

# RSNA *News*

## Expanded Peptide Potential Revealed in Surprise Discovery



Photo by Keith Weir/Johns Hopkins Medicine

### Also Inside:

- fMRI Measures Effect of Treatment on HIV-related Cognitive Impairment
- CTPA Performance Challenges Approach to Pulmonary Embolism Treatment
- My RSNA® Makes *RSNA.org* Practical and Personal
- Australian Quality Program Quickly Yields Applicable Results

**RSNA 2008 Preliminary Program  
on Page 22**

# RSNA *News*

## 1 Announcements

## 2 People in the News

## 4 Board of Directors Report

### Feature Articles

## 6 fMRI Measures Effect of Treatment on HIV-related Cognitive Impairment

## 8 Expanded Peptide Potential Revealed in Surprise Discovery

## 10 CTPA Performance Challenges Approach to Pulmonary Embolism Treatment

## 12 My RSNA® Makes RSNA.org Practical and Personal

## 14 Australian Quality Program Quickly Yields Applicable Results

### Funding Radiology's Future®

## 16 R&E Foundation Donors

## 17 Journal Highlights

## 18 Radiology in Public Focus

## 19 RSNA: Working for You

## 20 Program and Grant Announcements

## 21 Meeting Watch

## 24 Product News

## 25 RSNA.org

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## RSNA 2007 Opening Session Presentations Available Online

**P**LENARY SESSION presentations from RSNA 2007 can now be viewed online. Go to [RSNA.org/virtual2007.cfm](http://RSNA.org/virtual2007.cfm) to see:

- The Future of Radiology—R. Gilbert Jost, M.D.
- Leveraging Informatics to Enhance Radiology Relevance and Value—Paul J. Chang, M.D.
- With Worldwide Image Distribution, Will Radiology Become a Commodity?—James P. Borgstede, M.D.
- Major Trends in the Imaging Sciences—Elias A. Zerhouni, M.D., Director, National Institutes of Health



## Nobelprize.org Launches Imaging Life

*Nobelprize.org*, the official Web site of the Nobel Foundation, has launched Imaging Life, an educational multimedia production showing how Nobel Prizes in scientific and medical imaging have changed the way in which people view themselves and the world around them.

Intended for students at undergraduate level and higher, Imaging Life features:

- An introductory video giving a snapshot of the historical developments of imaging
- A navigable timeline showing each Nobel Prize breakthrough in imaging, from X-rays to electron microscopes, and how they relate to each other
- Images, slideshows and video interviews with Nobel Laureates
- Articles revealing the stories behind imaging breakthroughs, such as how physicists helped to solve biology's greatest riddle and how the Beatles played an important part in a medical revolution

Imaging Life can be accessed at [nobelprize.org/educational\\_games/physics/imaginglife](http://nobelprize.org/educational_games/physics/imaginglife).



## CMS Report Predicts Healthcare Spending Increases

The Centers for Medicare and Medicaid Services (CMS) has released its projections that growth in healthcare spending in the U.S. will close at 6.7 percent for 2007, with average annual growth expected to remain near that rate through 2017.

The analysis was prepared by the CMS Office of the Actuary and published online by the journal *Health Affairs*. Over the full projection period (2007-2017), annual growth in health spending is anticipated to be higher than annual growth in both the overall economy (4.9 percent) and general inflation (2.4 percent).

As a percentage of gross domestic product (GDP), healthcare spending is projected to increase to 16.3 percent in 2007 from 16.0 percent in 2006. By the end of the projection period, healthcare spending in the U.S. is expected to reach just over \$4.3 trillion and comprise 19.5 percent of GDP.

The healthcare spending projection data can be found on the CMS Web site at [www.cms.hhs.gov/NationalHealthExpendData/03\\_NationalHealthAccountsProjected.asp](http://www.cms.hhs.gov/NationalHealthExpendData/03_NationalHealthAccountsProjected.asp).

## Newest Installment of RSNA History Series Available

The next chapter in the "History of the Radiological Society of North America" details significant events in 2003–2007, including the introduction of RSNA's Medical Imaging Resource Center (MIRC™) and the redesign of *Radiology*.

The history series is available online at [RSNA.org/About/history/articles.cfm](http://RSNA.org/About/history/articles.cfm). To link directly to the newest installment, Part 26, go to [RSNA.org/About/history/history26.cfm](http://RSNA.org/About/history/history26.cfm).

### MEDICAL IMAGING COMPANY NEWS

#### Merger of Infinite Planning Solutions and Radiation Oncology Resources Announced

■ Infinite Planning Solutions, of Goshen, Ind., and Radiation Oncology Resources, of McMinnville, Ore., have announced a merger. The merged company will operate as Radiation Oncology Resources, Inc., based in Goshen. Among the services provided by the new company will be intensity modulated radiation therapy implementation, dosimetry on demand, quality assurance audits and training.

#### Analogic to Acquire Copley Controls

■ Analogic Corporation, of Peabody, Mass., has announced it will acquire Copley Controls Corporation of Canton, Mass. for approximately \$68.75 million. Analogic is an original equipment manufacturer (OEM) supplier of radiofrequency amplifiers for MR imaging systems. Copley supplies OEMs with gradient amplifiers for MR imaging and precision motion control systems.

## CMS Reverses Proposed Decision on Cardiac CTA

The Centers for Medicare & Medicaid Services (CMS) has reversed a proposed decision to limit coverage of cardiac CT angiography (CTA), allowing decisions about coverage to continue to be made by contractors at the state level.

The North American Society for Cardiac Imaging, American College of

Radiology and American College of Cardiology were among the organizations that objected to the coverage change proposed last December, saying it ignored many studies showing CTA's utility and efficacy.

CMS proposed creating a National

Coverage Determination, under which CTA would have been covered only in Medicare beneficiaries with two specific clinical indications of coronary artery disease (CAD) via the Coverage with Evidence Development process, which allows coverage in connection with clinical trials.



## PEOPLE IN THE NEWS

### McLoud is Honorary Member of Spanish, Italian Societies

2008 RSNA President **Theresa C. McLoud, M.D.**, will be made an honorary member of the Spanish Society of Radiology at its meeting this month in Sevilla. Also this month, she will be named an honorary member of the Italian Society of Medical Radiology at its meeting in Rome.

Dr. McLoud is associate radiologist-in-chief and director of education for the Department of Radiology at Massachusetts General Hospital in Boston and a professor of radiology at Harvard Medical School.



**Theresa C. McLoud, M.D.**

### Munden is Chair at UAB

The University of Alabama at Birmingham has appointed **Reginald F. Munden, M.D., D.M.D., M.B.A.**, as the Witten-Stanley Endowed Chair of Radiology and chair of the Department of Radiology. Dr. Munden formerly was interim chair of the Department of Diagnostic Radiology at M.D. Anderson Cancer Center in Houston and associate professor of diagnostic radiology at The University of Texas Medical School at Houston.



**Reginald F. Munden, M.D., D.M.D., M.B.A.**

### RANZCR Names Khangure as President

**Mark Khangure, M.D., F.R.A.N.Z.C.R.**, is the new president of the Royal Australian and New Zealand College of Radiologists (RANZCR). Currently in full-time private practice as a neuroradiologist in Perth, Western Australia, Dr. Khangure was head of the Department of Diagnostic and Inter-



**Mark Khangure, M.D., F.R.A.N.Z.C.R.**

ventional Radiology and director of imaging services at Royal Perth Hospital for nine years.

### Brody Retires as Hopkins President

**William R. Brody, M.D., Ph.D.**, who delivered the Annual Oration in Diagnostic Radiology at RSNA 2005, is stepping down as president of The Johns Hopkins University in Baltimore after 12 years. Prior to becoming president of Johns Hopkins, Dr. Brody was a professor of radiology and provost of the Academic Health Center at the University of Minnesota in Minneapolis and previously served as the Martin Donner Professor and director of the Department of Radiology at Johns Hopkins.



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

## IMAGING TECHNOLOGY

# Question of the Month

**Q** A radiology resident asks, "In our computed radiography system, what is a simple way to understand the S number?"  
[Answer on page 25.]

## ACR Names Gold Medalists, Honorary Members

**T**HE American College of Radiology (ACR) awarded its gold medal to **Lawrence W. Davis, M.D., M.B.A.**, **Eric J. Hall, D.Sc.**, and **Valerie P. Jackson, M.D.**, at its annual meeting this month.

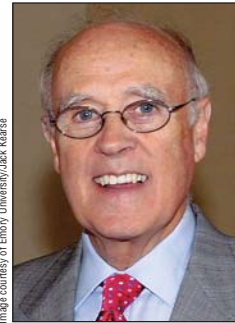
Dr. Davis is professor and chair of the Department of Radiation Oncology at Emory University School of Medicine in Atlanta. Dr. Hall, an RSNA Outstanding Researcher in 1996, is director of the Center for Radiological Research at the College of Physicians & Surgeons of Columbia University in New York. He is also the Higgins Professor of Radiation Biophysics and a professor of radiation oncology and radiology at Columbia and radiation biologist at The Presbyterian Hospital of New York. A member of the *RSNA News* editorial board, Dr. Jackson is the John A. Campbell Professor of Radiology and chair of the Department of Radiology at Indiana University in Indianapolis.

ACR also named three honorary members at its annual meeting. **Lizbeth Kenny, M.D.**, is director of cancer services for the Central Area Health Service in Queensland, Australia, and served as president of the Royal Australian and New Zealand College of Radiologists from 2005 to 2007.

**Andrzej Kulakowski, M.D.**, is president of the Maria Sklodowska-Curie Foundation in Warsaw, Poland. **Claude Henri Manelfe, M.D.**, served as chair of the Department of Radiology at the University of Toulouse, France, from 1974 to 2004.



**Lawrence W. Davis, M.D., M.B.A.**



**Eric J. Hall, D.Sc.**



**Valerie P. Jackson, M.D.**



**Lizbeth Kenny, M.D.**



**Andrzej Kulakowski, M.D.**



**Claude Henri Manelfe, M.D.**

### IN MEMORIAM:

#### **Harvey Picker, M.B.A.**

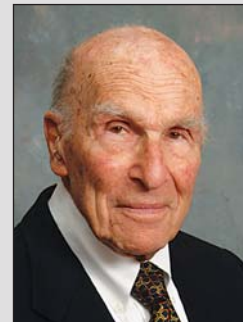
**Harvey Picker, M.B.A.**, of Camden, Maine, named an RSNA honorary member in 1997 and the second largest individual donor to the RSNA Research & Education (R&E) Foundation, died March 22 at the age of 92.

Renowned as a physicist, inventor, educator, businessman and philanthropist, Picker headed for many decades Picker International, the medical imaging company founded by his father in 1933. Picker guided the company into such groundbreaking developments as cobalt therapy

for cancer and nuclear imaging diagnostics.

Picker was also recognized as a tireless volunteer, serving many cultural, business and healthcare organizations locally and nationally. He served on the R&E Foundation Board of Trustees from 1991 to 1997 and donated more than \$300,000 to the Foundation.

In 1994, Picker assumed operations of the Picker Institute, Inc., a global independent non-profit organization he founded to advance the principles of patient-centered care.



**Harvey Picker, M.B.A.**

### *My Turn*

#### ONE RADIOLOGIST'S VIEW

My Turn is on hiatus and will return in the June 2008 issue.

### **RSNA**News

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

# RSNA Board of Directors Report

**A**T ITS March meeting, the RSNA Board of Directors approved a 2008-2011 strategic plan for the Society. The plan keeps in place the same basic objectives for RSNA, including fostering international relationships, meeting members' professional development needs and promoting high-quality education and research. Recognizing the completion of some prior initiatives, the Board outlined some new strategies for meeting the Society's goals.

## Fostering International Relationships

The new strategic plan includes a five-year international strategy, encompassing the Society's many efforts to lead global radiology activities and provide valuable educational opportunities to foreign radiologists. RSNA will continue promoting the Society through visits of the RSNA president and informational booth to radiology meetings around the world each year. RSNA will also continue to encourage participation by foreign radiologists in the RSNA annual meeting and submission of abstracts for presentation consideration. Other activities identified in the international strategy include the outreach programs of the RSNA Committee on International Relations and Education (CIRE), technology and education programs geared toward assisting radiologists in other countries and collaboration with foreign radiology societies.

The RSNA International Visiting Program will travel to Estonia, Bolivia, South Africa and Argentina in 2009. The IVP program will also send a team to Mexico again next year. In 2008, IVP teams will visit China, Nigeria, Vietnam and Mexico.

## Meeting Professional Development Needs

An RSNA Education Committee will be formed at RSNA 2008. Staying on top of breaking developments in clinical practice and research, committee members will identify the educational needs of RSNA members and the emerging technologies through which the Society can serve them.

RSNA continues to help members streamline and standardize their practices in the area of informatics with an effort to develop and publish standard report templates using the RadLex® radiology lexicon and current approaches to structured healthcare documents. The new RSNA Radiology Reporting Subcommittee of the Radiology Informatics Committee will hold a consensus meeting on the structured radiology report in summer 2008 at RSNA Headquarters in Oak Brook, Ill. The workshop will bring together representatives of radiology subspecialty organizations, other medical specialties and technical experts to discuss the status of structured radiology reporting.

Planning for RSNA 2008 continues. As the number of abstracts submitted for presentation consideration at the RSNA annual meeting has increased over the past several years, a number of the Scientific Program Committee subcommittees charged with reviewing the abstracts have been expanded.

The New Horizons Lecture at RSNA 2008 will be dedicated to the memory of Samuel J. Dwyer III, Ph.D.,



**Hedvig Hricak, M.D., Ph.D.,  
Dr. h.c.**  
*Chair, 2008 RSNA Board  
of Directors*

and the Annual Oration in Radiation Oncology to the memory of Steven A. Leibel, M.D.

Looking ahead to RSNA 2009, RSNA is working with the American Society of Radiologic Technologists (ASRT®) to develop an education track for radiologic technologists. The new track will complement current programs for allied professionals offered by the Associated Sciences Consortium.

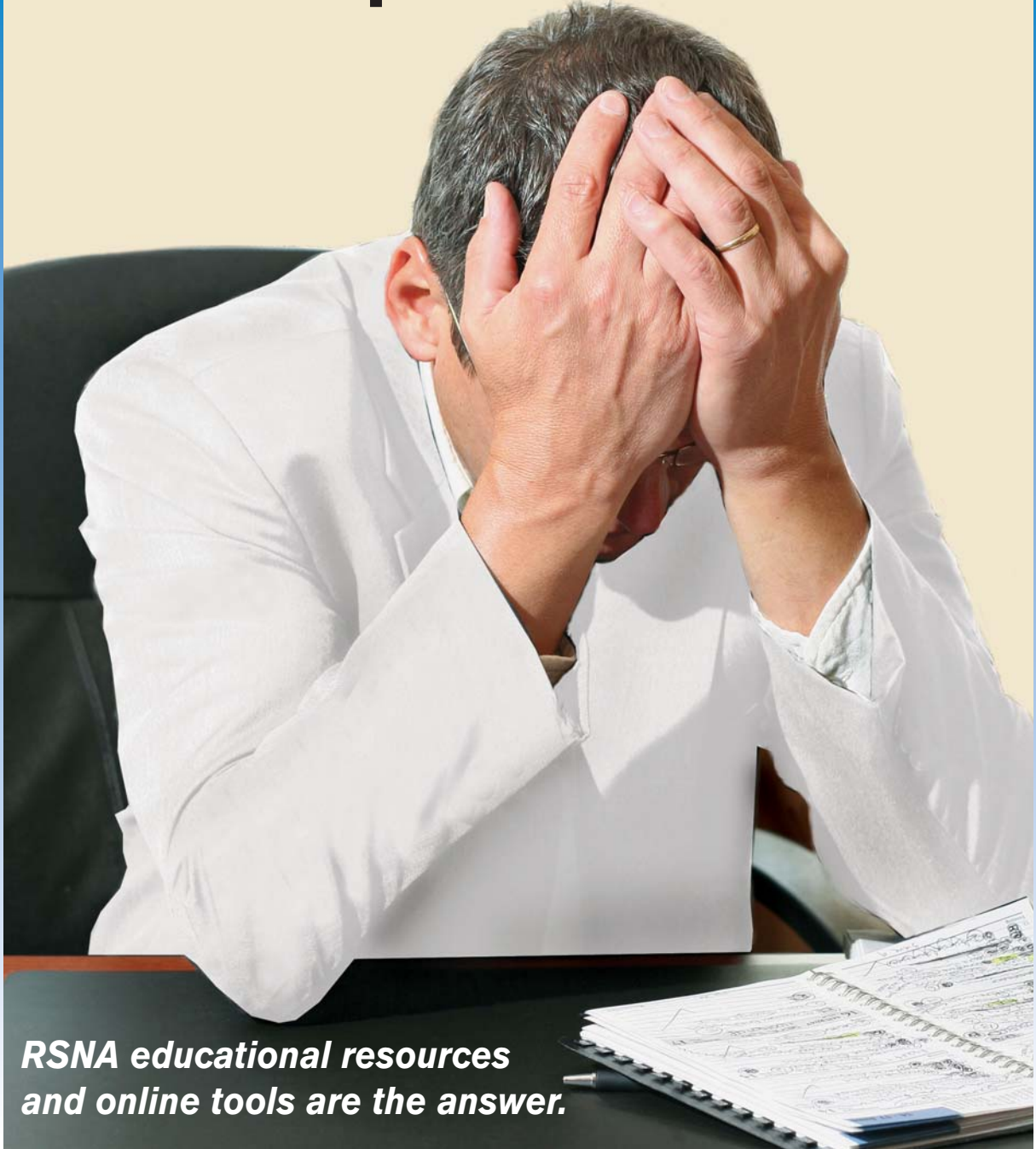
As it focuses its education resources on other projects, RSNA will discontinue RSNA Highlights™, the pilot educational conference held in 2007 and 2008.

## Promoting High Quality Science and Research

RSNA continues to establish its role in the evolution of imaging biomarkers and quantitative imaging. At the Imaging Biomarkers Roundtable in Oak Brook last month, representatives of groups charged with evaluating biomarkers discussed the status of their various projects and how to coordinate their efforts. RSNA Science Advisor Daniel Sullivan, M.D., continues to work with an ad-hoc group advising RSNA on its quantitative imaging activities. The group will come together for the Toward Quantitative Imaging meeting this summer in Oak Brook and is exploring ways to promote quantitative imaging through the RSNA annual meeting, a white paper, intersociety collaborations and other forums.

*Continued on Page 7*

# Stressed Over Meeting MOC Requirements?



*RSNA educational resources  
and online tools are the answer.*

**Stress Relief\*** at [RSNA.org/education/RGMOC](https://www.rsna.org/education/RGMOC)

\* Provided free to RSNA members (or call 1-800-272-2920)

**RSNA** Education

# fMRI Measures Effect of Treatment on HIV-related Cognitive Impairment

**R**ESearchers are using neuroimaging to assess the response of the central nervous system to HIV infection and the drugs used to treat it.

While antiretroviral drug regimens have significantly prolonged the lives of individuals infected with HIV, long-term use has been associated with an increase in the prevalence of HIV-related brain and central nervous system disorders. To evaluate the effect of different highly active antiretroviral treatments (HAART) on HIV-associated cognitive impairment, researchers have turned to functional magnetic resonance imaging (fMRI).

Since the development of HAART, clinicians have noted that central nervous system-related deficits are not as severe as the frank dementia seen prior to the advent of these medications. However, the symptoms are still significant enough to have an impact on quality of life, researchers said.

Beau Ances, M.D., Ph.D., an assistant professor of neurosciences at the HIV Neurobehavioral Research Center at the University of California, San Diego (UCSD), is using fMRI to study whether drugs with higher penetration across the blood/brain barrier lead not only to improvement in neurocognition but also to improvement measured by neuroimaging. He said he hopes that results from this trial will allow clinicians to tailor regimens for particular patients.

“Even though patients with HIV can now live relatively healthy lives with the help of these medications, about 20 to 30 percent of them will eventually develop neurocognitive impairment,” said Dr. Ances. “These patients often

present with slowed movements and mild memory loss. While we know that these drugs are beneficial, we also know that certain drugs can be toxic to the peripheral nervous system. We need to be sure that as new drugs are developed, they do not cause injury to the central nervous system.”

## HIV Quickly Infiltrates Nervous System

Researchers from Johns Hopkins University School of Medicine in Baltimore and Washington University School of Medicine in St. Louis also are investigating the central nervous system effect on subjects given high-versus low-penetration antiretrovirals. The fMRI studies will be performed only at UCSD.

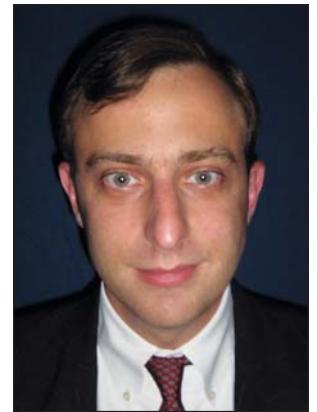
When a person is infected with HIV, the disease gets into the brain within “a couple of hours to a couple of days,” said Dr. Ances.

After infiltrating the central nervous system, the virus can cause inflammation, nerve cell damage and abnormalities in the brain’s white matter. Each of these can affect nerve cell function within the brain, causing learning and memory deficits, impairment of cognitive or motor skills and even dementia.

To date, about 50 patients with



Dennis Kolson, M.D., Ph.D.  
University of Pennsylvania



Beau Ances, M.D., Ph.D.  
University of California, San Diego

documented HIV infection and associated neurocognitive impairment have been studied at UCSD using fMRI. A total of 120 patients will be enrolled in the study. In order for researchers to compare drugs that affect the central nervous system to those that do not, study participants’ baseline brain function will be evaluated with a neurological examination and lumbar puncture.

Functional neuroimaging measures such as changes in cerebral blood flow and metabolism will be assessed in subjects as they perform simple tasks such as fingertapping

or watching a flashing checkerboard.

The importance of these neuroimaging studies is that they are the only way, in living patients, to assess the brain’s response to this disease and its treatment, said Dr. Ances. “It’s so important to gather these data and use them to develop the best techniques to treat these people.”

*We need to be sure that as new drugs are developed, they do not cause injury to the central nervous system.*

Beau Ances, M.D., Ph.D.



## Antiretroviral Drugs Alone Inadequate to Protect Brain

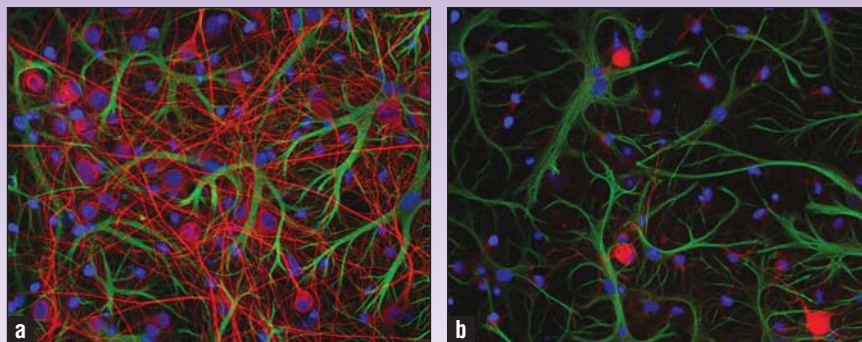
Since 1992, Dennis Kolson, M.D., Ph.D., an associate professor of neurology at the University of Pennsylvania, has been researching the clinical manifestations of HIV infection and how the virus damages the brain. He said that after more than 10 years of neuroimaging studies, such as MR imaging and MR spectroscopy, HIV researchers have discovered two very important concepts.

“The first is that effective antiretroviral therapy offers some degree of protection of the brain, preserving it to some degree, or at least slowing the rate of progression of deficits of neurological function and cognition,” said Dr. Kolson. “Drugs that penetrate more deeply into the brain are more effective at protecting the brain.

“The second conclusion is that antiretroviral drugs are not adequate on their own to protect the brain,” Dr. Kolson continued. “We are most likely going to need additional drugs, which will have to be used early in infection in order to have a long-term effect.”

Cognitive impairment among people infected with HIV was not considered a major problem a decade ago because people with the disease were not living as long, said Dr. Kolson. However, as people live longer with HIV/AIDS, their likelihood of developing cognitive impairment increases, he said.

“The cognitive impairment is a consequence of effectively prolonging people’s lives and the effect of taking these drugs long-term, as well as the



### Neuronal damage caused by HIV.

A healthy rat brain cell culture is shown in panel (a), with neurons labeled in red and astrocytes (supporting cells) labeled in green. Panel (b) shows a similar culture that was exposed to HIV-infected human cells for 24 hours, resulting in a dramatic loss of the neuron population. Cell nuclei are labeled blue. Such model systems are used to study the mechanisms by which HIV infection causes damage in the brains of infected individuals.

Photo courtesy of Dennis Kolson, M.D., Ph.D.

effect of HIV itself in an older population,” he said.

Researchers said they hope the new study will give them a better idea of what the antiretroviral drugs are doing and enable them to develop more effective drugs for addressing brain issues. A number of research laboratories, including Dr. Kolson’s, are studying model systems of HIV infection of brain cells to determine how such cells are damaged and how strategies can be developed to protect the different cells in the brain. Combining such basic research with clinical neuroimaging studies, like those being con-

ducted by Dr. Ances and collaborators, will hopefully lead to the development of more effective approaches to protecting the brain from the damaging effects of HIV, Dr. Kolson said.

“It’s no longer okay to just extend the length of life for people with HIV,” said Dr. Kolson. “We now have to develop the best treatments to help the quality of life as well.” □

### Learn More

■ For more information about the HIV Neurobehavioral Research Center at the University of California, San Diego (UCSD), go to [hnrc.ucsd.edu](http://hnrc.ucsd.edu).

## Neuroradiology at RSNA 2008

NEURORADIOLOGY will be the focus of an RSNA 2008 series course. Series courses combine education and research on related topics. Along with the series course, scheduled for Tuesday morning, Case-based Review of Neuroradiology is scheduled for all day Thursday. Registration for these and all RSNA 2008 courses begins June 30. More information is available at [RSNA2008.RSNA.org](http://RSNA2008.RSNA.org).



**RSNA2008**  
Personal Learning in the  
Global Community

## RSNA Board of Directors Report

Continued from Page 4

The Quantitative Imaging Biomarkers Alliance—a group of stakeholders from the pharmaceutical and equipment industries, imaging informatics companies, government agencies, imaging societies and clinical trials—met during RSNA 2007 and are proceeding with their 2008 work plan to promote quantitative imaging. The project is to be

modeled after the process used by the Integrating the Healthcare Enterprise (IHE®) initiative in the area of imaging informatics. This group will hold a two-day kickoff meeting this month.

Having recently received positive feedback about *RadioGraphics* via the

2007 reader survey, RSNA is extremely pleased that *RadioGraphics* Editor William W. Olmsted, M.D., has agreed to extend his contract through 2011.

**HEDVIG HRICAK, M.D., PH.D., DR. H.C. CHAIRMAN**, 2008 RSNA BOARD OF DIRECTORS

■ Note: In our continuing efforts to keep RSNA members informed, the chairman of the RSNA Board of Directors will provide a brief report in *RSNA News* following each board meeting. The next RSNA Board Meeting is in June 2008.

# Expanded Peptide Potential Revealed in Surprise Discovery

**J**OHNS HOPKINS researchers aren't sure whether they would call their recent discovery a "happy accident," but they would at least chalk it up to a great bit of luck.

While tagging peptides to see how well they bonded to colorectal cancer cells, gastroenterology researchers at The Johns Hopkins School of Medicine were surprised to find that the radioactive phosphorous  $^{32}\text{P}$  tag was actually being absorbed into the cancerous cells. The surprising discovery suggests that such  $^{32}\text{P}$ -labeled peptides have the potential for use both as highly effective radiation treatment delivery systems and as a method of detecting cancerous cells and growths in the colon.

John M. Abraham, Ph.D., and Stephen J. Meltzer, M.D., both of the Department of Gastroenterology and Hepatology at The Johns Hopkins University, said they did not set out to test radiation cell-delivery systems.

"The original design of the experiments employed  $^{32}\text{P}$  merely as a tag that could easily be followed and quantified," said Dr. Abraham, an assistant professor of medicine. He added that  $^{32}\text{P}$  is primarily used to treat red-blood-cell polycythemia and platelet essential thrombocytopenia. "It was a surprise when we discovered that the  $^{32}\text{P}$  was actually being incorporated into the cellular proteins. After that, we began to research whether this radioisotope might be used therapeutically."

## Smaller is Better

The discovery raises the possibility that  $^{32}\text{P}$  or similarly tagged peptides could deliver radiation treatment directly into the "heart" of a cancerous cell, rather than bombarding it from the outside. This could be especially effective on

thick colon cancer tumors, which are often more resistant to drug penetration. "In the world of molecule therapeutics for the treatment of tumors, the belief is that smaller is better—the smaller an agent is, the better it can penetrate the tumor," said Dr. Abraham. "An antibody molecule is gigantic compared to the tiny peptides we are using—our tiny peptides are less than 3 percent of the size of an antibody molecule."

The therapy might also mean patients would experience fewer side effects such as nausea, gastrointestinal bleeding and low blood cell counts. "Peptides penetrate into tumors more easily and are more rapidly excreted by the kidneys, in turn reducing systemic toxicity," said Dr. Meltzer, the Harry and Betty Myerberg/Thomas R. Hendrix Professor of Gastroenterology and director of the Early Detection Biomarkers Laboratory at Johns Hopkins. Because the peptide contains the human enzyme protein A substrate, the body's immune system

may not attack it, Dr. Meltzer added.

"The initial experiments used peptides of many different sizes, and one of the first peptides that resulted in extremely strong results happened to be a decapeptide with 10 amino acids," said Dr. Abraham.

While generating additional small  $^{32}\text{P}$ -labeled peptides, the researchers found that "of the nine members of the

*It was a surprise when we discovered that the  $^{32}\text{P}$  was actually being incorporated into the cellular proteins. . . . We began to research whether this radioisotope might be used therapeutically.*

**John M. Abraham, Ph.D.**

decapeptide family described in our recent paper, peptide MA5 bound best and transferred more radioisotope to cell lines derived from the human colon adenocarcinomas," said Dr. Abraham. "The peptides vary from one another by one to three amino

acids, and these slight changes can make a great difference in their cellular binding and transfer abilities."

"We think that this random generation strategy will give us an unlimited library of peptides to choose from in designing and matching individualized therapies," said Dr. Meltzer.

## BOOST Returns to RSNA 2008

**T**HE Bolstering Oncoradiologic and Oncoradiotherapeutic Skills for Tomorrow (BOOST) program is back for its second year at RSNA 2008. Designed especially for radiation oncologists, the BOOST program features leaders in radiation oncology, diagnostic radiology, biology and physics. Each day focuses on particular cancers and includes a refresher course on anatomy, natural history and contouring as well as scientific papers and case-based reviews. This year's topics are head and neck on Monday, lung and central nervous system on Tuesday, gastrointestinal and prostate on Wednesday and gynecologic on Thursday. Registration for BOOST and all other RSNA 2008 courses begins June 30. For more information, go to [RSNA2008.RSNA.org](http://RSNA2008.RSNA.org).



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### Imaging Possibility Investigated

“It is hoped that increasing the number of potential peptide candidates will facilitate more options regarding possible imaging and treatment opportunities,” said Dr. Abraham.

The radiation emitted by the peptides also raises the possibility that they could be used to detect cancerous colon cells. Drs. Meltzer and Abraham are now working with Martin Pomper, M.D., Ph.D., of the Department of Radiology at Johns Hopkins, whose research includes small animal imaging in drug development. “We are essentially molecular biologists with a focus on the gastrointestinal tract,” said Dr. Abraham. “It’s important to collaborate with experts in the imaging field. The  $^{32}\text{P}$  radioisotope is not used in current imaging tests, so we are working with Dr. Pomper and his team to develop peptides tagged with radioisotopes suitable for imaging.”

“Particularly in cases where a tumor has already been resected, this test promises to be highly sensitive in detecting recurrences early,” said Dr. Meltzer. “However, it may also be sensitive in detecting primary cancers early. A third use, where it is anticipated to be highly effective, would be to detect and treat metastases. In addition, the same peptides may end up being used to deliver therapy such as radiation to the tumors, killing two birds with one stone.”

According to Dr. Pomper, other radioisotopes being tested include radioiodine, technetium-99m and fluorine-18. Dr. Pomper’s team has been working with Drs. Abraham and Meltzer only for a few months. If all goes as planned, the research will move from the current stage of chemical synthesis into in vitro testing and then to animal models. Depending on those results, the final step would be toxicity testing en route to a clinical trial, which, Dr. Pomper said, is probably a couple of years away. “We’ll start with imaging and if it works we can then pursue therapy,” said Dr. Pomper. He noted that

one important aspect of the work will be “figuring out the mechanism by which these compounds bind.”

Of course, at the end of any such testing comes the potentially long road of FDA approval. Dr. Abraham noted, “We are proposing this as a possible use for imaging and the treatment of colorectal cancer, which is a very prevalent and devastating type of cancer. The FDA has stated that they are trying to put certain therapeutic approaches on a ‘fast-track’ for approval, so this work might fit into that classification.”

### Individualized Therapy Possible

Perhaps the most exciting aspect of the peptide binding discovery, said the researchers, is the hope that similar processes could someday be used on a variety of human cancers. “Another advantage is potential individualized therapy, with a unique peptide tailored to each patient’s individual tumor,” said Dr. Meltzer.

Added Dr. Abraham: “Over 95 percent of all colon cancers are of the adenocarcinoma classification. Although it is too early to tell, we are hopeful that additional work will generate peptides that might be utilized against other types of cancer.”

“This is potentially a big deal if we manage to get past all the aforementioned hurdles,” said Dr. Meltzer. “It could revolutionize the staging, management and surveillance of colon cancer patients.” □



#### ON THE COVER:

Stephen J. Meltzer, M.D. (left), and John M. Abraham, Ph.D., of The Johns Hopkins University in Baltimore, made a surprising discovery while tagging peptides to see how well they bonded to colorectal cancer cells. The researchers found that the radioactive phosphorous  $^{32}\text{P}$  tag was actually being absorbed into the cancerous cells, suggesting  $^{32}\text{P}$ -labeled peptides can potentially be used both as highly effective radiation treatment delivery systems and as a method of detecting cancerous cells and growths in the colon.

Photo by Keith Weller/Johns Hopkins Medicine

# CTPA Performance Challenges Approach to Pulmonary Embolism Treatment

**A** RECENT study comparing CT pulmonary angiography (CTPA) and V/Q scanning to diagnose pulmonary embolism (PE) raises important questions about the clinical implications of the vastly increased information provided by CTPA.

The study, published in the Dec. 19, 2007, issue of *The Journal of the American Medical Association (JAMA)*, indicated that CTPA appears to be a safe alternative to V/Q scanning for excluding PE but CTPA also detects significantly more clots than V/Q. Therein lies a potential problem, said the study authors, pointing out that many of these additional diagnoses may be clinically insignificant and lead to potentially dangerous and costly treatment, with an attendant increase in radiation exposure.

John R. Mayo, M.D., a professor of radiology and cardiology at the University of British Columbia and not involved in the study, agreed. "What we have is a brand new frontier," said Dr. Mayo, a former chair of the chest subcommittee of the RSNA Scientific Program Committee. "Now that we have better imaging, we're finding things with poorly understood clinical implications."

For 30 years, V/Q lung scanning was the noninvasive imaging procedure of choice in patients with suspected PE, with a normal V/Q scan excluding a PE diagnosis and a high probability scan having an 85 to 90 percent positive predictive value. However, as the *JAMA* researchers note, in most patients

for whom pulmonary embolism is suspected, V/Q scans are either of low or intermediate probability—such diagnostic uncertainty is a major limitation of V/Q scanning.

CTPA emerged over the last decade as an alternative noninvasive test, despite concerns about reported sensitivity ranging from 53 to 100 percent. Sensitivity has increased as modern multislice CT technology has replaced early single-slice scanners.

## CTPA Finds Significantly More Pulmonary Emboli

"Our study was initiated by concerns about the widespread adoption of CTPA for diagnosis of PE, despite the relative lack of data to support its use to exclude the diagnosis of PE," said lead author David R. Anderson, M.D., a professor of medicine, pathology, and community health and epidemiology, head of the Division of Hematology and deputy head of the Department of Medicine at Dalhousie University in Halifax, Nova Scotia.

*What we have is a brand new frontier ... we're finding things with poorly understood clinical implications.*

**John R. Mayo, M.D.**

Investigators assigned 716 patients showing symptoms of possible PE to undergo V/Q scanning and another 701 to undergo CTPA. In the CTPA group, 133 patients (19.2 percent) were diagnosed as having PE in the initial evaluation, versus 101 (14.2 percent) in the V/Q scan group. Of those patients in whom PE was considered excluded, two patients randomized to CTPA and six randomized to V/Q scanning developed venous

thromboembolism in follow-up, including one patient with fatal PE in the V/Q group.

"The study demonstrated that CTPA was at least as safe as the previous standard of V/Q scanning to exclude diagnosis of pulmonary embolism, which was reassuring," said Dr. Anderson, noting that CTPA has become a standard tool to evaluate patients with suspected PE at his institution. "We expected more patients would be diagnosed with PE using CTPA than V/Q, but we were surprised about the magnitude of the difference that we observed."

The researchers concluded that a diagnostic-management strategy, using CTPA in combination with consideration of clinical probability, D-dimer testing and leg venous ultrasonography, was not inferior to one using V/Q scanning to exclude the diagnosis of PE.

They added, however, that "further research is required to confirm whether some pulmonary emboli detected by CTPA may be clinically unimportant—the equivalent of deep vein thrombosis isolated to the calf veins—and not require anticoagulant therapy."

## Definition of Disease Burden Challenged

Determining the clinical and therapeutic significance of small subsegmental defects detected by CTPA is indeed important, as most radiology centers in the U.S. are using CTPA and not V/Q as their frontline test, said Ioannis Vlahos, M.D., an assistant professor of radiology at New York University and a consultant at St. George's Hospital in London. Rather, V/Q scanning is commonly in use as part of a screening

algorithm in those areas—including the U.K.—that have limited access to CT technology, he said.

“In the U.S., CTPA performed with multidetector CT is the number one investigational modality, without a doubt,” said Dr. Vlahos, a co-investigator on a study of CTPA and PE detection presented at RSNA 2007.

“The problem has been that, through the years, CTPA has been difficult to prove as our gold standard because, in general, the standards we use for detection of pulmonary thrombotic disease are flawed to some degree,” said Dr. Vlahos.

Dr. Mayo agreed. “There is a lack of knowledge as to what constitutes enough of a disease burden to warrant treatment,” he said.

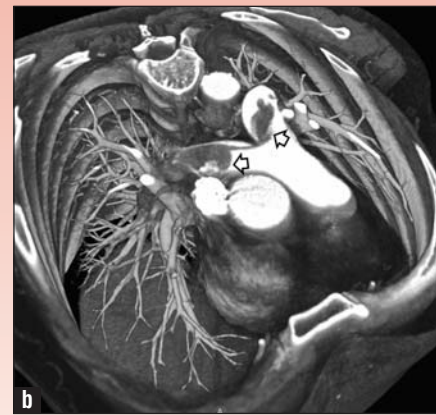
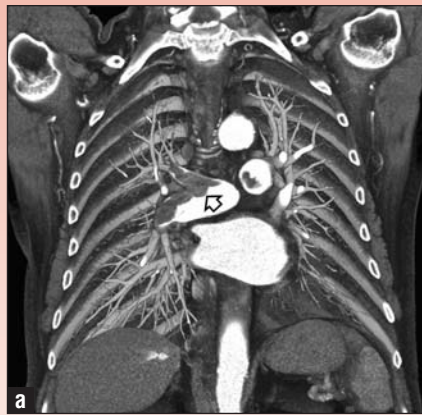
Dr. Vlahos acknowledged that a small fraction of patients—specifically those with contrast allergies, those who have recently received contrast for other studies and pregnant women who should avoid radiation exposure—may be better served by V/Q scanning or MR imaging versus CTPA.

In most cases, however, CTPA is considered an attractive modality, offering more than just sensitivity and specificity in detecting PE, said Dr. Vlahos. “When the case is normal or definitively abnormal, V/Q is useful,” he said. “The problem is that the majority of cases do not fall into absolutely normal or high probability categories. They fall somewhere in between, which necessitates obtaining additional tests, such as CTPA or even an old-fashioned catheter pulmonary angiogram.”

CTPA not only provides a definitive answer as to the absence or presence of PE, said Dr. Vlahos, but also can identify equally important alternative causes of symptoms, such as cardiac problems.

### Reevaluation of Therapeutic Approach Needed

“CTPA is a superb test—the data indicate that it is better than V/Q scanning and can safely replace it,” said Dr.



**Extensive acute central pulmonary embolism with “saddle embolus” extending into both central pulmonary arteries in a 72-year-old man.**

Contrast material-enhanced 16-detector row CT yielded coronal volume renderings in (a) anteroposterior and (b) anterior perspectives, which allow intuitive visualization of the location and extent of embolus (arrows).

*Radiology* 2004; 230:329-337. © RSNA, 2004. All rights reserved. Reprinted with permission.

Mayo, adding that advances in technology and protocol are ever increasing CTPA performance. “Because it is such a good test, we need to reevaluate how to use this new information in determining who should be treated—that is, how much clot burden we need to see before we treat.”

Dr. Mayo said the University of British Columbia uses a 64-slice CT scanner for PE studies. Previous studies at the institution using single- and 4-slice scanners revealed sensitivity of approximately 90 percent and specificity of 95 percent in detecting PE. Ongoing clinical follow up indicated that the sensitivity and specificity for PE to the subsegmental level remained at greater than 90 percent.

Drs. Mayo and Vlahos don’t dispute the idea that some pulmonary emboli

detected by CTPA are of unknown clinical significance. That fact, however, should not diminish CTPA as the preferred test for PE, they said.

“As with all radiologic studies, a conscious balance of risk to benefit should be considered by the referring clinician and all studies should be obtained with the lowest radiation dose that provides acceptable image quality,” said Dr. Mayo. □

### Learn More

■ The abstract for “Computed Tomographic Pulmonary Angiography vs. Ventilation-Perfusion Lung Scanning in Patients with Suspected Pulmonary Embolism,” published in the Dec. 19, 2007, issue of *The Journal of the American Medical Association*, is available online at [jama.ama-assn.org/cgi/content/abstract/298/23/2743](http://jama.ama-assn.org/cgi/content/abstract/298/23/2743).

## Special Focus Session Focuses on Pulmonary Embolism

“Imaging Algorithms in Pulmonary Embolism,” an RSNA 2008 special focus session, will consider the results of the Prospective Investigation of Pulmonary Embolism Diagnosis (PIOPED) 2 study as it details algorithms proposed to evaluate patients with suspected venous thromboembolism. Also addressed in the session will be methods for optimizing CT pulmonary angiography (CTPA) and reducing the radiation exposure patients receive, as well as the role of alternate tests. Moderators are Ella A. Kazerooni, M.D., and Joel E. Fishman, M.D., Ph.D. RSNA 2008

registration is under way for RSNA and AAPM members. Registration begins May 19 for non-members. More information is available at [RSNA.org/register](http://RSNA.org/register).



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# My RSNA® Makes *RSNA.org* Practical and Personal

JUST AS its name implies, My RSNA®—the new personalized member portal on *RSNA.org*—is designed to help RSNA members easily find the information on the RSNA Web site, and the Web at large, that is most important to them.

“Many Web sites have sophisticated mechanisms and flashy appearances but no content,” said Paul J. Chang, M.D., a professor and vice-chair of radiology informatics at the University of Chicago School of Medicine and member of the RSNA Radiology Informatics Committee. “RSNA has all this great vetted educational content, but we’ve found our biggest barrier was user discovery of this content.”

Users of My RSNA, which just moved out of its initial test version, will likely notice that the site evokes elements of customizable sites like *Amazon.com*™, *Netflix* and *iGoogle*™, said Dr. Chang. The bottom line, he said, is that before people can use information on the Internet, they need to know it exists. Without search engines like the one powering My RSNA, many people would be unaware of most of the Web sites that provide the information and services they’re seeking, he said.

To that end, My RSNA offers users a number of drop and drag “widgets” to find and prioritize information important to them:

① It all starts with **My Profile**, where the user can indicate his or her specialties of interest, including a primary specialty.

② The **Online CME** widget gives the user a list of free online CME programs, including self-assessment modules, in their specialty area(s).

③ With **My Bookmarks**, the user can bookmark articles and pages for later access and organize those pages within My RSNA, rather than sort through unrelated bookmarks on their Internet browser. “More importantly, if I bookmark or tag a page on my personal browser, I can only get to it through my own computer,” said Dr. Chang. “With My RSNA, users can bookmark assets in their own personal RSNA bookmark list and then get to them anywhere in the world.”

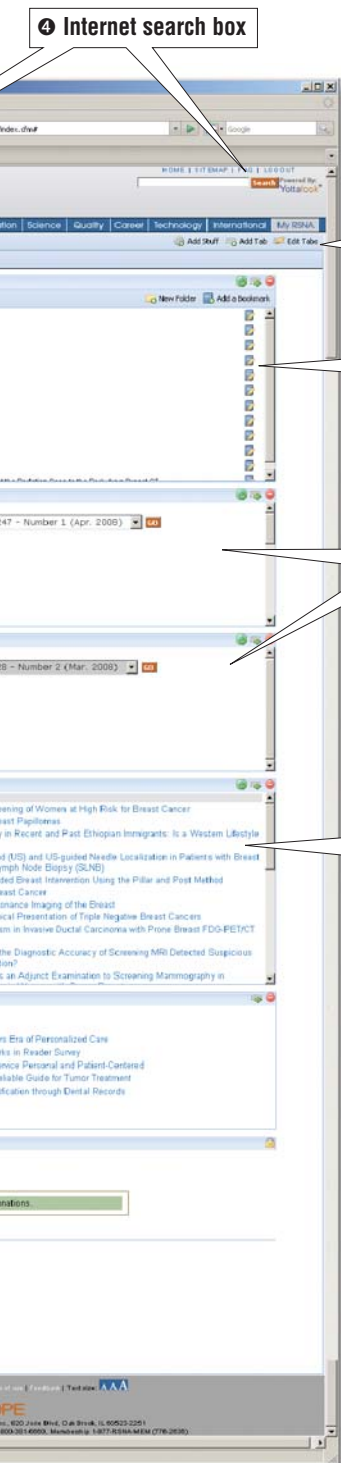
My Bookmarks also serves as an extension of the RSNA annual meeting experience, said Dr. Chang. “Over 1,000 people discovered last year that, a week after the meeting, all the education exhibits they tagged at the meeting were in their bookmarks,” he said. “Now, when you go to the meeting and you see this great paper or this great exhibit, instead of taking extensive notes, you can go to your bookmarks and refer to the presentation later.” Lectures can also include links branching out to blogs and other discussion, he said. “It doesn’t replace the meeting, but it enhances the experience so the lectures have a life after the meeting.”

④ An **Internet search box**, accessible from the *RSNA.org* home page as well as My RSNA, produces results through the radiology-specific engine *Yottalook*™, along with Google and other sources on the Web. Results are organized by type (see examples, far right). “Sometimes I just want an image, sometimes a scientific exhibit, sometimes a video,” said Dr. Chang. “Google has Google Image Search. We have something richer—RSNA article, RSNA video, RSNA image, RSNA electronic exhibits.”

The screenshot displays the My RSNA user interface within a Mozilla Firefox browser window. The interface is organized into several sections:

- My Profile:** A section for user management including options to change address, phone, email, user name, password, and current online endorsements. It also lists roles like Specialist, Spouse, and Publisher/Partner.
- My CME:** A section for Continuing Medical Education, showing current and previous years, a skills credit total, and category credits.
- Online CME:** A section for CME courses, including a table with columns for DATE, TITLE, and COMPANY. An example entry shows a date of 3/03/17/2008, a title of Partnership, and a company of tempabayradiology.
- My Bookmarks:** A list of bookmarked items such as RSNA News, Publications and Energy, RadioGraphics articles, AAPM history, RSNA 2007, 2007 Meeting stuff, Quality into Research Grants, Research Grants, Rad articles to read, and Show list.
- Radiology:** A section for radiology articles, including Breast Imaging, Book Reviews, Cardiac Imaging, Diagnostic Physics, Editorials, Evidence-based Practice, and Experimental Studies.
- RadioGraphics:** A section for RadioGraphics articles, including AFIP Archives, Continuing Education, Informatics, Quality Initiatives, RSNA Education Exhibits, Special Communications, and Special Exhibits.
- 2007 Electronic Exhibits:** A list of electronic exhibits with titles such as Multimodality Prospective Screening, The Multiple MRI Facets of Breast Magnetic Resonance, Monomographic Breast Density Determinant to their Health?, Progressive Axillary Ultrasound: Cancer Undergoing Sentinel Lymph Node Biopsy, False Negative Readings of Breast MRI, State-of-the-Art: Magnetic Resonance Imaging and Contrast Enhancement, Localization of Hypermetabolism Correlated with MR Imaging, Can Breast MRI CAD Improve Lesions in a High-Risk Population, and The Role of Ultrasonography in Breast Cancer.
- RSNA News:** A section for RSNA news articles, including Current Feature Articles (IGFAs), Breast Cancer Screening Exhibits, RadioGraphics Earns High Mark, Radiologist Urged to Make Sure Image Fusion System Fast, and Algorithm Spreads Victim Identification.
- My RBE Foundation:** A section for the RBE Foundation, featuring a logo and a "No print" button.

Annotations with callout boxes point to the "My Profile" and "Online CME" sections.



In addition, the **Yottalook Image Engine** plug-in allows the user to search images based on certain keywords and save the searches for future reference. Results can also be added to My Bookmarks.

Also incorporated into My RSNA are powerful **Radiology** and **RadioGraphics** plug-ins that prioritize journal content based on the user's indicated specialties. "First on my list are articles related to gastrointestinal radiology," Dr. Chang said. In the future, he added, My RSNA will incorporate the RadLex<sup>®</sup> radiology lexicon to offer recommendations based on pages the user has viewed. "The system will be able to deduce, 'Hey, this guy spends a lot of time looking at liver articles—we'll give him more liver articles.'"

The **Electronic Exhibits** plug-in provides a list of electronic presentations, in the user's declared specialties, from the last RSNA annual meeting.

Other plug-ins can be added by clicking the **Add Content** box in the upper right-hand corner of the page.

"We are very excited about the launching of My RSNA, which will hopefully enhance the value of RSNA membership by providing a one-stop information portal," said Burton P. Drayer, M.D., RSNA Board Liaison for Annual Meeting and Technology. □



**Internet search box**  
Results for a search on "breast imaging CT dosage" are shown by type (from top to bottom): Yottalook, video and images.

# Australian Quality Program Quickly Yields Applicable Results

**A** VOLUNTEER, academia-based Australian quality initiative is helping to drive that country's national standards for radiologic services.

Quality Use of Diagnostic Imaging (QUDI) is a research and development program providing an evidence base for diagnostic imaging in Australia and New Zealand. "We have commissioned a number of projects addressing quality issues from consumer, economic, referer and radiologist perspectives," said QUDI Manager Jane Grimm, director of Quality and Standards of Practice at the Royal Australian and New Zealand College of Radiologists (RANZCR) in Sydney.

Commencing in its current form in January 2005, QUDI is fully funded by the Australian federal government and managed by RANZCR. It currently operates on an annual budget of just under AU\$1 million. "QUDI is independent of sponsorship or other fundraising biases, so it remains collaborative," said Catherine Mandel, M.B.B.S., F.R.A.N.Z.C.R., the national QUDI liaison radiologist.

QUDI aims to promote efficient, effective, safe and affordable diagnostic medical imaging services that lead to optimal diagnosis and treatment, support consumer choice and empowerment, are delivered by accredited practitioners using evidence-based guidelines and are sustainable within the national health system budget. Dozens of projects, targeting every phase of radiologic services, have been initiated by QUDI personnel.

## Simple Projects Have Produced Immediate Change

Some complex QUDI projects have helped inform RANZCR standards



**Jane Grimm**  
QUDI Manager



**Stacy Goergen, M.B.B.S.,  
F.R.A.N.Z.C.R., M.Clin.Epi.**  
QUDI Advisory Group and Technical Reference Group

development and policy on issues such as teleradiology, professional supervision requirements and role extension for non-medical diagnostic imaging professionals. Other projects have employed simple survey techniques to identify specific barriers and bring about immediate change.

For example, a 2006 audit involving pediatric radiologists at six hospitals resulted in a significant reduction in radiation doses within six months. QUDI representatives are now looking at establishing a national program to allow other practices to benchmark against these best practice institutions, said Stacy Goergen, M.B.B.S., F.R.A.N.Z.C.R., M.Clin.Epi., of the QUDI Advisory Group and Technical Reference Group. "We have now proven that clinically

significant, practice-level improvements can occur with a simple audit and feedback system," she said.

A project conducted at the 2007 RANZCR annual scientific meeting, called the "Great Aussie CD Challenge," tested the practicality of using

*We have now proven that clinically significant practice level improvements can occur with a simple audit and feedback system.*

**Stacy Goergen, M.B.B.S.,  
F.R.A.N.Z.C.R., M.Clin.Epi.**

CDs for transferring and viewing medical images. Testing of submitted CDs revealed, among other problems, DICOM errors, issues with auto-loading viewers and difficulties dealing with multiple viewing software applications. "It demonstrated to radiologists that there are real practical difficulties with the routine use of CDs for image transfer and that very few CDs in the Australian market are compliant with available international profiles," said Nick Ferris, M.B.B.S.,



F.R.A.N.Z.C.R., M.Med., member of the QUDI Technical Reference Group. The challenge was the key initial project of the Australian branch of the Integrating the Healthcare Enterprise (IHE®) initiative, Dr. Ferris added.

Another early QUDI survey brought to light long delays in the recognition and assessment of new technologies for reimbursement by Medicare Australia. RANZCR has since proposed a new mechanism for prioritizing applications, as well as methods to improve the local evidence base required for assessments.

Such a body of work, said QUDI representatives, requires a wide degree of stakeholder engagement, ranging from governments, consumers and primary care and specialist clinicians to radiology service providers and national quality organizations such as the Australian Commission on Safety and Quality in Healthcare. QUDI has also worked closely with the National Institute of Clinical Studies (NICS) on a fellowship program to train practicing radiologists in the art and science of evidence implementation and knowledge transfer.

### Next Phase Targets Inclusion of Other Healthcare Personnel

QUDI is unique due to the diversity of its work, its low cost and the broad-based support of its advisory and technical reference groups, said Dr. Goergen. QUDI personnel said they hope the success of the project so far will help them secure a substantial increase in federal funds when the first funding cycle ends June 30 this year.

Currently, most of the work radiologists perform for QUDI is pro bono, said Taryn Bessen, M.B.B.S., F.R.A.N.Z.C.R., of the QUDI Technical Reference Group. RANZCR encourages participation in the program by awarding CME points; however, the extent and increasing complexity of the work have led to significantly increased demands on radiologists' time. With a severe nationwide shortage of radiolo-

### International Benchmarking Initiative Focuses on Turnaround Times

**T**HE International Radiology Quality Network (IRQN) seeks facilities to participate in a worldwide benchmarking initiative on turnaround times (TATs) for radiology reports.

When IRQN began its Performance Metrics and Indicators Project in 2007, it selected TATs over a 1-month period as the metric to be benchmarked. Thirteen institutions from three continents participated in a trial last year. IRQN is now working to refine data collection and methodology, particularly with regard to the differences in how radiology information systems (RIS) report TAT data—some report it as a percentage turned around in 24, 48 or 72 hours, while others report the average time required to generate a report.

The project's next phase aims to

include 100 facilities worldwide. As TAT data are a small subset of the statistics routinely generated by a facility's RIS, additional effort for facilities is minimal, according to IRQN. In addition to offering insight into the performance of different facilities, the initiative will also allow participants to benchmark their performance against similar institutions.

Facilities interested in participating in the benchmarking initiative should send the name of their facility and the name and contact information of the principal liaison to Laura Coombs, Ph.D., at [lcoombs@acr.org](mailto:lcoombs@acr.org) by July 31.

IRQN has also approved its "Top 10 Principles of International Clinical Teleradiology." The principles are available online at [www.irqn.net](http://www.irqn.net).

gists in Australia exacerbating the pressure, funded involvement is necessary so that QUDI work can be prioritized equally with clinical work, said QUDI representatives.

"We have also recognized that it will be essential to have active participation in the program from medical imaging technologists, radiology nurses, medical radiation physicists and a generally broader range of content experts the program can call upon to assist with specific projects or issues," said Dr. Bessen.

Implementation of best practices at the practice level, using an evidence-based approach, will characterize the next phase of the QUDI program, said Dr. Mandel. QUDI representatives look forward to an online, searchable database of critically appraised radiology topics later this year, as well as online training programs in evidence-based medicine and critical appraisal of literature.

The next phase of QUDI also

should see the profile of radiologists in the general community raised, said representatives, so consumers can better understand what a radiologist does and the risks and benefits of diagnostic imaging.

"The QUDI program has been one of the most important activities ever undertaken by RANZCR," said RANZCR President Mark Khangure, M.B.B.S., F.R.A.N.Z.C.R. "The scope of QUDI is broad, with a clear intent to improve the management of patients through the appropriate use of diagnostic radiology. We hope the Australian government will continue to support this important program into the future." □

### Learn More

■ For more information about the Quality Use of Diagnostic Imaging (QUDI) program of the Royal Australian and New Zealand College of Radiologists, go to [www.ranzcr.edu.au/qualityprograms/qudi/index.cfm](http://www.ranzcr.edu.au/qualityprograms/qudi/index.cfm) or inquire by e-mail at [qudi@ranzcr.edu.au](mailto:qudi@ranzcr.edu.au).

### RSNA 2008 Quality Improvement Symposium

**T**HE Quality Improvement Symposium will be held Tuesday during RSNA 2008. The daylong series includes four sessions addressing process improvement, customer satisfaction, patient safety and professional assessment. Registration for this and all RSNA 2008 courses begins June 30. For more information, go to [RSNA2008.RSNA.org](http://RSNA2008.RSNA.org).



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

# Journal Highlights

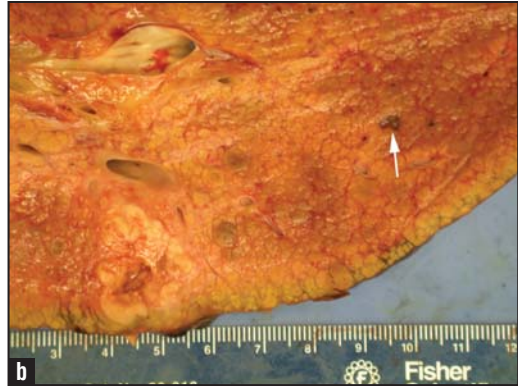
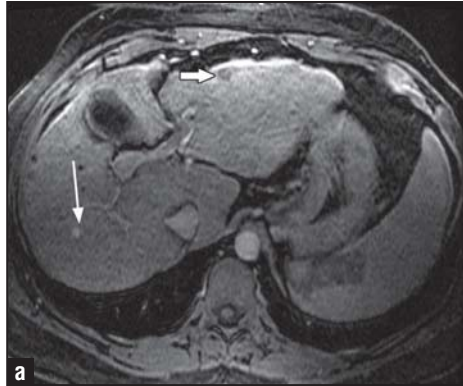
The following are highlights from the current issues of RSNA's two peer-reviewed journals.

## MR of Hepatocellular Carcinoma in Cirrhotic Liver

**D**IAGNOSIS of hepatocellular carcinoma (HCC) is heavily dependent on imaging characteristics. With the incidence of HCC expected to increase in the next two decades, largely due to hepatitis C infection and secondary cirrhosis, there is an ever growing demand on radiologists to detect smaller tumors, when curative therapies are most effective.

In a review article in the May issue of *Radiology* ([RSNA.org/radiology](http://RSNA.org/radiology)), Jonathon M. Willatt, M.D., and colleagues focus on MR imaging features of HCC in the cirrhotic liver, diagnostic dilemmas, staging and treatment options and imaging after treatment. Included in the review:

• Regenerative and dysplastic nodules



### Images in 46-year-old man with hepatitis C-related cirrhosis.

(a) Arterial-dominant phase transverse T1-weighted 3D spoiled gradient-recalled acquisition in the steady state (SPGR) MR image (3.6/1.7, 12° flip angle) shows a 6 mm nonspecific hypervascular lesion (*thin arrow*). This patient has a dominant 5 cm hepatocellular carcinoma (HCC) (not shown). A small nodule in the anterior lateral segment of the left lobe (*thick arrow*) was found to be a cirrhotic nodule. (b) At explant evaluation, the tiny hypervascular lesion was found to be a hemangioma (*arrow*).

(*Radiology* 2008;247:311–330) © RSNA, 2008. All rights reserved. Printed with permission.

- Lesions mimicking HCC
- Imaging technique
- Transplant allocation criteria for patients with cirrhosis and HCC
- Small (<2 cm) arterially enhancing lesions
- Surgical resection, percutaneous ablative techniques and transarterial chemoembolization

“There is increasing recognition of

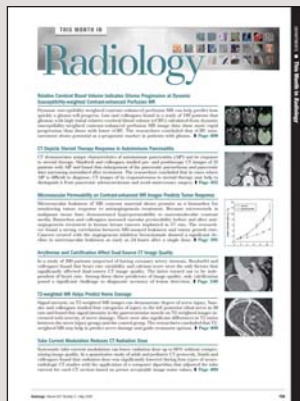
the role of imaging, and MR imaging in particular, in the surveillance of the cirrhotic liver for nodules, in the diagnosis of HCC and in the monitoring of lesions following local and systemic treatments,” Dr. Willatt and colleagues conclude.

## This Month in *Radiology* Redesigned

**T**HIS MONTH IN *RADIOLOGY*, the section of *Radiology* that provides readers with summaries of highlighted articles, has a new style starting with this month's issue.

Focusing on the “news” angle of each study, the new format also includes images to illustrate the featured studies. The online version will provide links to the corresponding articles and images.

“We wanted to give readers a quick graphic overview of a number of the articles of particular interest in each issue,” said *Radiology* Editor Herbert Y. Kressel, M.D., of Beth Israel Deaconess Medical Center and Harvard Medical School in Boston. “The new format should help our readers quickly survey the issue highlights and identify articles most relevant to their needs.”



## CORRECTION

In the Journal Highlights section of the April 2008 issue of *RSNA News*, the caption for the image accompanying the *Radiology* article should have read: MR of the knee in a 26-year-old male patient with vertical femoral cartilage tear and joint effusion. Value of parallel imaging and dedicated multi-element extremity coils for fast, high-spatial-resolution extremity imaging by using an 8-element phased-array coil at 3.0 T. (a) Sagittal intermediate-weighted turbo spin echo image. (b) Transverse intermediate-weighted driven equilibrium, or DRIVE, sequence with fat suppression.

## Imaging the Inferior Vena Cava: A Road Less Traveled

**I**MAGING, including ultrasound, MR and CT, plays a crucial role in the diagnosis and management of diverse conditions affecting the inferior vena cava (IVC).

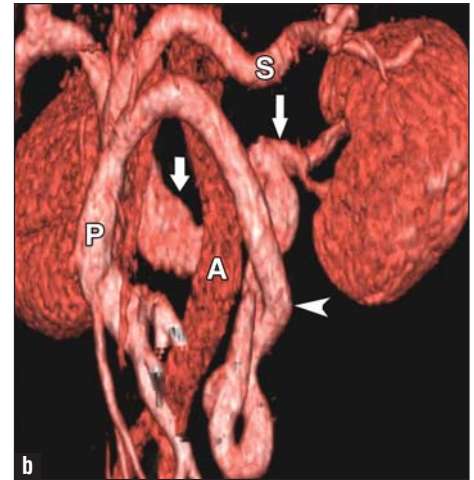
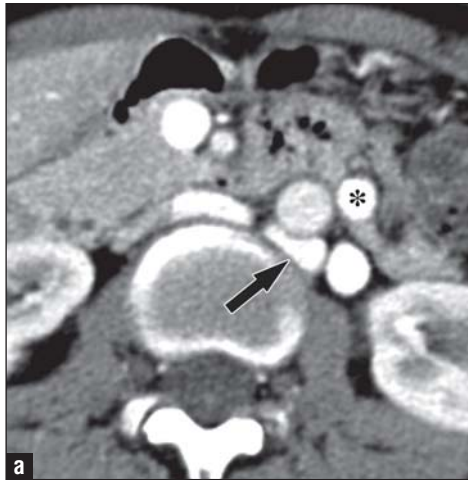
In an article in the May-June issue of *RadioGraphics* ([RSNA.org/radiographics](http://RSNA.org/radiographics)), Harsh Kandpal, M.D., of the All India Institute of Medical Sciences, and colleagues

### RadioGraphics

describe and illustrate the imaging appearance of congenital anomalies of the IVC:

- Left IVC
- Double IVC
- Retrocaval ureter
- Absence of infrarenal IVC
- Retroaortic and circumaortic left renal vein
- Interruption of the IVC with azygous or hemiazygous continuation
- Portocaval shunt

The authors also detail pathologic



### Retroaortic left renal vein causing hypertension and hematuria in a 45-year-old woman.

(a) Contrast-enhanced CT scan shows compression of the left renal vein as it courses posterior to the aorta (arrow) (“nutcracker phenomenon”), along with prominent periureteric collateral vessels (\*). (b) Volume-rendered image (anterolateral view) shows the left renal vein (arrows) coursing posterior to the aorta (A), with a prominent periureteric collateral vessel (arrowhead) draining into the portosplenic confluence. P = portal vein, S = splenic vein.

(*RadioGraphics* 2008;28:669–689) © RSNA, 2008. All rights reserved. Printed with permission.

conditions of the IVC—including membranous obstruction of the intrahepatic IVC, bland thrombus and intracaval tumors and trauma—and pitfalls in imaging the IVC.

“Familiarity with the imaging

features of the various congenital and pathologic entities that can affect the IVC is important for early diagnosis and management,” Dr. Kandpal and colleagues write.

# Radiology in Public Focus

## Media Coverage of Radiology

In March, media outlets carried 320 news stories generated by articles appearing in *Radiology*. These stories reached an estimated 183 million people.

A news release promoted findings from the Embolization versus Hysterectomy (EMMY) Trial (*Radiology* 2008;246:823-832).

Broadcast coverage included placements on WJZ-TV (Baltimore), WVIT-TV (Hartford,

Conn.), WWBT-TV (Richmond, Va.), WCNC-TV (Charlotte, N.C.), WVTM-TV (Birmingham, Ala.) and WNYT-TV (Albany, N.Y.).

Print coverage included Reuters, *Florida Today*, *The Tennessean* and *La Crosse Tribune*. Web placements included Yahoo! News, WebMD, Medscape, *Businessweek.com*, *AOL.com*, *MSN.com*, *USNews.com* and *Washingtonpost.com*.

## May Public Information Activities Focus on Stroke

In recognition of American Stroke Month, public service announcements (PSAs) distributed by RSNA in May focused on:

- Signs of stroke
- Stroke imaging
- Interventional treatments for stroke
- Importance of receiving stroke treatment quickly

In addition to the PSAs, RSNA distributed to radio stations the “60-Second Checkup” audio program, which also focused on stroke.

# Working For You

## RSNA Represented at ECR, AUR

(a) Among the visitors to the RSNA booth at the European Congress of Radiology (ECR), were (left to right) Ardis Platkajis, M.D., president of the Latvian Association of Radiologists, Herbert Y. Kressel, M.D., editor of *Radiology*, and Robert A. Novelline, M.D., the 2007 RSNA Outstanding Educator. ECR was held March 7–11 in Vienna, Austria.

(b-d) RSNA also took its informational booth to the Association of University Radiologists annual meeting March 25–29 in Seattle. RSNA co-sponsored two Association of American Medical Colleges Medical Education Research Certificate workshops and a radiology informatics course at AUR and presented the “Patient-centered Radiology: Use It or Lose It” course created by the RSNA Public Information Committee. RSNA also helped host a “beer and pretzels” reception for members of the American Alliance of Academic Chief Residents in Radiology, Association of Program Directors in Radiology, Society of Chairmen of Academic Radiology Departments and Association of Program Coordinators in Radiology.

The next stop for the RSNA booth is the annual meeting of the Italian Society of Medical Radiology in Rome, May 23–27. The RSNA journals will be represented at the annual meeting of the Medical Library Association in Chicago, May 16–21, and RSNA will also participate in the American Medical Association Medical Specialty Showcase in Chicago on June 14.



## RSNA 2007 Refresher Courses Available at InteractED®

Selected RSNA 2007 refresher courses in a variety of content areas such as breast imaging, quality assurance and physics are now available through InteractED®, RSNA's online education resource. Courses are available for *AMA PRA Category 1 Credit™* and are free to RSNA members. To view these and other CME courses, go to [RSNA.org/education](http://RSNA.org/education).

Questions about these and other RSNA education courses or products can be directed to 1-800-272-2920 or 1-800 381-6660 x3753.

## New SAMs Coming Soon

The RSNA Education Center will offer new self-assessment modules (SAMs) in cardiac, chest and nuclear medicine starting in June. These SAMs are “qualified by the American Board of Radiology (ABR) in meeting the criteria for self-assessment toward the purpose of fulfilling requirements in the ABR Maintenance of Certification Program.” Each SAM qualifies for 1 SAM credit and 2.5 CME credits. SAMs can be accessed free of charge by RSNA members by visiting [RSNA.org/education](http://RSNA.org/education). For more information about SAMs, contact the Education Center at 1-800-381-6660 x 3733.

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

# Program and Grant Announcements

## RSNA Clinical Trials Methodology Workshop

January 10-16, 2009 • Hyatt Regency Scottsdale Resort and Spa at Gainey Ranch • Application Deadline—June 7

Over the course of this 6½-day workshop, each trainee will be expected to develop a protocol for a clinical study, ready to include in an application for external funding. Participants will learn how to develop protocols for the clinical evaluation of imaging modalities. A dynamic and experienced faculty will cover topics including:

- Principles of clinical study design
- Statistical methods for imaging studies
- Design and conduct of multi-institutional studies
- Sponsorship and economics of imaging trials
- Regulatory processes

Applicants will undergo a competitive selection process for entrance into the course. Once admitted, trainees will participate in advance preparation, didactic sessions, one-on-one mentoring, small discussion sessions, self study and individual protocol development. Familiarity with basic concepts and techniques of statistics and study design is required of all applicants.

Apply for the Clinical Trials Methodology Workshop at [RSNA.org/CT2009](http://RSNA.org/CT2009). For more information, contact Fiona Miller at 1-630-590-7741 or [fmiller@rsna.org](mailto:fmiller@rsna.org).

More information about these programs, including application forms, is available at [RSNA.org/research/educational\\_courses.cfm](http://RSNA.org/research/educational_courses.cfm).



## Advanced Course in Grant Writing

Application Deadline—July 1

This course will help participants, typically junior faculty members, prepare and submit a National Institutes of Health (NIH), National Science Foundation (NSF) or equivalent grant application by the October 2009 deadline. A participant must possess an M.D. or Ph.D., be a faculty member in a radiology, radiation oncology or nuclear medicine program and never have been a principal investigator on an NIH- or NSF-funded project. The course will consist of four two-day sessions at RSNA Headquarters in Oak Brook, Ill., over a nine-month period beginning in September 2008.



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

(Formerly known as Introduction to Research)

Application Deadline—July 15

This program demonstrates the importance of research in diagnostic radiology, illustrates the excitement of academic careers and introduces residents to successful clinical radiology researchers. Successful applicants will be assigned to either a seminar held during RSNA 2008 or the American Roentgen Ray Society (ARRS) annual meeting in 2009. Radiology departments are invited to nominate one second-year resident. A total of 80 residents will be selected to participate.



## RSNA Derek Harwood-Nash International Fellowship

Application Deadline – July 1

International radiologists 3 to 10 years beyond training are invited to apply for this 6- to 12-week fellowship at a North American institution. One or two fellows will be selected. The application form for this program is available at [RSNA.org/international/CIRE/dhnash.cfm](http://RSNA.org/international/CIRE/dhnash.cfm). For more information, contact Fiona Miller at [fmiller@rsna.org](mailto:fmiller@rsna.org) or 1-630-590-7741.



## RSNA Outstanding Researcher and Educator Awards

Nomination Deadline—June 15 • New, Simpler Process

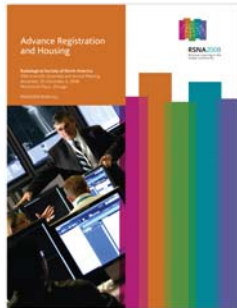
THE RSNA Outstanding Researcher and Outstanding Educator awards annually honor one senior physician or scientist in each award category who has made a career of significant contributions to the field of radiology or radiologic sciences through research or teaching/education. The 2007 Outstanding Researcher was Bruce J. Hillman, M.D., and the 2007 Outstanding Educator was Robert A. Novelline, M.D.

To nominate someone for one of these awards, simply send a one-page letter of nomination and the nominee's complete curriculum vitae to Scott Walter, Senior Manager, Grant Administration, at [swalter@rsna.org](mailto:swalter@rsna.org). More details and a listing of past recipients are available at [RSNA.org/Foundation/RecognitionAwards.cfm](http://RSNA.org/Foundation/RecognitionAwards.cfm).

# News about RSNA 2008

## Member Registration and Housing Open

RSNA and AAPM members can register now for RSNA 2008. Non-member registration and housing open May 19. The Advance Registration and Housing Brochure is available online only at [RSNA.org/register](http://RSNA.org/register).



## Refresher Course Enrollment Begins June 30

Course enrollment information will be mailed in late June and will also be available online at [RSNA.org/register](http://RSNA.org/register). People registering for RSNA 2008 before June 1 and wishing to view course enrollment information online only can “opt out” of receiving a copy in the mail.

### INTERNATIONAL VISITORS

## Invitation Letters Available—Act Now for Visa

Personalized invitation letters are available for request at [RSNA2008.RSNA.org](http://RSNA2008.RSNA.org). Click International Visitors. This section of the annual meeting Web site also includes important information about the visa application process. Visa applicants are advised to apply as soon as they decide to travel to the U.S. and at least three to four months in advance of their travel date. It is recommended that international visitors start the visa process now.

For more information go to:

- [www.unitedstatesvisas.gov](http://www.unitedstatesvisas.gov)
- [nationalacademies.org/visas](http://nationalacademies.org/visas)
- [travel.state.gov/visa](http://travel.state.gov/visa)



## Registering for RSNA 2008

There are four ways to register for RSNA 2008:

### 1 Internet

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

Fastest way to register!

Use your member ID number from the *RSNA News* label or meeting flyer sent to you. **An Internet registration tutorial appears on Page 25.**

### 2 Fax (24 hours)

1-800-521-6017  
1-847-940-2386

### 4 Mail

Experient/RSNA 2008  
108 Wilmot Rd.,  
Suite 400  
Deerfield, IL 60015-5124  
USA

### 3 Telephone

(Monday–Friday,  
8:00 a.m.–5:00 p.m. CT)  
1-800-650-7018  
1-847-940-2155

### Registration Fees

BY 11/7	ONSITE	
\$0	\$100	RSNA Member, AAPM Member
\$0	\$0	Member Presenter
\$0	\$0	RSNA Member-in-Training, RSNA Student Member and Non-Member Student
\$0	\$0	Non-Member Presenter
\$130	\$230	Non-Member Resident/Trainee
\$130	\$230	Radiology Support Personnel
\$620	\$720	Non-Member Radiologist, Physicist or Physician
\$620	\$720	Hospital or Facility Executive, Commercial Research and Development Personnel, Healthcare Consultant and Industry Personnel
\$300	\$300	One-day registration to view only the Technical Exhibits

■ For more information about registering for RSNA 2008, visit [RSNA2008.RSNA.org](http://RSNA2008.RSNA.org), e-mail [reginfo@rsna.org](mailto:reginfo@rsna.org) or call 1-800-381-6660 x7862.

### Important Dates for RSNA 2008

May 19	Non-member registration and housing open
June 30	Course enrollment opens
Oct. 24	International deadline to have full-conference materials mailed in advance
Nov. 7	Final advance registration, housing and course enrollment deadline
Nov. 30–Dec. 5	RSNA 94th Scientific Assembly and Annual Meeting



**RSNA2008**  
Personal Learning in the  
Global Community

# MEETING WATCH | RSNA 2008 - PRELIMINARY PROGRAM

	8:30 AM	9:00 AM	9:30 AM	10:00 AM	10:30 AM	11:00 AM	11:30 AM	12:00 PM	12:30 PM	1:00 PM	
<b>Saturday</b> 11/29				Effective Estate Planning Strategies PS01						AAPM/RSNA Physics Tutorial for Residents PS10	
<b>Sunday</b> 11/30	Opening Session PS30				Scientific Sessions SSA						
					Radiologist Assistants Symposium RA11			Radiologist Assistants Symposium RA12			
					Pediatric Radiology Series VP11						
					Oncodiagnosis Panel PS31						
<b>Monday</b> 12/1	Refresher Courses RC200s				Scientific Sessions SSC						
	Associated Sciences Refresher Course AS21				Associated Sciences Refresher Course AS22						
	Case-based Review: MR CM21				Case-based Review: MR CM22						
	BOOST RO21 (Bolstering Oncoradiologic and Oncoradiotherapeutic Skills for Tomorrow)				BOOST RO22 (Bolstering Oncoradiologic and Oncoradiotherapeutic Skills for Tomorrow)						
	Gastrointestinal Radiology Series VG21										
	Genitourinary Series VU21										
	Pediatric Radiology Series VP21										
	Cardiac CT Mentored Case Review MC21				Cardiac CT Mentored Case Review MC22						
<b>Tuesday</b> 12/2	Refresher Courses RC300s				Scientific Sessions SSG						
	Associated Sciences Refresher Course AS31				Associated Sciences Refresher Course AS32						
	Case-Based Review: Interventional Radiology CI31				Case-Based Review: Interventional Radiology CI32						
	Essentials Course ES31				Essentials Course ES32						
	Quality Improvement Symposium QI31				Quality Improvement Symposium QI32						
	BOOST RO31; RO34 (Bolstering Oncoradiologic and Oncoradiotherapeutic Skills for Tomorrow)				BOOST RO32; RO35 (Bolstering Oncoradiologic and Oncoradiotherapeutic Skills for Tomorrow)						
	Pediatric Radiology Series VP31										
	Gastrointestinal/ER Radiology Series VG31										
	Neuroradiology Series VN31										
	Breast Series VB31										
<b>Wednesday</b> 12/3	Refresher Courses RC500s				Scientific Sessions SSK						
	Associated Sciences Refresher Course AS41				Associated Sciences Refresher Course AS42						
	Case-based Review: Pediatrics CP41				Case-based Review: Pediatrics CP42						
	Essentials Course ES41				Essentials Course ES42						
	BOOST RO41; RO44 (Bolstering Oncoradiologic and Oncoradiotherapeutic Skills for Tomorrow)				BOOST RO42; RO45 (Bolstering Oncoradiologic and Oncoradiotherapeutic Skills for Tomorrow)						
	Musculoskeletal Radiology Series VS41										
	Chest Series VC41										
	Molecular Imaging Symposium MI41				Molecular Imaging Symposium MI42						
<b>Thursday</b> 12/4	Refresher Courses RC600s				Scientific Sessions SSQ						
	Case-based Review: Neuroradiology CN51				Case-based Review: Neuroradiology CN52						
	BOOST RO51 (Bolstering Oncoradiologic and Oncoradiotherapeutic Skills for Tomorrow)				BOOST RO52 (Bolstering Oncoradiologic and Oncoradiotherapeutic Skills for Tomorrow)						
<b>Friday</b> 12/5	Refresher Courses RC800s				Scientific Sessions SST						

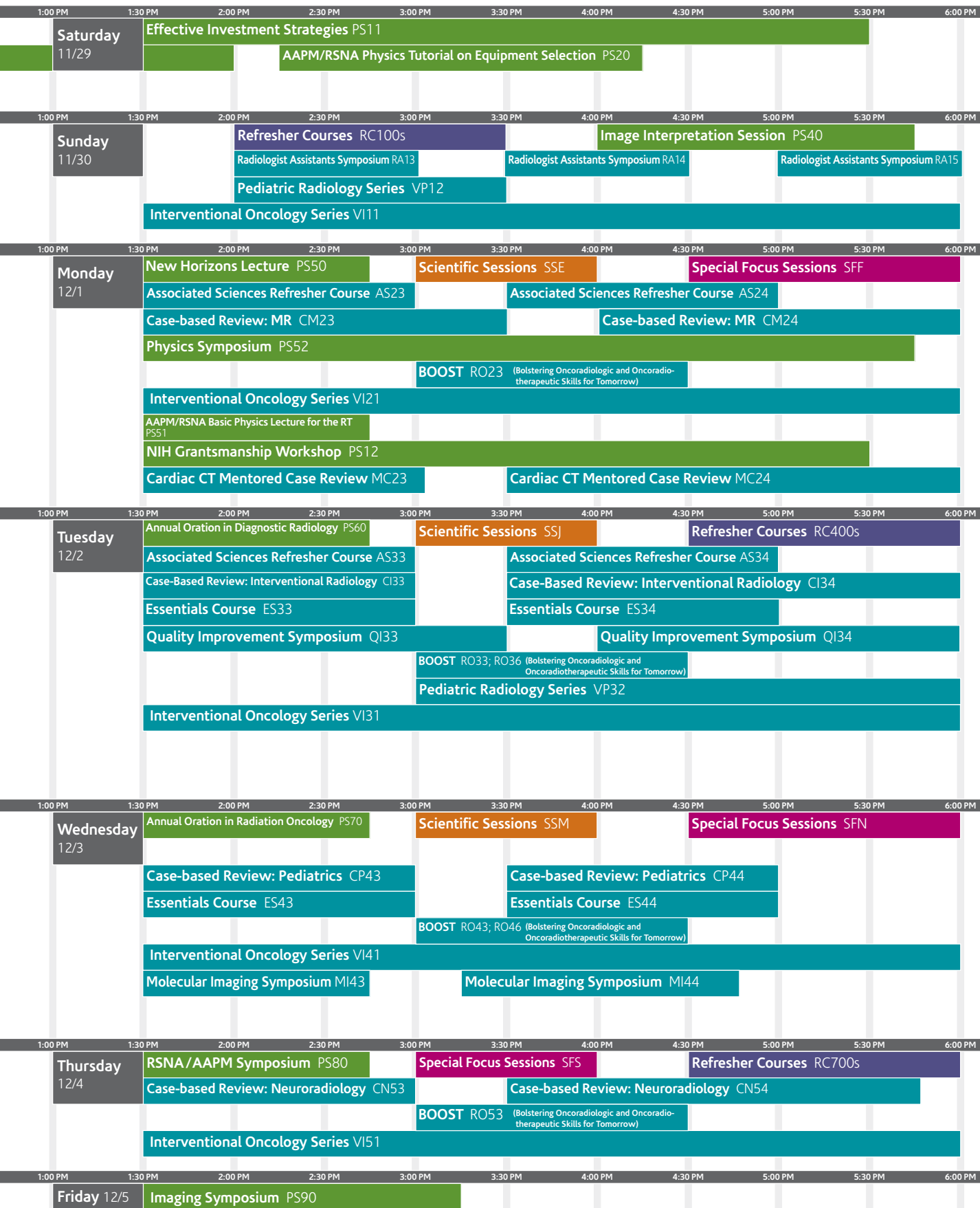
**Lunch, Visit Posters, Education Exhibits & Technical Exhibits**

**Technical Exhibit Hours**  
 Sun. – Wed. 10:00 AM – 5:00 PM  
 Thursday 10:00 AM – 2:00 PM  
**Lakeside Learning Center Hours**  
 Sunday 8:00 AM – 6:00 PM  
 Mon. – Thu. 7:00 AM – 10:00 PM  
 Friday 7:00 AM – 12:45 PM

**Programs Key**

- Multisession Courses
- Plenary Sessions
- Refresher Courses
- Scientific Sessions
- Special Focus Sessions





# Product News

## NEW PRODUCT

### Front-End Speech Recognition System

**M**EDQUIST ([www.medquist.com](http://www.medquist.com)) announces SpeechQ for Radiology™ version 1.2, the latest upgrade to its speech recognition system. The new version features faster authentication of radiology reports via SpeechQ's new QuickSign Module and easy-to-use Auto-Text Explorer with drag-and-drop or double-click options in addition to voice commands.

Improvements to the date range filters in SpeechQ allow convenient sorting of reports and better access for customized reporting. The new version also includes improved password and security features, multiple user access to workflow administration and improved failover recovery using virtualization technology. Powered by the Philips SpeechMagic™ speech engine, SpeechQ for Radiology integrates with most radiology-specific information systems and PACS.



## NEW PRODUCT

### Browser-Based Image Viewing Software

Aware ([www.aware.com/medical](http://www.aware.com/medical)) has released the latest version of its AccuRad™ client/server software suite, which enables remote browser-based viewing of images in disparate PACS across a bandwidth-constrained network.

AccuRad comprises three software development kits.

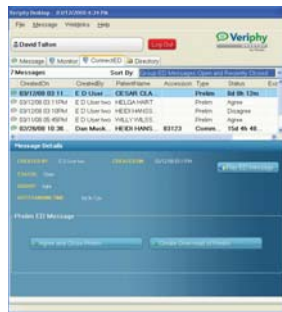
AccuRad Stream™ enables rapid implementation of client/server architecture based on JPIP, the only DICOM transfer syntax that provides for real-time image streaming, as well as establishment of connectivity to multiple PACS. AccuRad DICOMView™ ActiveX component combines the latest delivery and display technologies for viewing medical images in a standard browser and is easily integrated into other viewing applications. AccuRad J2KSuite™ enables JPEG 2000 compression and decompression.



## FDA CLEARANCE

### Flat-panel Display

NEC ([www.nec-display-solutions.com](http://www.nec-display-solutions.com)) has received FDA clearance for its MultiSync bundled flat-panel monitor system, including two MD205MG 5-mega-pixel displays and high-performance video. The MultiSync MD205MG monitor features a back-light sensor, DICOM calibration, 30-millisecond response time, 2560 x 2048 native resolution, 3,061 shades of gray and contrast ratio of 600:1. The LCD is especially made for PACS MR, CT and 3D radiologic applications.



## NEW PRODUCT

### Radiology/Emergency Department Communication System

Agfa HealthCare ([www.agfa.com](http://www.agfa.com)) has introduced IMPAX™ ConnectED, which automates and expedites communication about preliminary findings between the radiology and emergency departments. The system provides multiple ways to notify one or more emergency department personnel of a critical result, with the complete communication trail automatically stored in a searchable archive for more than 10 years. Emergency physicians can also create a preliminary read that is automatically routed to the assigned radiologist. IMPAX ConnectED is the only system of its kind to offer tight integration with PACS.

# RSNA.org

## RSNA 2008 Registration

RSNA and AAPM members can register now for RSNA 2008. Non-member registration opens May 19. To register, go to [RSNA.org/register](http://RSNA.org/register).

- 1 Information from the Mailing Information page will be used to create your name badge and send you documents prior to the meeting.
- 2 On the Registration page, choose one registration category and a subspecialty.
- 3 Booking your hotel reservation during registration gives you a choice of more than 70 hotels offering the lowest rates in Chicago and access to RSNA's

free shuttle to McCormick Place. Indicating your arrival and departure dates and type of room desired will give you a list of hotels meeting the criteria.

- 4 At the Payment Information screen, confirm your registration and housing selections are correct, enter your credit card information and click Continue. A registration confirmation will be sent to you within 24-48 hours.
- Course enrollment for RSNA 2008 begins June 30.



**connections** Your online links to RSNA

- RSNA.org**
- My RSNA™**  
[RSNA.org](http://RSNA.org) – click My RSNA
  - Radiology Online**  
[RSNA.org/radiology](http://RSNA.org/radiology)
  - RadioGraphics Online**  
[RSNA.org/radiographics](http://RSNA.org/radiographics)
  - RSNA News**  
[rsnanews.org](http://rsnanews.org)
  - Membership Applications**  
[RSNA.org/mbrapp](http://RSNA.org/mbrapp)
  - RSNA Membership Directory**  
[RSNA.org/directory](http://RSNA.org/directory)
  - Education Portal**  
[RSNA.org/education](http://RSNA.org/education)
  - RSNA CME Credit Repository**  
[RSNA.org/cme](http://RSNA.org/cme)
  - CME Gateway**  
[CMEgateway.org](http://CMEgateway.org)
  - International Radiology Outreach Resources**  
[RSNA.org/International/IROR.cfm](http://RSNA.org/International/IROR.cfm)
  - InterOrganizational Research Council**  
[radresearch.org](http://radresearch.org)
  - RSNA Medical Imaging Resource Center**  
[RSNA.org/mirc](http://RSNA.org/mirc)
  - RSNA Career Connection**  
[RSNA.org/career](http://RSNA.org/career)
  - RadiologyInfo™**  
RSNA-ACR patient information Web site [radiologyinfo.org](http://radiologyinfo.org)
  - RSNA Press Releases**  
[RSNA.org/media](http://RSNA.org/media)
  - RSNA Research & Education (R&E) Foundation**  
Make a Donation [RSNA.org/donate](http://RSNA.org/donate)
  - Silver Anniversary Campaign**  
[RSNA.org/campaign](http://RSNA.org/campaign)
  - Community of Science**  
[RSNA.org/cos](http://RSNA.org/cos)
  - CQI Initiative**  
[RSNA.org/quality](http://RSNA.org/quality)
  - RSNA 2008**  
[RSNA2008.RSNA.org](http://RSNA2008.RSNA.org)
  - Abstract Submission for RSNA 2008**  
[RSNA.org/abstracts](http://RSNA.org/abstracts)

## IMAGING TECHNOLOGY

# Answer [Question on page 2.]

**A**The “S” in the S-number stands for speed. Images with high S-numbers were acquired with low-dose. Quantum noise may mask findings in very high S-number images. Conversely, very low S-number images may have been acquired with too much dose. Q&A courtesy of AAPM.

# Medical Meetings

## June – September 2008

**MAY 31–JUNE 5**

American Society of Neuroradiology (ASNR), 46th Annual Meeting, Ernest N. Morial Convention Center, New Orleans  
• [www.asnr.org/2008](http://www.asnr.org/2008)

**JUNE 2–4**

UK Radiological Congress, NIA, ICC & Austin Court, Birmingham, UK • [www.ukrc.org.uk](http://www.ukrc.org.uk)

**JUNE 4–7**

European Society of Pediatric Radiology (ESPR), 45th Annual Congress, Edinburgh International Conference Centre, Scotland  
• [www.espr.org](http://www.espr.org)

**JUNE 5–8**

International Society of Radiology (ISR), 25th International Congress of Radiology, Palais des Congrès, Marrakesh, Morocco  
• [www.ier2008.org](http://www.ier2008.org)

**JUNE 8–14**

Egyptian Society of Women's Imaging and Health Care, 3rd Annual Meeting, Semiramis Intercontinental Hotel Cairo, Egypt  
• [www.eswih.org](http://www.eswih.org)

**JUNE 10–13**

European Society of Gastrointestinal and Abdominal Radiology (ESGAR), 19th Annual Meeting, Istanbul Convention & Exhibition Center, Turkey • [www.esgar.org](http://www.esgar.org)

**JUNE 11–12**

Association of Educators in Imaging and Radiologic Sciences (AEIRS), 41st Annual Meeting, Hotel Albuquerque, New Mexico • [www.aeirs.org](http://www.aeirs.org)

**JUNE 14–18**

SNM, Annual Meeting, Ernest N. Morial Convention Center, New Orleans • [interactive.snm.org](http://interactive.snm.org)

**JUNE 22–25**

World Congress on Interventional Oncology (WCIO) and Best of the American Society of Clinical Oncology (ASCO), Hyatt Regency Century Plaza, Los Angeles • [www.wcio2008.com](http://www.wcio2008.com)

**JUNE 25–28**

Computer Assisted Radiology and Surgery (CARS), 22nd International Congress and Exhibition, Hotel Constanza, Barcelona, Spain • [www.cars-int.org](http://www.cars-int.org)

**JUNE 26–29**

Clinical Magnetic Resonance Society (CMRS), Annual Meeting, Disney Board Walk Resort, Lake Buena Vista, Fla.  
• [www.cmrs.com](http://www.cmrs.com)

**JULY 27–31 VISIT THE RSNA BOOTH**

American Association of Physicists in Medicine (AAPM), 50th Annual Meeting, George R. Brown Convention Center, Houston • [www.aapm.org](http://www.aapm.org)

**JULY 27–31**

American Healthcare Radiology Administrators (AHRA), Annual Meeting and Exposition, Colorado Convention Center, Denver • [www.ahraonline.org](http://www.ahraonline.org)

**JULY 28–AUGUST 1**

Society of NeuroInterventional Surgery (SNIS), 5th Annual Meeting, Resort at Squaw Creek, Lake Tahoe, Calif.  
• [www.snisonline.org](http://www.snisonline.org)

**AUGUST 15–17**

Royal Australian and New Zealand College of Radiologists (RANZCR), New Zealand Branch Annual Scientific Meeting, SKYCITY Auckland Convention Centre, New Zealand  
• [www.ranzcr2008.co.nz](http://www.ranzcr2008.co.nz)

**SEPTEMBER 7–11**

Sociedad Ibero Latino Americana de Neuroradiologia, 20th Annual Scientific Meeting, Fiesta Americana Royal Beach Hotel, Cancun, Mexico • [www.silan2008.com](http://www.silan2008.com)

**SEPTEMBER 10–13**

World Molecular Imaging Conference (WMIC) 2008, Acropolis Convention Center, Nice, France • [www.wmicmeeting.org](http://www.wmicmeeting.org)

**SEPTEMBER 10–14**

American Society of Head and Neck Radiology (ASHNR), 42nd Annual Meeting, Hilton Toronto Hotel • [www.ashnr.org](http://www.ashnr.org)

**SEPTEMBER 13–17**

Cardiovascular and Interventional Radiology Society of Europe (CIRSE), Annual Meeting, Bella Center, Copenhagen, Denmark  
• [www.cirse.org](http://www.cirse.org)

**NOVEMBER 30–DECEMBER 5**

RSNA 2008, 94th Scientific Assembly and Annual Meeting, McCormick Place, Chicago • [RSNA2008.RSNA.org](http://RSNA2008.RSNA.org)

**RSNA**News

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