies of Drs. Lieberman and Shaffer appear in the November-December 2010 issue of *RadioGraphics*.



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