

RSNA *News*



Radiology Salaries Increase, but Many Practices Still Lose Money

Also Inside:

- Ultrasound Effects on Fetal Brains Questioned
- Gene Implicated in Adverse Radiation Effects Fuels Search for Variations
- Confusion Builds as NPI Deadline Nears
- What's Happening at RSNA 2006

RSNA 2006
November 26–December 1

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RSNA Publications Honored

THE 2005 RSNA Annual Report was selected as a winner in the 2006 American Graphic Design Awards presented by Graphic Design USA. The report was created by Adam Indyk, RSNA graphic designer.

Also selected for an American Graphic Design Award was the 2006 RSNA Corporate Brochure, designed under contract for RSNA by Brierton Design, Inc. of Northbrook, Ill. The RSNA publications were chosen from thousands of entries.



New Center for Molecular Imaging Established

Case Western Reserve University and the National Foundation for Cancer Research (NFCR) have established the NFCR Center for Molecular Imaging. Funded by a 5-year grant from the NFCR, the center will be led by James P. Basilion, Ph.D., associate professor of radiology and biomedical engineering at Case. The center will assist cancer scientists in identifying specific genes ideally suited for molecular imaging and diagnosis improvement, which

will facilitate earlier-stage treatments for cancer patients.

The center, whose scientists will collaborate with more than 40 others at universities and hospitals worldwide, joins other NFCR Centers established at Oxford, Yale, University of Alabama-Birmingham, University of California-Berkeley, Dana Farber Cancer Center, University of Arizona, Freie Universitat Berlin and the Institute of Medicinal Biotechnology in Beijing.



CORRECTION The list of International Young Academics announced in the September 2006 issue of *RSNA News* should have been recognized as the 2006 class.

MEDICAL IMAGING COMPANY NEWS

Teleradiology Firm is JCAHO Accredited

TeamHealth Teleradiology, of Knoxville, Tenn., has earned the Joint Commission on Accreditation of Healthcare Organization (JCAHO) Gold Seal Of Approval™ for its compliance with JCAHO's national standards for healthcare quality and safety.

Founded in 1991 in Durham, N.C., by radiologists, TeamHealth Teleradiology serves hospitals and radiology groups in the Central and Eastern time zones and plans to expand coverage to other parts of the country this fall.

RADIATION SAFETY

Tip of the Month

Patients undergoing diagnostic nuclear medicine procedures may have enough retained radioactivity for several days after discharge to set off alarms in public places. Please provide the patient with suitable documentation.

 American Association of Physicists in Medicine

PEOPLE IN THE NEWS



Angela D. Levy, M.D., L.T.C. (P) M.C., U.S.A.

Levy Departing AFIP

Angela D. Levy, M.D., L.T.C. (P) M.C., U.S.A., is leaving her position as chair of the Department of Radiologic Pathology at the Armed Forces Institute of Pathology (AFIP). Dr. Levy will assume a new position at the Uniformed Services University of the Health Sciences. She will continue to serve as chief of gastrointestinal radiology at AFIP.

Italian Radiology Society Has New President

Roberto Lagalla, M.D., has begun his 2-year term as president of the Società Italiana di Radiologia Medica (SIRM). Dr. Lagalla is a professor and chair of the Department of Radiology at the University of Palermo, Italy. Recently named health assessor for the Sicily region, Dr. Lagalla has also authored many papers and books on assessing thyroid diseases with ultrasonography.



Roberto Lagalla, M.D.

Hoppe, Ling Receive ASTRO Gold Medals

THE American Society for Therapeutic Radiology and Oncology (ASTRO) presented gold medals to **Richard T. Hoppe, M.D.**, and **C. Clifton Ling, Ph.D.**, during its annual meeting earlier this month.

Dr. Hoppe is chair of the Department of Radiation Oncology and the Henry S. Kaplan–Harry Lebeson Professor of Cancer Biology at Stanford University. A former ASTRO president, Dr. Hoppe has also served in leadership positions with the American College of Radiology (ACR), American Radium Society and Society of Chairs of Academic Radiation Oncology Programs. Dr. Hoppe is also a member of the *RSNA News* editorial board.

Chair of the Department of Medical Physics and head of Radiation Biophysics Laboratory at Memorial Sloan-Kettering Cancer Center, Dr. Ling has been a researcher for 30 years. He has been active with

many associations including ASTRO, RSNA, the American Association of Physicists in Medicine, ACR, the National Cancer

Institute, the Radiation Research Society and the Radiation Therapy Oncology Group.

ASTRO also presented **William Thorwarth Jr., M.D.**, of Catawba Radiological Associates in Hickory, N.C., with honorary membership. Dr. Thorwarth has represented radiation oncology through his involvement with numerous ACR and American Medical Association initiatives.

Recipients of 2006 ASTRO Resident Clinical/Basic Science Research Awards were **Christopher A. Peters, M.D.**, **Tien Phan, M.D.**, and **Kelin Wang, Ph.D.**



Richard T. Hoppe, M.D.



C. Clifton Ling, Ph.D.



William Thorwarth Jr., M.D.

AAPM Names Honorary Members, Special Awardees

2006 RSNA President **Robert R. Hattery, M.D.**, has been awarded honorary membership in the American Association of Physicists in Medicine (AAPM). Dr. Hattery is also executive director of the American Board of Radiology.

Francis Mahoney, Ph.D., chief of the Radiotherapy Development Branch at the National Cancer Institute, also received honorary membership.

AAPM presented its William D. Coolidge award to **Ervin B. Podgorsak, Ph.D.**, professor and director of Medical Physics at McGill University and director of the Department of Medical Physics at McGill University Health Centre in Montreal. The highest honor granted by the AAPM, the Coolidge award recognizes a distinguished career in medical physics and a significant impact on medical physics practice.

Azam Niroomand-Rad, Ph.D., director of clinical physics in the Department of Radiation Medicine at Georgetown University Medical Center, received the Achievement in Medical Physics Award from AAPM. Dr. Niroomand-Rad is president of the International Organization of Medical Physics.



Ervin B. Podgorsak, Ph.D.

Kolodner is Interim Health IT Coordinator

Robert Kolodner, M.D., has been named interim national coordinator for health information technology. The office is developing and implementing an interoperable technology infrastructure to improve the quality and efficiency of health care. Formerly chief health informatics officer of the Veterans Health Administration, Dr. Kolodner replaces **David Brailer, M.D.**, who stepped down earlier this year.

Radiologist is NMA President

Albert W. Morris Jr., M.D., a radiologist in private practice in Memphis, Tenn., has been installed as the new president of the National Medical Association (NMA).

A leader in several medical societies, Dr. Morris received President's Award from Shelby County Medical Society, an affiliate of the American Medical Association, (AMA) for forging a closer relationship between the AMA and the NMA.

In 2000, Dr. Morris led the NMAs' Task Force on Environmental Health and Bioterrorism, a committee credited with developing protocols for physicians and patients in the advent of a bioterrorism attack.



Send news about yourself, a colleague or your department to 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.

Thankfully Giving Back

“I HOLD EVERY MAN A DEBTOR TO HIS PROFESSION.” FRANCIS BACON

Speaking from the perspective of 35 years in diagnostic radiology and as a member of the RSNA Board of Directors and its current president, I am grateful for the wise mentors in the formative years of my career. They gave me significant guidance along a number of themes, but these stand out: learn all you can as a resident and remain absolutely committed to life-long learning, and find a way to give back to the profession.

I have been blessed to be able to give back through my involvement in a variety of wonderful organizations. RSNA has provided me opportunities to work with fantastic colleagues, a talented staff and scores of dedicated volunteers. Making a dif-

ference in a mission-driven organization is invigorating both personally and professionally.

My Turn
ONE RADIOLOGIST'S VIEW

Quoted in 1977's *Inspiration from a Great Physician*, Dr. William Osler correctly observed, “No physician has a right to consider himself as belonging to himself; but all ought to regard themselves as belonging to the profession, inasmuch as each is part of the profession. ... The medical society is the best corrective, and a man misses a good part of his education who does not get knocked about a bit by his colleagues in discussions and criticisms.”

I have benefited most from volun-



Robert R. Hattery, M.D.

teerism when I've gotten to know my colleagues and learned from them about science, practice and life—often simply in the hallways during annual meetings or over a cup of coffee.

Although my intention was to “give back” to our specialty, I can categorically say I have been given more than I was ever capable of giving. I urge everyone to share their time and talents and—in my view—RSNA is the perfect place. I guarantee a sense of satisfaction awaits you when you get involved.

Robert R. Hattery, M.D., is 2006 RSNA Board President. Dr. Hattery is also executive director of the American Board of Radiology.

Making a difference in a mission-driven organization is invigorating both personally and professionally.

PEOPLE IN THE NEWS

IN MEMORIAM:

Thomas F. Meaney, M.D.

Thomas F. Meaney, M.D., a former RSNA vice-president who served as chair of the Division of Radiology at the Cleveland Clinic for 21 years, died in Englewood, Fla., on June 6. He was 78.

Assuming the radiology chairmanship in 1966, Dr. Meaney was dedicated to bringing the newest in imaging technology to the Cleveland Clinic. In 1983, he made the clinic the fourth hospital in the U.S. to install a CT scanner.

Dr. Meaney was one of the first interventional radiologists and in 1973 helped organize what was then known as the Society of Cardiovascular Radiology (now the Society of Interventional Radiology), serving as its president in 1980. Dr. Meaney also was president of the American Board of Radiology and chair of the American College of Radiology, which presented him with its gold medal in 1991.

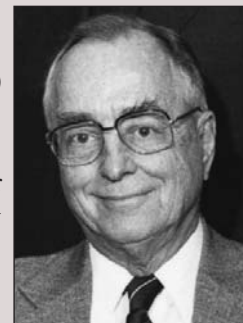
IN MEMORIAM:

James J. McCort, M.D.

James J. McCort, M.D., 1986 RSNA president and a practicing radiologist for more than 60 years, died June 12 in Walnut Creek, Calif., at the age of 92.

Dr. McCort became director of the Department of Radiology at Santa Clara Valley Medical Center in San Jose, Calif., in 1952, after serving as a doctor in the U.S. Army in World War II. In 1964, he also was appointed a clinical professor of radiology at Stanford University Medical School.

In addition to serving as RSNA president, Dr. McCort received the Society's gold medal in 1992.



James J. McCort, M.D.

RSNA Board of Directors Report

CHANGE was the focus of the September meeting of the RSNA Board of Directors—changes in the conference facilities at the RSNA Headquarters building, changes in volunteers as new committee terms are about to begin and changes/updates in some of the exciting new projects the Society is undertaking.

New RSNA Conference Center

Construction is now complete on the new conference center at RSNA Headquarters in Oak Brook, Ill. The state-of-the-art conference center can accommodate large groups—150 in a theater-style setup and 50 in a classroom setting—as well as small breakout sessions. The space will allow the Society to host more committee meetings and interactive educational conferences.

The first official committee meeting in the new space was held in October by the Integrating the Healthcare Enterprise (IHE®) Cross-enterprise Document Sharing for Imaging committee.

As the Society expands its educational offerings, the staff is expanding as well. As a result, RSNA now occupies the second, third and part of the fourth floor in the headquarters building.

RSNA Highlights

In a few short months, the Society will host its first RSNA Highlights conference. RSNA Highlights: Clinical Issues for 2007 will be held in Phoenix in February. Even as the final touches are being placed on the 2007 conference, the Board is reviewing its options for the location of the 2008 Highlights conference. Florida appears to be the likely destination.



Molecular Imaging

The Board is particularly excited about initiatives in the area of molecular imaging. Take time at RSNA 2006 to explore the new **Molecular Imaging Zone**. This year, all molecular imaging exhibits and posters will be grouped



Molecular Imaging Zone

together in the Lakeside Learning Center. There will also be exhibits from federal agencies, as well as information about funded small animal imaging centers and centers of excellence in molecular imaging. Commercial exhibitors with molecular imaging products will be recognized in the Zone and at their booths on the technical exhibit floor.

RSNA staff is developing a **resource package for clinical radiologists** that will bring them up to date on the latest advances in molecular imaging. Work also continues on a spring consensus workshop on methodologies for **validating the use of imaging as a biomarker**. Stay tuned for details on both initiatives.

International Outreach

The Board has approved next year's international destinations for the newly redesigned RSNA booth. It will travel to the Sociedad Mexicana de Radiología e Imagen in February in Mexico City; European Congress of Radiology in March in Vienna, Austria; the German Congress of Radiology in May in Berlin; and the Chinese Radiological Society in October in Nanjing. RSNA will also have a booth at three U.S. medical meetings.

At the booth, RSNA staff will be



Theresa C. McCloud, M.D.
Chair, 2006 RSNA Board of Directors

available to inform potential members about what the Society has to offer, update attendees about the 2007 RSNA annual meeting and RSNA Highlights conference, and assist current members with questions about their benefits, such as online journal subscriptions.

If you plan on attending any of these meetings, stop by to say hello or bring a colleague to learn more about RSNA membership.

The new RSNA **International Advisory Committee** will meet at RSNA 2006. The committee comprises 10 international representatives. It will provide advice to the Board regarding RSNA activities and programs, as they impact international members and annual meeting attendees. The Board is also reviewing its options for collaborating with international organizations on endeavors that further the mission of the Society—commitment to excellence in patient care through education and research.



A new conference center at RSNA Headquarters in Oak Brook, Ill., was constructed in 2006. A flexible space accommodating large groups and small breakout sessions, the state-of-the-art center allows RSNA to host more committee meetings and interactive educational conferences. The Integrating the Healthcare Enterprise (IHE) Cross-enterprise Document Sharing for Imaging committee was the first group to use the new space.

R&E Foundation Silver Anniversary

The RSNA Research & Education Foundation is well on its way to meeting its goal to raise \$15 million by its 25th anniversary in 2009. R&E has raised 45 percent so far.



Immediately prior to the RSNA Board meeting, the R&E Board of Trustees held its fall meeting. Several informational items moved forward from R&E to the Board. Details will be available in later editions of *RSNA News*.

Volunteers

The September Board meeting and pre-meeting conference call are the venues for appointment of volunteers for the upcoming year. Approximately 70 committees and subcommittees comprising more than 800 RSNA members fulfill critical obligations for the Society, such as implementing research programs, developing educational content and courses for the RSNA annual meeting and other activities, providing editorial guidance for publications and developing fundraising initiatives.

Letters of appointment are being sent to the 2007 volunteers and letters of appreciation are being sent to volunteers who have completed their committee terms.

Farewell to Dr. Eyler

One volunteer to whom the Society will be indebted forever is William R. Eyler, M.D. At the end of this year, Dr. Eyler will retire as RSNA Historian. Dr. Eyler has provided RSNA with 45 years of dedicated service—as assistant editor of *Radiology* (1962–1966), as editor of *Radiology* (1966–1985) and as editor of the *RSNA Index to Imaging Literature*, which included nearly 40 journals. Dr. Eyler has been RSNA Historian since 1974.

In 2005, the RSNA Editorial Fellowship was named in honor of Dr. Eyler.

In practice for more than 60 years, Dr. Eyler, of Beverly Hills, Mich., continues to serve as a consulting radiologist at Henry Ford Hospital, where he was chair of the Department of Radiology for 28 years. RSNA offers him sincerest gratitude for his long-time service.

New Radiology Editor

The search is winding down for a new editor of *Radiology*. At RSNA 2006, the Board will meet with the final candidates. A selection will be made and the new editor will be announced in January. The new editor will work with current editor Anthony V. Proto, M.D., for one year until Dr. Proto retires at the end of 2007.

Other Board Action:

RSNA is working with several other societies to offer a Physics Education Conference in February 2007 in Dallas. RSNA will also financially support a brainstorming meeting on medical simulation at the National Institute of Biomedical Imaging and BioEngineering.

THERESA C. MCLLOUD, M.D.
CHAIR, 2006 RSNA BOARD OF DIRECTORS

■ Note: In our continuing efforts to keep RSNA members informed, the chair of the RSNA Board of Directors will provide a brief report in *RSNA News* following each board meeting. The next RSNA Board meeting will be at RSNA 2006.

Radiology Salaries Increase, but Many Practices Still Lose Money

SALARIES are on the rise for both interventional and non-interventional diagnostic radiologists, reflecting a trend seen among medical specialties across the nation. However, many practices are still losing money as a result of the higher costs of doing business.

The American Medical Group Association (AMGA) 2006 Medical Compensation and Financial Survey shows salaries of interventional, diagnostic radiologists in group practices increased 3.59 percent last year, after remaining flat in 2004. The median salary of \$424,992 was the sixth highest among the 108 specialties included in the survey.

Non-interventional, diagnostic radiologists ranked eighth overall in the AGMA survey, with a median salary of \$400,000 in 2005—an increase of 9.62 percent over the previous year.

Offering a look at finances of medical practices across the U.S. during 2005, the report is based on responses from 218 medical groups representing approximately 35,000 providers. RSM McGladrey conducted the survey for AGMA.

AGMA President and Chief Executive Officer Donald W. Fisher, Ph.D., C.A.E., said competition within individual physician specialties has gone up as demand has increased. Medical groups find themselves competing for specialists to join their teams, he said, “And in order to get them, they’ve got to pay competitive wages.”

Technology, Aging Population Also Factors
Ever-advancing technology is also driving up salaries for radiologists, Dr.

Fisher said. “Any time you can apply more technology, there’s usually a higher reimbursement and, therefore, a higher compensation,” he said. Many medical groups still link their compensation formulas, in part, to productivity, he added.

“If physicians are able to bring in more revenue, then they’re able to actually get a share of that,” he said.

Yet another factor contributing to salary increases is the aging of the U.S. population. Dr. Fisher predicted that patient visits to all medical facilities will steadily climb for the next several years. “It’s not unrealistic to assume that, as the Baby Boomers approach Medicare age, they’re going to start consuming more services,” he said.

Cardiac/thoracic surgeons were once again the highest paid specialists in the survey, with a median salary of \$470,000, representing an increase of 11.47 percent from the previous year.

Medical Groups Losing Money

While compensation increased for all 108 specialties studied in 2005, Dr. Fisher emphasized that salaries alone do not tell the entire story. Medical groups in every region of the country except the West actually lost money, on a per-physician basis, for providing care.

Losses were highest in the northern region, which includes the states of Illinois, Indiana, Iowa, Michigan, Minnesota, Nebraska, North Dakota,

Ohio, South Dakota and Wisconsin. The median per-physician loss in these states was about \$8,000 in 2005. The eastern and southern regions showed smaller losses but higher costs of doing business accounted for losses in all areas.

“Each of us is experiencing increases in our own costs of daily living and medical groups have the same kind of costs—in heating and cooling,

Each of us is experiencing increases in our own costs of daily living and medical groups have the same kind of costs—in heating and cooling, cost and delivery of supplies.

Donald W. Fisher, Ph.D., C.A.E.

cost and delivery of supplies,” Dr. Fisher said. Reimbursements are not keeping up, he said. “When you see a zero percent update on Medicare, and most private carriers index off

Medicare, medical groups in most areas of the country aren’t able to cover their costs.”

With pressure already on medical groups to limit cost increases as much as possible, Dr. Fisher said, further reimbursement reductions slated to begin in 2007 and 2008 will only exacerbate the problem.

Trends Not Sustainable

Current salary trends cannot hold up long-term, Dr. Fisher said. “If we’re really focused on patient-centered care and want to do everything we can to make the highest quality and safest care available for patients, we can’t continue to expect medical groups to lose money on a per-physician basis and still provide that level of care,” he said.

Dr. Fisher believes physicians are

Top Physician Compensation

| Specialty | 2005 | 2004 | 2004-2005 Percent Increase | 2003 |
|---|-----------|-----------|-------------------------------|-----------|
| Cardiac / Thoracic Surgery | \$470,000 | \$421,620 | 11.47 | \$416,896 |
| Diagnostic Radiology - M.D.s (Interventional) | \$424,992 | \$410,250 | 3.59 | \$410,250 |
| Orthopedic Surgery | \$409,518 | \$381,429 | 7.36 | \$354,495 |
| Cardiology - Cath Lab | \$406,230 | \$380,279 | 6.82 | \$368,938 |
| Diagnostic Radiology - M.D.s (Non-Interventional) | \$400,000 | \$364,899 | 9.62 | \$345,619 |

Top Physician RVUs

| Specialty | 2005 | 2004 | 2004-2005 Percent Increase | 2003 |
|---|-------|-------|-------------------------------|-------|
| Cardiology - Cath Lab | 9,083 | 8,562 | 6.07 | 7,965 |
| Diagnostic Radiology - M.D.s (Interventional) | 8,949 | 8,582 | 4.28 | 8,726 |
| Cardiac / Thoracic Surgery | 7,998 | 7,650 | 4.54 | 8,107 |
| Diagnostic Radiology - M.D.s (Non-Interventional) | 7,571 | 7,679 | -1.41 | 7,183 |
| Gastroenterology | 7,548 | 7,298 | 3.43 | 7,219 |

Top Physician Gross Charges

| Specialty | 2005 | 2004 | 2004-2005 Percent Increase | 2003 |
|---|-------------|-------------|-------------------------------|-------------|
| Cardiology - Cath Lab | \$2,338,394 | \$2,161,296 | 8.19 | \$2,047,041 |
| Diagnostic Radiology - M.D.s (Interventional) | \$1,999,231 | \$1,748,617 | 14.33 | \$1,609,605 |
| Cardiac / Thoracic Surgery | \$1,875,143 | \$1,505,710 | 24.54 | \$1,791,015 |
| Diagnostic Radiology - M.D.s (Non-Interventional) | \$1,793,100 | \$1,722,194 | 4.12 | \$1,544,799 |
| Orthopedic Surgery | \$1,702,524 | \$1,511,748 | 12.62 | \$1,499,557 |

frustrated because every time they improve quality and safety, they get hurt economically—a very serious problem he said must be dealt with right away.

“What we really need to do,” he said, “is come up with a new reimbursement system that aligns what patients and providers want to see as fair compensation for providing good medicine.” □

■ To learn more about the American Medical Group Association and its annual survey, visit www.amga.org.

Personal Financial Seminars at RSNA 2006

Two comprehensive financial seminars are available again this year on Saturday, November 25, at McCormick Place in Chicago just prior to the RSNA annual meeting.

“Protecting Assets from Creditor Claims, Including Malpractice Claims” will be held from 10:00 a.m. to 12:00 p.m. and costs \$129. “Effective Investment Strategies” will be held from 1:30 p.m. to 5:00 p.m. and costs \$159. Save almost \$20 by registering for both courses for \$269. Textbooks written specifically for each course are included.

Register for the courses by going to rsna2006.rsna.org and clicking on Registration, Housing & Courses. Please note that these seminars do not qualify for *AMA PRA Category 1 Credit*™. For more information, please contact the RSNA Education Center at 1-800-381-6660 x3747 or ed-ctr@rsna.org.



Ultrasound Effects on Fetal Brains Questioned

A NEW STUDY showing prolonged exposure to ultrasound waves affects the migration of brain cells in fetal mice has grabbed the attention of the radiologic community. However, researchers say the results of ongoing studies in primates should more fully determine the implications for humans.

Highlighting concerns over how ultrasound may affect fetal brain development in humans, findings in the Yale study come as radiologists and ultrasonographers grow more concerned about the increasing use of home ultrasound machines by private individuals for “baby pictures” or “fetal videos.”

The study, published in the August 7, 2006 issue of the *Proceedings of the National Academy of Sciences*, was led by senior researcher Pasko Rakic, M.D., Ph.D., professor and chair of the Department of Neurobiology at Yale.

Dr. Rakic’s team found that ultrasound waves applied during gestation in fetal mice affected the positioning of neurons as they migrated to the cerebral cortex. The study revealed that in the brains of fetal mice exposed to ultrasound waves, “a smaller percentage of cells migrated to the upper cortical layers and a larger percentage in the lower layers and the white matter.”

Dr. Rakic’s group is now studying the effect of a prolonged in utero exposure to ultrasound on mouse behavior after birth. They are also continuing their research on rhesus monkeys, where the fetal primate brains provide a cell type and migration path more similar to those of humans.

Frivolous Use Concerns Reinforced

Dr. Rakic is the first to admit that it is too soon to tell what effect ultrasound waves might have on human fetus neuron migration.

“We were even wondering whether to publish our findings before we finished these primate studies, even though we have a lot of data from mice,” said Dr. Rakic. But even though the second-stage primate research will continue for several more years, he decided to go ahead and publish his early findings in order to raise and reinforce warnings about the casual use of ultrasound for non-medical purposes.

“I want to make it clear that this study should not discourage women from having fetal ultrasound scans if there is a medical reason,” said Dr. Rakic. Whatever risk there may be to ultrasound usage, he said, it would be minimal compared to the importance of

I want to make it clear that this study should not discourage women from having fetal ultrasound scans if there is a medical reason.

Pasko Rakic, M.D., Ph.D.

spotting and diagnosing fetal diseases using an ultrasound scan.

However, Dr. Rakic feels this preliminary research reinforces U.S. FDA rules about the non-medical use of ultrasound. “We should be using the same care with ultrasound as with x-rays,” said Dr. Rakic,

comparing untrained people casually using ultrasound today to past frivolous use of x-rays on feet in order to properly fit new shoes.

His concerns are echoed by Carol M. Rumack, M.D., chair of the American College of Radiology’s Ultrasound Commission and a professor of diagnostic radiology at the University of Colorado at Denver.



Pasko Rakic, M.D., Ph.D.
Yale University School of Medicine

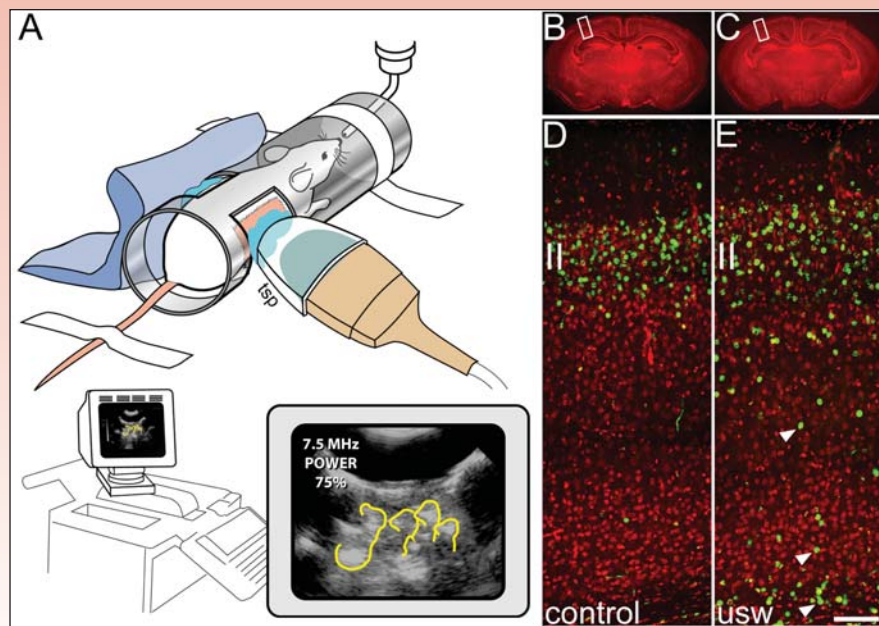
“People think there’s absolutely no risk to ultrasound,” said Dr. Rumack. “They have to understand what they are using—it really shouldn’t be a toy.” She added that “everything is safe in the right dose, but we need to remind people that using ultrasound for fetal videos for no medical reason—such as people who want to just look at the baby for 45 minutes—is not appropriate.”

Primate Research Will Take Time

The double-blind primate research should provide more specific insight into the possible effects of ultrasound waves on human fetuses, but the study will take more time as the team must wait several years to fully record data on the subjects after they are born and begin to age.

Dr. Rakic pointed out that in developing human and primate fetal brains, the eventual positioning of the migrating neurons is more precise than in mice. Also, the cells must travel a longer path from the proliferative zones to the cortex. This raises a main ques-

Experimental set-up and basic finding



(A) Experimental design of the system used for exposure of pregnant mice to ultrasound waves (USW). The mouse is placed in the tube chamber and separated from the transducer by a 1-inch tissue stand off pad (TSP). (B,C) Coronal slices through 10-day-old control and ultrasound-exposed mouse brains, respectively. No gross abnormalities are seen between the ultrasound exposed slice in (C) compared to the sham exposed slice in (B). However, examination of samples [white rectangles in (B) and (C)] stained for a DNA marker that indicates neuronal birthdate shows a difference between control (D) and ultrasound-exposed brains (E). This is a severely affected example where more cells in the ultrasound-exposed brain (E) do not reach their appropriate position in layer II and instead remain scattered in the lower layers and sub-adjacent white matter (white arrowheads).

Proc. Nat. Acad. Sci. (USA) 103:34:12903-12910. © 2006 National Academy of Sciences, U.S.A.

tion Dr. Rakic is asking during the primate study. “You could say that because the migration pathways are longer, neurons could have more of a chance to be affected,” said Dr. Rakic. However, he added, it’s also possible that the longer migration path spreads individual cells out further along the route, reducing the specific risk to each one.

Drs. Rakic and Rumack see the Yale study as reinforcing, rather than changing, physicians’ existing attitudes toward usage of fetal ultrasound. However, one possible outcome of Dr. Rakic’s research is an expansion of guidelines regarding how often and at what point during a pregnancy ultrasound is used. Dr. Rumack noted that although there

are already guidelines for the limited use of ultrasound in the first trimester, “Dr. Rakic’s research on migration is interesting and potentially important, because migration continues throughout human babies’ development.”

Dr. Rakic noted that at this point, given the nature of neuron migration and fetal brain development, researchers do not know exactly what long-term effects ultrasound waves may have on human babies. “Almost anything could be affected,” he said.

While preliminary research has drawn attention to the issue, researchers and physicians are taking a “wait and see” attitude. “It depends on what Dr. Rakic finds next,” said Dr.

Rumack. “He will have to show—in primates with a much larger migration distance—that something happens with the neurons, before we would get truly concerned.”

Dr. Rumack went on to say that while the study “emphasizes the need to be careful, particularly with Doppler ... as with anything in medicine, you weigh the risks and benefits. You’re not going to stop using ultrasounds.” □

■ To view the abstract for the article, “Prenatal exposure to ultrasound waves impacts neuronal migration in mice,” go to www.pnas.org/cgi/content/short/103/34/12903.

Assumptions About Ultrasound in Detecting Fetal Anemia Reinforced

EVEN AS A Yale study raises questions about the overall safety of fetal ultrasound scans, another study has confirmed that Doppler ultrasonography is safer and more accurate than amniocentesis in detecting fetal anemia.

The study, published in July 13, 2006 issue of *The New England Journal of Medicine*, was led by Dick Oepkes, M.D., of the Department of Obstetrics at Leiden Univer-

sity Medical Center in the Netherlands. Between 2000 and 2004, the multicenter, international study led by Dr. Oepkes’ team tested 165 fetuses carried by mothers exhibiting symptoms of possible fetal anemia. Seventy-four of the fetuses had the disease.

The study revealed that, in testing for fetal anemia, Doppler ultrasound tests on the middle cerebral artery returned higher percentages than amniotic fluid tests in several

categories: sensitivity (88 percent vs. 76 percent), specificity (82 percent vs. 77 percent) and accuracy (85 percent vs. 76 percent).

Dr. Oepkes said the results reinforce the general assumptions of radiologists and ultrasonographers, who have long believed ultrasound is superior to amniocentesis in fetal anemia detection.

Gene Implicated in Adverse Radiation Effects Fuels Search for Variations

RESearchers working to develop a test for adverse radiation response report establishing one gene as being associated with clinical radiosensitivity and are now examining other genetic variations.

Researchers in the U.S., Israel, France and Switzerland are collaborating on the Genetic Predictors of Adverse Radiotherapy Effects (Gene-PARE) Project, aiming to develop a way of identifying individuals most likely to experience pronounced radiation-induced damage of normal tissue. They envision a predictive test that will give doctors—as well as individuals faced with cancer diagnoses—even more information critical in making optimal treatment decisions.

The ideal, said Gene-PARE authors in a report published in the July 2006 issue of the *International Journal of Radiation Oncology*Biolog*Physics*,

is a specific assay enabling individual dose adjustment.

Lead author Alice Y. Ho, M.D., of the Department of Radiation Oncology at the Mt. Sinai School of Medicine in New York, said researchers have established a clinical database and biorepository of frozen lymphocytes derived from cancer patients treated with radiation. Through currently active studies, more than 2,000 radiotherapy patients will be screened for genetic variants. Although subjects screened to date are primarily breast and prostate cancer patients, the Gene-PARE tissue repository is not exclusive to those cancers.

Results Should Support Personalized Medicine

During the initial years of the project, said Dr. Ho, substantial attention was devoted to studying the ATM gene. Data showing this gene as associated with clinical radiosensitivity have

If we can pinpoint those who are known to have these gene mutations and likely will not respond well to radiation, we can refer these patients for alternative treatments.

Alice Y. Ho, M.D.

paved the way for examination of other genetic variations as predictors of adverse radiation responses, she said.

“Evidence has since been found to support the relationship between ATM sequence variations and radiosensitivity

for breast cancer patients treated with radiation, as well as prostate cancer patients treated with brachytherapy,” Dr. Ho said. “It is likely that this is not the only gene alteration that is responsible for adverse radiotherapy responses.”

Additional radiosensitivity candidate genes that have been linked to enhanced radiation responses are now being studied. The Gene-PARE approach involves screening the entire coding portion of each candidate gene.

It is anticipated that the Gene-PARE project will yield information allowing radiation oncologists to use genetic data to optimize treatment on an individual basis, said Dr. Ho.

“If we can pinpoint those who are known to have these gene mutations and likely will not respond well to radiation, we can refer these patients for alternative treatments,” Dr. Ho said.

Groups Being Studied in the Gene-PARE Project

| COUNTRY | SOURCE | TREATED CANCER SITE | NUMBER OF SUBJECTS |
|------------------------|--|---------------------|--------------------|
| U.S. | Department of Defense Breast Cancer Research Program | Breast | 150 |
| U.S. | Department of Defense Prostate Cancer Research Program | Prostate | 200 |
| U.S. | N.Y. State Department of Health | Breast and prostate | 100 |
| U.S. | American Cancer Society | Prostate | 225 |
| U.S. | Veterans Affairs Administration | Prostate | 350 |
| Denmark | Danish Cancer Society | Breast, head, neck | 41 |
| Israel | Not indicated | Breast | 150 |
| Switzerland | Swiss Cancer League | Breast, head, neck | 28 |
| France and Switzerland | Not indicated | Breast | 1,012 |

Adverse effects being examined in breast, head and neck cancer studies are telangiectasia and fibrosis. In prostate cancer groups, the adverse effects being studied are erectile dysfunction, urinary tract morbidity and proctitis.

Reprinted from *International Journal of Radiation Oncology*Biolog*Physics* 65:3:648-655. Ho, A.Y., et al. “Genetic Predictors of Adverse Radiotherapy Effects: The Gene-PARE Project.” © 2006, with permission from Elsevier.

Radiation Oncology at RSNA 2006

Here is a sample of the RSNA 2006 events addressing radiation treatment planning and response assessment. For more information, refer to the printed or online versions of the RSNA 2006 *Meeting Program*.

Refresher Courses

■ RC119

Imaging and Prostate Cancer Radiation Treatment Planning

■ RC118

Therapeutic Response Assessment in Oncology

■ RC319

Imaging and Head and Neck Cancer Radiation Treatment Planning

■ RC322

Intensity-modulated Radiation Therapy Patient Safety and Error Reduction

■ RC419

Imaging and Breast Cancer Radiation Treatment Planning

■ RC422

Quality Assurance for Treatment Planning

■ RC522

Minicourse: Image Optimization for Radiation Therapy Treatment Planning: Brain, Head and Neck and Extremities

■ RC722

Minicourse: Image Optimization for Radiation Therapy Treatment Planning: Lung, Upper Abdomen and Pelvis

Special Focus Session

■ SFS05

Cancer: Early Predictors of Tumor Response

Multisession Course

■ CR21-24

Case-based Review of Radiation Oncology (Thoracic, Breast, Gynecologic and Gastrointestinal Cancers)

Scientific Paper Session

■ SSE25

Radiation Oncology and Radiobiology (Quality of Life and Outcomes)

Education Exhibit

■ LL-MS3182

Radiological Evaluation of Tumor Response to Treatment: "To Measure or Not to Measure, That Is the Question."

Scientific Poster

■ LL-RO4347-L05

Prospective Patient Related Quality Assurance (QA) Indicators to Detect Treatment Errors and Potential Overdose in Radiotherapy

Informatics Special Event

■ LL-IN1404-6A

Imaging Response Assessment Teams (IRAT) in Cancer Centers

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"These patients may be better suited to a surgical treatment approach or we could consider recommending a lower dose of radiation and have less of a chance of damaging surrounding tissue."

The study also highlights the potential for radiotherapy dose modification, as radiosensitive tumors theoretically should require lower total treatment doses than their genetically non-variant counterparts. Conversely, for the vast majority of patients who do not possess genetic variants associated with radiosensitivity, it may be possible to escalate the dose and potentially achieve more cancer cures.

Study Has Unique Ethnic Focus

The Gene-PARE project is unique in that it is anticipated that out of the 2,000 radiotherapy patients in the database, a minimum of 500 African-American subjects will be screened for

genetic variants associated with clinical radiosensitivity. These samples may allow identification of important genetic predictors specific for this population, Dr. Ho said. Initial results, she said, suggest substantial differences between the genetic factors associated with development of adverse radiotherapy effects in African Americans, as compared with the general population.

Theodore S. Lawrence, M.D., Ph.D., described the approach taken by those involved with the study as "very creative and interesting."

Dr. Lawrence, a professor in the Department of Radiation Oncology at the University of Michigan, said the jury is still out on whether ATM alone is going to be useful in predicting who will be responsive to radiation.

"But the concept of developing a genetic pattern for who will be sensitive to radiation is an evolutionary one," said Dr. Lawrence, who will

deliver the Annual Oration in Radiation Oncology, "Looking Beyond Anatomic-Based Treatment in Radiation Oncology," at RSNA 2006. (See page 17 for a lecture preview.)

"It's very important work that needs to go on," said Dr. Lawrence. "The old expression, 'The longest journey starts with the first step,' seems to work here. I think this will in the end give us a molecular signature of radiation sensitivity." □

■ The abstract for "Genetic Predictors of Adverse Radiotherapy Effects: The GENE-PARE Project" can be viewed at www.rtsource.com/periodicals/rob/article/PIIS0360301606004007/abstract.

Confusion Builds as NPI Deadline Nears

AS A deadline looms for every healthcare provider to obtain a National Provider Identifier (NPI), bureaucracy and security concerns are causing confusion and uncertainty.

In an effort to streamline the process of standard electronic transactions, the Health Insurance Portability and Accountability Act (HIPAA) of 1996 requires covered entities—including providers completing electronic transactions, healthcare clearinghouses and large health plans—to use only the NPI to identify covered healthcare providers in standard transactions by May 23, 2007.

Small health plans must use only the NPI by May 23, 2008.

A 10-digit, intelligence-free numeric identifier, the NPI will replace healthcare provider identifiers used today in HIPAA standard transactions, including Medicare legacy IDs such as the Universal Provider Identification Number (UPIN), Online Survey, Certification and Reporting System (OSCAR), Provider Identification Number (PIN) and National Supplier Clearinghouse (NSC).

Intelligence-free means the numbers do not carry any personal provider information, such as the state in which the practice is located or the specialty.

According to Martin Jensen, chief operation officer and chief analyst for the Healthcare IT Transition Group, an organization that hosts NPI information seminars, the NPI is likely to become the universal physician identifier. “Technically, there are physicians who

are not legally required to get an NPI, but practically, nearly all will need it,” he said.

NPIs will be used to identify healthcare providers in the following standard transactions:

- claims
- eligibility inquiries and responses
- claim status inquiries and responses
- referrals
- remittance advices

Even providers who employ third-party business associates to conduct electronic transactions on their behalf will need to obtain an NPI.

James V. Rawson, M.D., who taught the RSNA 2005 refresher course “Hospital Outpatient Reimbursement: How to Help Your Hospital,” agreed that virtually all providers will need an NPI. “The general consensus is, if you don’t have it, you won’t get paid,” said Dr. Rawson, chief of radiology service at the Medical College of Georgia Health System.

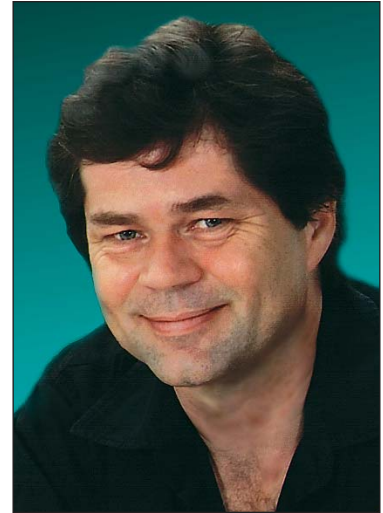
The Centers for Medicare and Medicaid Services (CMS) defines a healthcare provider as an individual, group or

organization that provides medical or other healthcare services or supplies. This includes:

- physicians and other practitioners
 - physician/practitioner groups
 - institutions such as hospitals, laboratories and nursing homes
 - organizations such as health maintenance organizations
 - suppliers such as pharmacies and medical supply companies
- Not included are health industry

The general consensus is if you don't have [an NPI], you won't get paid.

James V. Rawson, M.D.



Martin Jensen
Healthcare IT Transition Group

workers, such as admissions and billing personnel, housekeeping staff and orderlies, who support the provision of healthcare but do not provide healthcare services.

Potential Security Compromises

Some providers are concerned about access to NPIs and how the numbers will be protected, particularly in light of the theft of the personal information of more than 25 million Department of Veterans Affairs beneficiaries earlier this year.

“As the implementation of the NPI advances toward the May 2007 deadline, concerns over who will have access to the NPIs and how they will be protected will continue to surface,” American Medical Association (AMA) Executive Vice-President and Chief Executive Officer Michael D. Maves, M.D., M.B.A., wrote in a letter to CMS.

“The AMA continues to advocate for limited access to the National Provider and Payer Enumeration System (NPPES),” Dr. Maves stated. “In addition, the AMA strongly supports a prohibition on using the NPI for any commercial purposes regardless of whether or not the NPI information was obtained through the NPPES.”

Until CMS publishes the data dissemination policy, however, little is known about who will have access to the NPPES. The AMA opposes releasing a physician’s personal data and advocates that CMS require that any data elements released to the public comply with the strictest federal privacy rules and regulations. The AMA also said the sales of NPI numbers should be strictly prohibited.

Jensen sees the issue in a different light, advocating for making NPIs open numbers to avoid turning them into a security issue. Without the ability to look up NPIs for other providers—as they can now via the UPIN registry, for instance—providers may have difficulty obtaining the referring provider identification numbers they need to

send a claim, he said.

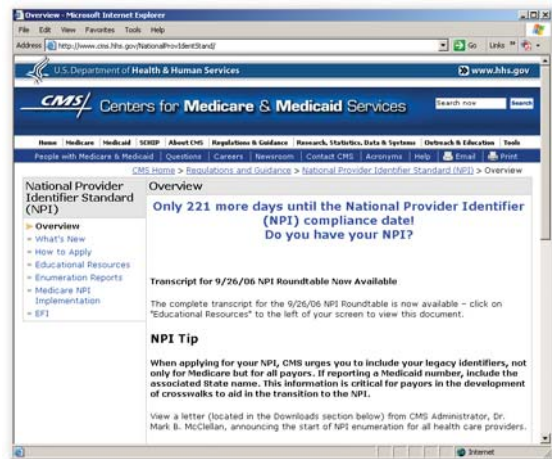
“That’s the best way to defang that snake,” Jensen said. He acknowledged legitimate concerns about providers receiving unsolicited marketing appeals but added, “In catastrophic situations, like a Hurricane Katrina, for example, it would be easier and more efficient for pharmacies to be able to find a doctor with one number instead of several.”

The NPI has an important patient safety dimension, Jensen said, noting, “It’s hard to compare the inconvenience of getting junk mail to saving people’s lives.”

Still a conversion of this magnitude brings with it uncertainty, and many wonder what to expect. “No one has any projections on the transition,” said Dr. Rawson. “It could range from minor bumps to major changes.”

Jensen said he doesn’t foresee the transition seriously affecting patient

care. “Even with all the fits and starts, no one is willing to shut down health-care,” he said. □



- Details about the NPI are available from CMS at www.cms.hhs.gov/NationalProvIdentStand/.
- For more information about the status of the NPI implementation, go to Jensen’s blog at blog.hittransition.com.

How to Apply for a National Provider Identifier

PROVIDERS can apply for a National Provider Identifier (NPI) in one of three ways:

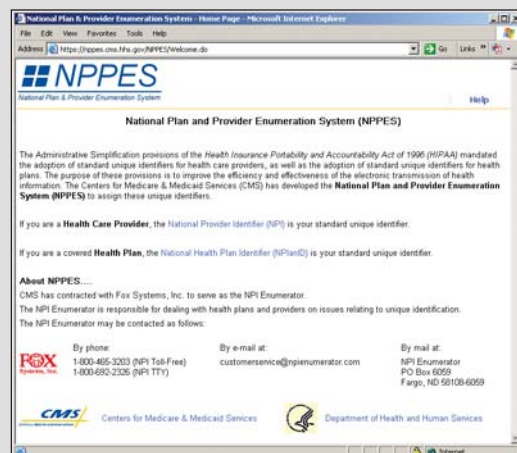
1. Complete an application online at nppes.cms.hhs.gov.
2. Complete the paper application/update form and mail it to an NPI Enumerator, a special contractor hired by CMS. More information about the NPI Enumerator is available at 1-800-465-3203.
3. Give permission to a CMS-approved Electronic File Interchange Organization to obtain an NPI for the provider. Processing many NPI requests at a time, these organizations may be most appropriate for large medical practices and hospitals.

Martin Jensen, COO and Chief Analyst for the Healthcare IT Transition Group, which hosts NPI seminars, recommends providers apply online. He advises providers to print out several copies of the

application and save the e-mail notifying them that the application was received, as some payers

ask to be forwarded a copy.

When filling out the form, Jensen said, it is best to provide all legacy identifiers—not only those for Medicare—and include the associated state number when reporting a Medicare number. He also recommends listing provider taxonomy codes for all the physician’s subspecialties to make construction of cross referencing files more accurate.





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RECOGNIZING donors who make planned gifts to the Foundation, the Legacy Donor Program provides benefactors the opportunity to integrate their donations with their overall financial, tax and estate planning goals, maximizing benefits for donors and the R&E Foundation.

| LEGACY GIVING MILESTONES: | |
|---------------------------|---------------------|
| Galaxy | \$1,000,000 or more |
| Star | \$500,000 |
| Diamond | \$250,000 |
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Legacy donors receive special recognition for their planned gifts in *RSNA News* and the *RSNA Annual Report*, as well as on the Foundation Web site and in the R&E Pavilion at the annual meeting.

For more information about the Legacy Donor program and other R&E giving programs, visit RSNA.org/foundation or contact the Foundation at R&EFoundation@rsna.org or call 1-800-381-6660 x7885.

Submit Mid-January Grant Applications Online

Applicants for R&E education and research grants can build their applications online.

The deadline for education grants is January 10 and the

deadline for research grants is January 15.

More details about the recently restructured grant programs will be available at

the R&E Foundation Pavilion during RSNA 2006 or at RSNA.org/foundation.

RSNA 2006 Lecture/Oration Preview

RSNA 2006 will feature honored lectures by these esteemed medical leaders: J. William Charboneau, M.D., of Rochester, Minn., Kerry M. Link, M.D., of Winston-Salem, N.C., and Theodore S. Lawrence, M.D., Ph.D., of Ann Arbor, Mich.

Eugene P. Pendergrass New Horizons Lecture

Radiologists historically have advanced the care of cancer patients by using imaging to detect cancer, stage the disease and determine response to therapy. Now radiologists are leading the way to an important new horizon—directly treating many forms of cancer using innovative percutaneous ablative and catheter-based techniques.



J. William Charboneau, M.D.
Rochester, Minn.

“There is a tremendous sense of excitement in the medical community over the potential of these methods to either cure solid cancers or palliate the effects of cancer,” said J. William Charboneau, M.D., a professor of radiology at Mayo Clinic College of Medicine in Rochester, Minn.

Dr. Charboneau will deliver the New Horizons Lecture, “Image-Guided Cancer Treatment: The Science and Vision of an Emerging Field,” on Monday, November 27.

“These new methods are less invasive than conventional surgical resection and are proving to be both effective and safe,” said Dr. Charboneau. “They result in markedly reduced morbidity and patient discomfort, allow the patient to

rapidly return to normal activity and can potentially reduce overall healthcare costs.”

Future advances, he said, will provide more certainty of cancer destruction with even less invasiveness than is offered now. “Additionally, improved imaging methods will allow more accurate guidance during procedures and for real-time monitoring of therapy,” said Dr. Charboneau.

Image-guided cancer treatment will see even greater use in the future, he said, as improved devices are combined with emerging chemotherapeutic or immune system-stimulating agents. “We will be able to offer the cancer patient an improved likelihood of cure and improved quality of life,” he said.

Dr. Charboneau co-edited *Diagnostic Ultrasound*, considered one of the premier texts in ultrasound imaging. He has presented at over 150 national and international meetings and has published more than 130 scientific publications in peer-reviewed journals.

A member of RSNA since 1977, Dr. Charboneau was a member of the National Academy of Sciences Committee on the Public Health Implications of Exposure to I¹³¹ from Nevada Atomic Bomb Tests. He has presented to a Congressional committee on future medical imaging technology.

Annual Oration in Diagnostic Radiology

Radiologists’ recent resurgence of interest in cardiac imaging reflects proficiency with coronary CT angiography and a healthy concern over losing the turf. While participation in cardiac imag-

ing historically has been uneven, a cadre of experienced practitioners is poised to capitalize on technological advances and establish radiology as a major player.

“This endeavor will take hard work, sacrifice, concessions and cooperation, but it is a tremendous investment in our future financial security and in the success of our specialty,” said Kerry M. Link, M.D., director of the Center for Biomolecular Imaging at Wake Forest University Health Sciences.

On Tuesday, November 28, Dr. Link will present the Annual Oration in Diagnostic Radiology, “Cardiac Imaging—A Second Chance.”

Radiologists must ask themselves if they’re ready to fundamentally change the way they diagnose disease, said Dr. Link. “Will we take on the responsibility of monitoring patients while they are being imaged, which was a major cause for losing turf in the past?” he asked.

The very technology on which radiologists have honed their skills, said Dr. Link, offers them a unique opportunity for reinvention.

“Few people in life are given a second chance—even fewer in life have the luxury of being both lucky and good,” he said. “We can be both lucky and good in cardiac imaging, this second time around.”

A classically trained cardiovascular radiologist, Dr. Link joined the faculty at the Wake Forest School of Medicine in



Kerry M. Link, M.D.
Winston-Salem, N.C.

1987 and started the first cardiac MR imaging service in conjunction with cardiology, emphasizing ischemic heart disease.

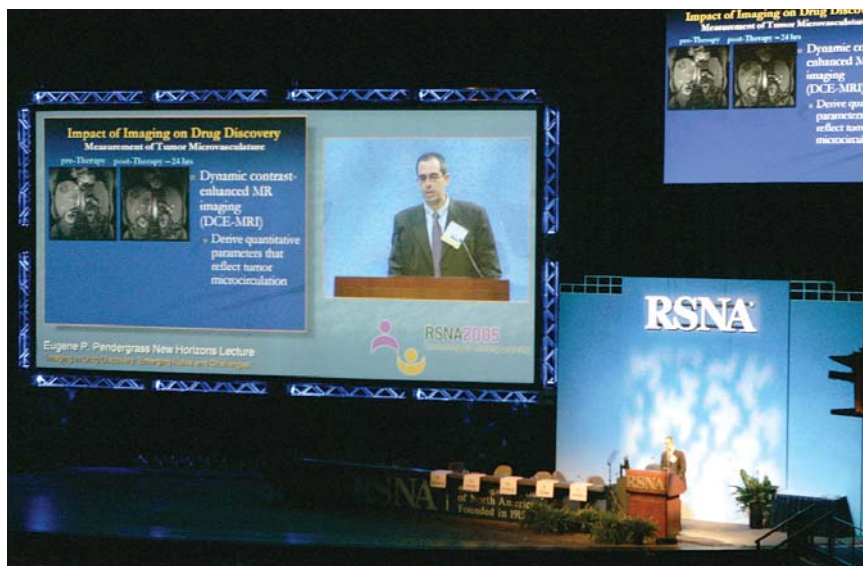
By 2000, Dr. Link was working to establish a dedicated imaging research facility at Wake Forest University Health Sciences. What began as a modest endeavor has grown into the world-renowned Center for Biomolecular Imaging. The center oversees basic science imaging research and animal, human and translational research, using an array of imaging equipment that includes various multislice CT scanners, microCT, microMR imaging and whole-body MR imaging, PET/CT and MicroPET and optical and ultrasound scanners.

As director of the center, Dr. Link oversees all clinical, animal and molecular imaging research. He also has served or is currently serving as principal or co-investigator of more than two dozen grant-funded research projects.

Annual Oration in Radiation Oncology

Using advanced treatment planning and delivery systems, radiation oncologists now treat tumors and avoid normal tissues with a level of sophistication virtually unimaginable 20 years ago. Thanks to discoveries in experimental therapeutics and radiology, radiation oncology is poised for another revolution.

“The collaboration between radiology and radiation oncology permits us to move from our current generic treatment based on anatomy and population estimates to individualized therapy based on function and knowledge of the individual patient’s tumor and normal tissue,” said



Lawrence H. Schwartz, M.D., delivered the New Horizons Lecture at RSNA 2005.

Theodore Lawrence, M.D., Ph.D., chair of the radiation oncology department at the University of Michigan and a professor in the Department of Environmental Health in the university’s School of Public Health.

On Wednesday, November 29, Dr. Lawrence will deliver the Annual Oration in Radiation Oncology, “Looking Beyond Anatomic-Based Treatment in Radiation Oncology.”

Maximizing the opportunities offered by technology and collaboration will permit the development of new treatments, such as those combining radiation therapy with chemotherapy and molecular therapy, Dr. Lawrence said.

Discoveries in functional imaging, he added, offer the potential for radiation oncologists to bridge basic biology to the clinic by permitting the targeting of tumor biology and the avoidance of functioning normal tissues. “There has never been a greater opportunity for productive collaborations between radiologists discovering new imaging approaches and radiation oncologists who want to

improve the outcome of radiation therapy,” he said.

Dr. Lawrence’s research focuses on using chemotherapeutic and molecularly targeted agents as radiosensitizers and in radiation protectors. He combines these laboratory studies with conformal radiation, guided by functional imaging, to treat patients with gastrointestinal and central nervous system malignancies.

Currently chair of the National Cancer Institute (NCI) Board of Scientific Clinical and Epidemiology Councilors and a member of the NCI Translational Research Working Group, Dr. Lawrence has also served in various positions with the American Society for Therapeutic Radiology and Oncology and American Society of Clinical Oncology.

His experience with NCI dates to 1983, when he began a 4-year fellowship there in medical and radiation oncology.



Theodore S. Lawrence, M.D.
Ann Arbor, Mich.

What's Happening at RSNA 2006

RSNA Lanyard

All RSNA 2006 professional attendees are eligible to receive a reusable badge lanyard with the RSNA and RSNA Research & Education logos. The lanyards are available for pickup at either Help Center (Grand Concourse or Lakeside Center, Level 3).

RSNA is also offering professional attendees an official RSNA annual meeting business tote for the first time. The tote is designed for everyday use after the meeting is over. Disposable plastic bags will also be available.

To obtain an official meeting bag and a complimentary copy of the *RSNA Meeting Program*, present a blue, red or green badge ticket stub at program distribution counters in the Grand Concourse or Lakeside Center, Level 3. Those who requested the *Meeting Program* in advance must bring their copy to the meeting.

RadiologyInfo™ Coaster

Stop by the online demonstration area of RSNA Services (level 3, Lakeside Center) to learn about the latest developments in *RadiologyInfo.org*, the patient information Web site sponsored by RSNA and the American College of Radiology. And don't forget to redeem your coupon—included in the book with your registration materials—for a free *RadiologyInfo.org* beverage coaster.



Secure Check-in for O'Hare Flights Available at McCormick Place

Passengers on select flights out of O'Hare International Airport can obtain boarding passes and check-in their luggage at the McCormick Place Convention Center. Approved by the U.S. Transportation Security Administration (TSA), the Baggage Airline Guest Services (BAGS™) program will be at RSNA 2006 to help attendees flying out of O'Hare on American, Continental, Delta, Northwest, Ted and United airlines.

BAGS is a secure, offsite multi-airline check-in service used in metro areas throughout the country. For more information, including fees, go to rsna2006.rsna.org.

R&E Acts Out

Don't miss the surprises as the RSNA Research & Education Foundation offers a first-of-its-kind interpretation of radiology research—past, present and future. Attend the R&E Foundation presentation in the Arie Crown Theater on Sunday, Nov. 26 from 4 – 4:10 p.m., prior to the Image Interpretation Session.

Webcast of Image Interpretation Session

RSNA members who cannot attend RSNA 2006 can still participate in the Image Interpretation Session, one of the most popular sessions at the annual meeting. Attendees are led through the process of identifying abnormal imaging findings, constructing differential diagnoses based on those findings and making recommendations for further procedures or treatment, as necessary.

Registration is now open to view the Webcast on Sunday, November 26 at 4:10 p.m. (Central Time). Go to RSNA.org/Sunday and click on the registration area.

The live Webcast offers 1.75 *AMA PRA Category 1 Credits*™. Although the Webcast will be archived for later viewing, CME will not be offered.

This year's moderator is Anne C. Roberts, M.D. Panelists are Andy Adam, M.B.B.S., Christine B. Chung, M.D., Robert H. Cleveland, M.D., Ella A. Kazerooni, M.D., M.S., and Robert D. Zimmerman, M.D.

Game Show Puts Neuroradiology Expertise to the Test

In what may be the liveliest educational program at RSNA 2006, attendees can test their neuroradiology knowledge and have fun. *Wait, Wait...Don't Tell Me: A Neuroradiology Quiz* will take place on Thursday, November 30 from 3 – 4 p.m.

Based on the popular National Public Radio program of the same name, the educational program is the brainchild of Robert M. Quencer, M.D., chair of the Department of Radiology at the University of Miami School of Medicine. Like its NPR inspiration, *Wait, Wait...Don't Tell Me: A Neuroradiology Quiz* will test neuroradiologist contestants with the Limerick Challenge, keep them guessing with true and bogus scenarios with Fool the Contestant and demand rapid-fire answers with Fill-in-the-Blank. All the questions will pertain to the field of neuroradiology.

"My original idea was to take some of the seriousness out of the annual meeting," Dr. Quencer said. "I wanted to educate in a way that was fun."

He would like to see other areas in radiology take his lead and create more active

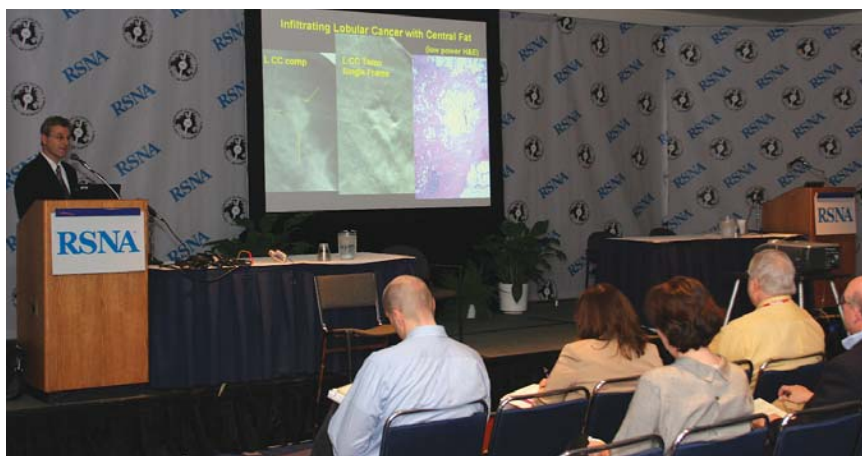
ways to educate. “My hope is other sections will do the same in the future,” he said.

Joining Dr. Quencer in presenting *Wait, Wait...Don't Tell Me: A Neuroradiology Quiz* are Lawrence Ginsberg, M.D., of the M.D. Anderson Cancer Center in Houston, Reed Murtagh, M.D., of the University of South Florida, John Hesselink, M.D., of the University of California at San Diego and Michael Huckman, M.D., of Rush University Medical Center in Chicago.

Press Conferences

Watch the news for coverage of RSNA 2006, as more than 150 members of the medical news media are anticipated at the annual meeting. Among the scientific paper titles to be the subject of press conferences are:

- Short-term Effects of Violent Video Game Playing: An fMRI Study
- Ecstasy: Is It Safe for the Brain? First Prospective Study on Effects of Low Doses of Ecstasy on the Brain in New Ecstasy Users
- Imaging Findings in Pulmonary Silicone Embolism
- Brand Perception—Evaluation of Cortical Activation Using fMRI
- The Way You Sit Will Never be the Same! Alterations of Lumbosacral Curvature and Intervertebral Disc Morphology in Normal Subjects in Variable Sitting Positions Using Whole-body Positional MRI
- Cost-effectiveness and Patient Tolerance of Low Attenuation Oral Contrast: Milk versus VoLumen
- Adjunctive Self-hypnotic Relaxation during Image-guided Large Core Needle Biopsy of the Breast: A Prospective Randomized Trial



More than 5,000 print, broadcast and online media carried stories from RSNA 2005, reaching an estimated 5.8 billion people.

- Ultrasound-guided Percutaneous Placement of Balloon Catheters for Partial Breast Irradiation (PBI) after Lumpectomy for Breast Cancer

Press releases from the annual meeting will be available beginning November 27 in the Media section of rsna2006.rsna.org.



Categorical Course Syllabi Available for Purchase

Purchase syllabi for the 2006 Categorical Course in Diagnostic Radiology, *Genitourinary*, and the 2006 Categorical Course in Diagnostic Radiology Physics, *From Invisible to the Visible—The Science and Practice of X-Ray Imaging and Radiation Dose Optimization*, at the Education Store in RSNA Services, Lakeside Center Ballroom – Level 3. The syllabi will also be available at the Education Store in the RSNA Services Booth 1100, Hall A.

RSNA 2006 Dining Offers a Taste of Chicago Neighborhoods

Experience the foods that have made Chicago famous. At stations located on the technical exhibit floor in the South Building, chefs will freshly prepare authentic selections from these Windy City neighborhoods:

- Little Italy (pizza, Italian beef and salads)
- Gold Coast (customized salads)
- Hyde Park (barbecued brisket, pork, chicken)
- Far East (Asian fusion)
- Back of the Yards (steak, pork chops, sausages)

Also new this year are “impulse dining” carts to be located throughout the technical exhibit floors in the South and North buildings and in the Lakeside Learning Center. Designed for busy attendees who want a quick bite to eat, these carts will offer a variety of snacks including made-to-order truffles, dipped pretzel sticks, Chicago hot dogs and small portions of tiramisu and parfaits.

Journal Highlights

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

Cardiac MR Imaging: State of the Technology

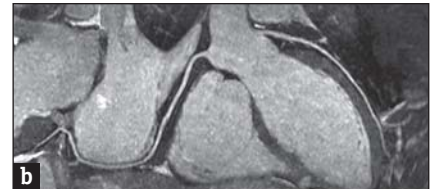
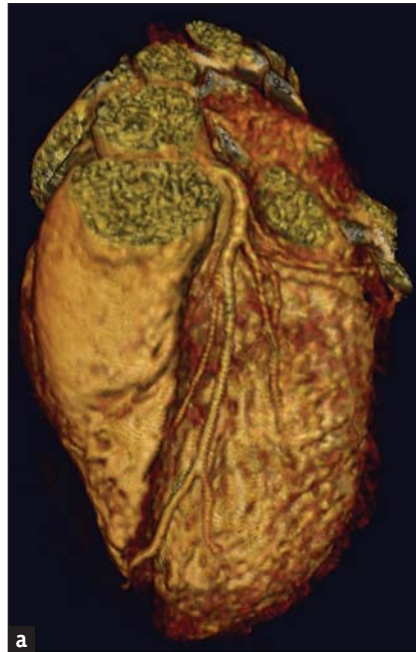
DESPITE the emergence of cardiac MR imaging as a practical clinical tool, many physicians are challenged to stay abreast of the most powerful techniques.

In a review article in the November issue of *Radiology* (RSNA.org/radiology), J. Paul Finn, M.D., of David Geffen School of Medicine at the University of California at Los Angeles, and colleagues detail the state of cardiac MR imaging and put into context some technical concepts behind the modality's diagnostic power.

Emphasizing techniques for which there are established clinical applications

Continued on page 22

Radiology



Whole-heart three-dimensional SSFP coronary MR angiography.

Near isotropic resolution, high blood-to-muscle contrast, and good fat suppression enable clear delineation of left and right coronary arteries on (a) reformatted and (b) volume-rendered images.

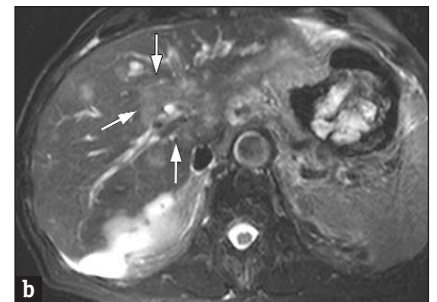
(*Radiology* 2006;241:528-537) © RSNA, 2006. All rights reserved. Printed with permission.

Normal and Pathologic Features of the Postoperative Biliary Tract at 3D MR Cholangiopancreatography and at MR Imaging

SHORT in duration, accurate and suitable for use in emergent situations requiring quick decision making, MR cholangiopancreatography has become the imaging modality of choice at many institutions for the work-up of patients with suspected bile duct abnormalities.

In an article in the November-December issue of *RadioGraphics* (RSNA.org/radiographics), Christine Hoeffel, M.D., of the Hôpital Saint-Antoine in Paris, and colleagues review the MR cholangiographic technique. Specifically, they:

- List the complications of hepatobiliary surgery for which MR imaging and



Tumor recurrence in a 70-year-old man 1 year after a Whipple procedure for a pancreatic adenocarcinoma.

(a) Coronal maximum intensity projection (MIP) image from a 3D respiratory-triggered T2-weighted fast spin-echo (SE) restore data set shows dilatation of jejunal loops (straight arrows) and intrahepatic bile ducts and narrowing of the bile duct at the confluence (curved arrow). The anastomosis is not visible.

(b) Axial T2-weighted fat-suppressed half-Fourier acquisition single-shot turbo SE (HASTE) MR image shows an ill-defined high-signal-intensity hilar metastasis (arrows) from pancreatic adenocarcinoma, which extrinsically compresses the biliary confluence.

(*RadioGraphics* 2006;26:1603-1620) © RSNA, 2006. All rights reserved. Printed with permission.

MR cholangiopancreatography are performed.

- Describe the MR imaging and MR cholangiographic appearance of nor-

mal postoperative changes after hepatobiliary surgery.

- Discuss how to recognize complications of hepatobiliary surgery on MR

Continued on page 22

Radiology in Public Focus

Press releases have been sent to the medical news media for the following articles appearing in the November issue of *Radiology* (RSNA.org/radiologyjnl):

MR Imaging with Remote Control: Feasibility Study in Cardiovascular Disease

ALACK of onsite technical expertise or inconveniently located MR imaging machines has led to cases where trained technologists are insufficient to provide adequate coverage and scheduling challenges may affect patient care.

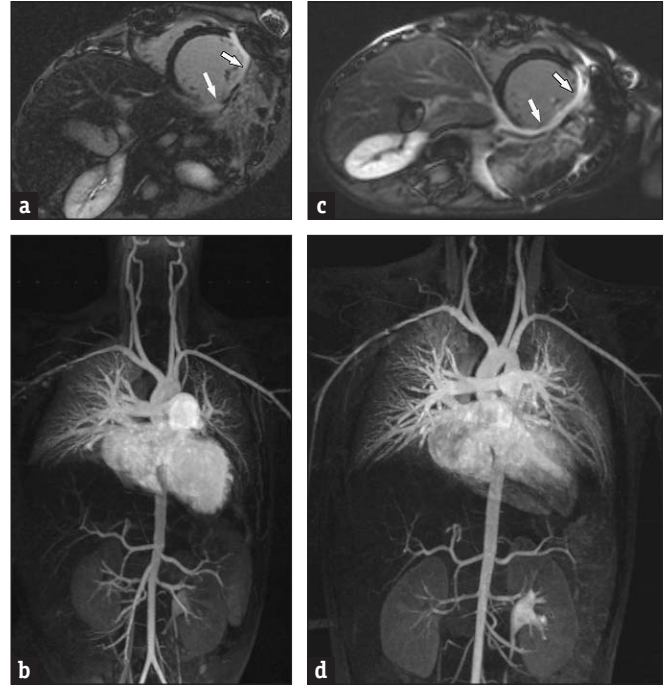
J. Paul Finn, M.D., of the David Geffen School of Medicine at the University of California at Los Angeles, and colleagues retrospectively evaluated diagnostic MR imaging with remote control in complex cardiac procedures on 30 adult and pediatric patients.

Dr. Finn and colleagues found that MR imaging with remote control is entirely feasible and can produce results at least as good as MR imaging with local control. Because the diagnostic studies described are among the most complex currently undertaken, results may potentially be generalized to other

Continued on next page

High-grade sarcoma of the myocardium involving the circumflex coronary artery in 5-year-old girl in whom surgical resection was complicated by myocardial infarction.

(a) Remote delayed hyperenhancement short-axis MR image of myocardium obtained within 1 month of resection. Extensive transmural hyperenhancement (arrows) is present in lateral and inferolateral left ventricular wall and is consistent with infarction in circumflex coronary artery distribution. (b) Remote coronal contrast-enhanced MR angiogram obtained at same time as (a). (c) Local delayed hyperenhancement short-axis MR image of myocardium obtained 8 months after resection. Extensive transmural hyperenhancement (arrows) is present in lateral and inferolateral left ventricular wall. (d) Coronal contrast-enhanced MR angiogram obtained at same time as (c). Both images were assigned scores that indicated they were highly diagnostic, with excellent definition of vascular anatomy.



(Radiology 2006;241:338-354) © RSNA, 2006. All rights reserved. Printed with permission.

Screening for Colorectal Neoplasia with CT Colonography: Initial Experience from the 1st Year of Coverage by Third-Party Payers

WHILE a promising colorectal screening tool, CT colonography has yet to achieve widespread acceptance or implementation due to mixed results from multicenter clinical trials and lack of third-party reimbursement. National managed care organizations view CT colonography screening as largely investigational.

Perry J. Pickhardt, M.D., and colleagues at the University of Wisconsin Hospital and Clinics met with major third-party payers who covered the

practice to discuss the prospects of CT colonography screening through the use of a clinically validated method.

For the study, major managed care providers initiated local third-party coverage for CT colonography for one year. The actual endoscopic referral rate for positive findings at CT colonography was 6.4 percent (71 of 1,110 patients). Demand for CT colonography screening from primary care physicians and their patients increased throughout the study period.

As a primary colorectal screening tool, the team writes, "CT colonography covered by third-party payers has an acceptably low endoscopic referral rate and a high concordance of positive findings at optical colonoscopy."

An estimated 60 percent of the target population does not receive colon cancer screening, the authors write, indicating the need for more effective screening options. Despite being largely preventable, colon cancer remains the second leading cause of cancer-related mortality in the U.S. (*Radiology 2006;241:417-425*)

Cardiac MR Imaging: State of the Technology

Continued from page 20

or that they believe will soon have a clinical role, Dr. Finn and colleagues discuss:

- Functional imaging
- Myocardial viability and perfusion imaging
- Flow quantification
- Coronary artery imaging

The authors note there has only recently been widespread adoption of cardiac MR imaging, which is alternately hailed as uniquely capable of defining cardiac anatomy and function and regarded as a difficult test with unpredictable results.

“In recent years, technical developments have had a dramatic effect on cardiac MR applications, such that the debate no longer focuses on the diagnostic power of MR imaging but on availability or local expertise,” they write.

Dr. Finn and colleagues add that while recent advances in multisection CT are a serious challenge to MR imaging in the assessment of coronary artery anatomy, “MR imaging will meet the challenge through continued developments in machine hardware, pulse sequences, motion compensation, and the use of novel contrast agents.”

MR Imaging with Remote Control: Feasibility Study in Cardiovascular Disease

Continued from previous page

study types, the team believes.

On average, “the diagnostic quality of the remote type of image was assigned a score that was higher than that for control images, which likely reflected the more varied experience levels among the local technologists compared with the experience level of the remote operator,” Dr. Finn and colleagues conclude.

Normal and Pathologic Features of the Postoperative Biliary Tract at 3D MR Cholangiopancreatography and at MR Imaging

Continued from page 20

cholangiographic images.

Methods traditionally used—including percutaneous transhepatic cholangiography or endoscopic retrograde cholangiopancreatography—are invasive

and may lead to serious complications, the authors write. CT cholangiopancreatography also has its limitations, they add, though current multidetector row CT scanners may ultimately

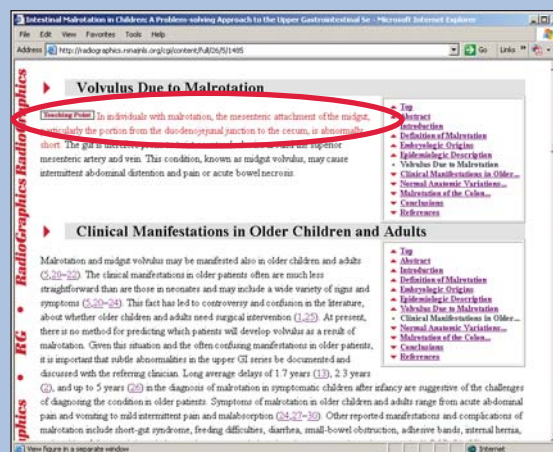
help overcome them.

“MR cholangiopancreatography is a safe and effective method for assessing postoperative alterations in the biliary tract,” Dr. Hoeffel and colleagues write. However, they add,

“an understanding of normal postoperative changes in the biliary tract is essential to properly perform the examination and interpret the resultant images.”

This article meets the criteria for 1.0 AMA PRA Category 1 Credit.

Online Teaching Points Further Enhance RadioGraphics



RSNA now offers busy *RadioGraphics* readers one more way to utilize the teaching point reading aids in major articles appearing in the journal. In online versions of the articles, the teaching points—the key concepts of an article as identified by the authors—are preceded by a Teaching Point icon and the text is red.

Teaching points previously were highlighted only in PDF versions of *RadioGraphics* articles. The PDFs will still contain those Teaching Points hot links.

Media Coverage of Radiology

In September, RSNA news releases reached more than 240 million people worldwide.

The media were alerted to a study of an MR imaging technique used to target brain tumors for surgical resection (*Radiology* 2006;240:793-802), as well as a study using MR imaging to detect multiple sclerosis in areas that

otherwise appear normal (*Radiology* 2006;240:811-820).

Coverage of September releases appeared in *Woman's World*, *Women's Health*, *The Dallas Morning News*, *The Miami Herald*, *The Indianapolis Star*, *The Vancouver Sun* and *The Blade* of Toledo, Ohio. Coverage also



appeared on the United Press International wire service and online at Yahoo! News, *Forbes.com*, *ajc.com* (Web site of *The Atlanta Journal-Constitution*), *Statesman.com*,

DrKoop.com, *RedOrbit.com* and *HealthCentral.com*.

Working For You

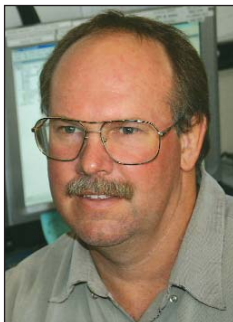
Making MIRC Work

This month *RSNA News* begins profiling real-world users of RSNA's Medical Imaging Resource Center (MIRC). Kicking things off is **Mike Haman, R.T.(R)(CV)(CT)**, Radiology Information Systems/Picture Archiving and Communication Systems (RIS/PACS) Coordinator at Loma Linda University Medical Center in California. Haman talked about how MIRC helped him solve the age-old dilemma of achieving more without spending more.

Making MIRC Work

RSNA'S FREE ONLINE RESEARCH AND EDUCATION TOOLS

IN THE radiology department at Loma Linda University Medical Center, 30 attending radiologists and 35 residents and fellows perform about 265,000 procedures a year. Aiming to create two teaching file cases per resident rotation on each service, but dissatisfied with the module offered on their PACS, the physicians looked to Haman for a solution.



Mike Haman, R.T.(R)(CV)(CT)

Just one RSNA 2005 hands-on class, along with a poster session led by a physician using the same kind of PACS as Loma Linda, was all Haman needed to give MIRC a try. "I promptly put a test MIRC site on my PC and was successfully sending images from PACS to MIRC in the space of an hour," he said.

Haman said he changed just one MIRC default setting, so that it captures and displays PACS comments when receiving a file. Assigning each file a specific user—rather than the file coming anonymously from the PACS—enables easier searchability later, he said.

MIRC provides complete flexibility in defining teaching file templates, and Haman said he's still trying to get consensus on his department's preference. He said he's also learned to work with extensible markup language (XML) to make refinements to MIRC documents.

Running a production MIRC site has required adequate infrastructure—Haman said he is fortunate the Radiology Library Committee funded a 3-terabyte server to devote to MIRC, which he backs up regularly.

"MIRC is in our data center and should be treated like any other hospital application," Haman said. "Could you imagine losing many hundreds of hours of work if it went down?"

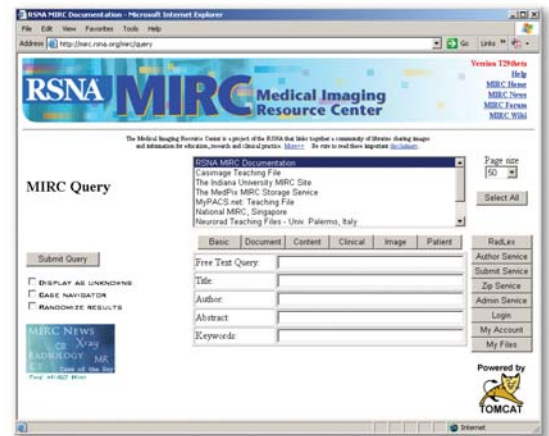
Radiologists are starting to use MIRC for more and more types of files, Haman said. His institution's diagnostic ultrasound program is interested in using it for both lecturing and testing.

Haman said he's confident that with feedback from users like him, MIRC's usefulness will grow. He said he would

The Half Dozen

MIRC quick tips from user Mike Haman, Loma Linda University Medical Center:

1. Document a backup strategy.
2. Designate a MIRC server and treat it just like another hospital application.
3. Establish a standard template of searchable fields.
4. Prevent MIRC from becoming littered with anonymous documents.
5. Use a test system.
6. Access the MIRC User Forums to troubleshoot problems.



Available free of charge to the medical imaging community, RSNA MIRC software can be used to create a teaching file system for public or private use. The software can also be used by clinical trials sites to manage and exchange images.

like to see certain fields automatically populated with standard language and codes, and users given the ability to create their own dropdown menus.

"I have not found another way we could do this as cheaply," he said. "Companies doing this are beyond my price range, and though I could have done this with one of my old servers, I wouldn't have felt comfortable with it long term. The old teaching file system lasted 50 years—now that I have started MIRC, it will not be replaced any time soon."

Working For You

RSNA Committees

This month *RSNA News* continues its series highlighting the work of RSNA's volunteer committees with a look at the Radiology Informatics Committee (RIC).

Radiology Informatics Committee

THE Radiology Informatics Committee, known until summer 2006 as the Electronic Communications Committee (ECC), promotes education, research and development related to emerging technologies in digital imaging and healthcare information systems.

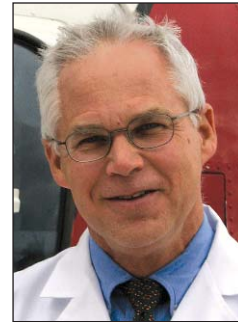
The RIC selects and organizes the informatics category of scientific posters, education exhibits and special demonstrations at the annual meeting.

“What you see at the annual meeting is only the tip of the iceberg,” said David E. Avrin, M.D., Ph.D., committee chair. “RSNA has been at the forefront of information

technology integration applied to healthcare, which is part of our national agenda.”

The RIC and its four subcommittees—focusing on Integrating the Healthcare Enterprise (IHE®), Medical Imaging Resource Center (MIRC),

RadLex™ and Imaging Informatics Coalition—are also developing methods to share images and reports across enterprise boundaries and simplify the creation and cataloging of interesting cases for research and education. In addition, they are developing a lexicon to enable



David E. Avrin, M.D., Ph.D.

datamining for outcomes research and curricula with other organizations for imaging informatics education.

More information about the Radiology Informatics Committee, including current members and the 2005 committee chair report, can be found at

RSNA.org/About/whoswho/committees/ecc.cfm. To learn about all committees and opportunities to volunteer, go to RSNA.org/About/volunteer.cfm.

Working for you
COMMITTEE PROFILE

Remit Member Dues Online

The 2007 RSNA annual dues renewal was mailed Oct 1. To ensure continuous online access to *Radiology* and *Radiographics*, dues must be paid by Dec. 31.

Members who have not already satisfied their 2007 dues may do so online at RSNA.org/renew. Membership staff is available to assist at 1-877-776-2636, 1-630-571-7873 or via e-mail at membership@rsna.org.

Don't Miss Important RSNA E-Communications

To ensure that important informational e-mails from RSNA are delivered to your inbox, take a moment to add alert@rsna.org to your address book.

RSNA sends just two e-mails per month to its membership. The e-Reminder alerts members to important events such as annual meeting registration and membership renewal, while the e-Newsletter highlights feature stories in the current issue of *RSNA News*.

Special Member Recognition

Last month, RSNA mailed special member recognition ribbons to almost 7,000 people who have been RSNA members for 25 years or more. The teal and gold ribbon can be attached to the RSNA annual meeting badge so that long-time members are easily recognizable at RSNA 2006.

| YEARS OF MEMBERSHIP | NUMBER OF MEMBERS |
|---------------------|-------------------|
| 25–29 years | 2,571 |
| 30–39 years | 3,005 |
| 40–49 years | 1,004 |
| 50+ years | 394 |



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

Product News

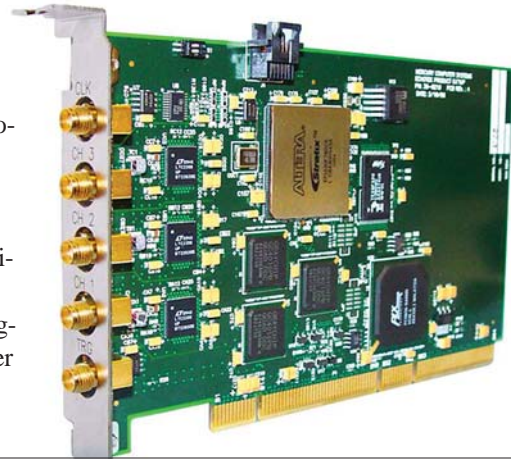
NEW PRODUCT

Digital MRI Receiver

MERCURY Computer Systems, Inc. (www.mc.com) now offers Visage™ MR, an MR imaging receiver shown in clinical trials to significantly improve image quality while reducing scan times.

Visage MR is a high-bandwidth, 16-bit analog-to-digital receiver board with advanced digital filtering and MRI-specific noise-reduction

technology. With four times the resolution of current-generation MR imaging receivers and an extremely high sampling rate, Visage MR extends dynamic range through decimation to 24-bits of resolution, preserving more of the MR imaging signal to allow the visualization of finer image detail while accelerating fast MR imaging sequences.



FDA APPROVAL

Faster Lung Biopsy

Mayo Clinic Medical Devices (mayoclinictechnology.com) has received FDA approval for its Interactive Breath-hold Control monitor. Designed by Mayo Clinic radiologists, the monitor helps patients experience shorter lung biopsy procedures with reduced need for repeat needle sticks. The device monitors breathing during CT-guided biopsy and helps the patient hold their breath consistently at the same point each and every time. Patients using the device benefit because the lung biopsy is less invasive and involves less radiation while still providing an accurate and rapid diagnosis.

PRODUCT UPDATE

Image Management Software

Representing nearly 200 feature requests and enhancements from customers, the Vision Series PACS Version 4.2 has been released by AMICAS, Inc. (www.amicas.com). The

new version gives the AMICAS RealTime Worklist™ the ability to display and prioritize exams based upon multiple levels of clinical severity and also introduces enhanced archiving and disaster recovery capabilities.



NEW PRODUCT

Latex-Free Biopsy Probe Cover

CIVCO Medical Solutions (www.civco.com) has introduced a newly designed latex-free cover for use with the new version of the Mammo-tome® EX biopsy probe and the Mammo-tome Hand-Held Holster. The cover provides a sterile, latex-free field during breast biopsies, offering a clear covering for easy identification and manipulation of the controls and reducing contaminates such as blood or fluids from getting into the control buttons on the probe. The cover is manufactured from CIV-Flex™, a soft, durable material approved for medical use.



News about RSNA 2006

Registration

Advance Registration

REGISTRATION materials, including name badge and holder, course tickets and other items, will be mailed to North American attendees who registered by November 10 and to international attendees whose registration forms were received by October 27. Those who register in advance can wear their badges to McCormick Place and proceed directly into exhibit halls and classrooms.



Earn up to 85 AMA PRA Category 1 Credits at RSNA 2006

International attendees who registered after October 27 are required to pick up their registration materials at McCormick Place at Professional Registration in the Lakeside Center Ballroom, Level 3, Desk A.

Onsite Registration

Those who need to register at McCormick should proceed to Professional Registration in the Lakeside Center Ballroom, Level 3. Registration fees are \$100 higher onsite for most registration categories.

Hours of Operation

Saturday, November 25 12:00 p.m. – 6:00 p.m.
 Sunday, November 26 – Thursday, November 30 . . . 7:00 a.m. – 5:00 p.m.
 Friday, December 1 7:30a.m. – 12:00 p.m.

One-Day Registration for Technical Exhibits Only

A one-day badge is available to view only the technical exhibits area. This badge can be purchased onsite on the day of use for \$300 at Exhibitor Registration. Attendance for more than one day requires full conference registration purchases at Professional Registration, Lakeside Center Ballroom, Level 3.

Important Dates for RSNA 2006

- Nov. 6** Final housing reservation deadline
- Nov. 10** Advance registration deadline
- Nov. 26–Dec. 1** RSNA 92nd Scientific Assembly and Annual Meeting

■ For more information about registration at RSNA 2006, visit RSNA.org, e-mail reginfo@rsna.org, or call 1-800-381-6660 x7862.



RSNA 2005 attendees get to know one another in the Professional Registration area.

Registration Fees

| BY 11/10 | ONSITE | |
|----------|--------|---|
| \$0 | \$100 | RSNA Member, AAPM Member |
| \$0 | \$0 | Member Presenter |
| \$0 | \$0 | RSNA Member-in-Training, RSNA Student Member and Technical Student |
| \$0 | \$0 | Non-Member Presenter |
| \$120 | \$220 | Non-Member Resident/Trainee |
| \$120 | \$220 | Radiology Support Personnel |
| \$570 | \$670 | Non-Member Radiologist, Physicist or Physician |
| \$570 | \$670 | Hospital Executive, Research and Development Personnel, Healthcare Consultant, Industry Personnel |
| \$300 | \$300 | One-day registration to view only the Technical Exhibits area |

Name Badge

You must wear your name badge at McCormick Place to attend RSNA courses and events, or to enter the exhibit halls. The bar code on the name badge may be scanned upon entry and exit of the exhibit halls. Data accumulated from the scanning process will be used only by RSNA to determine exhibit hall activity.



Exhibitor News

Technical Exhibit Area as Big as an Airport

IN ALL shapes and sizes, RSNA 2006 technical exhibits will offer something for every attendee. Located in the South Building, Hall A, and North Building, Hall B, at McCormick Place, the RSNA Technical Exhibition comprises nearly 750 healthcare companies spanning more than half a million square feet—an area as big as the Albuquerque airport terminal.

In each hall, a mix of healthcare companies will showcase products ranging from computer-

aided detection systems and image management products to mammography equipment and molecular imaging scanners. To help attendees make the most of the exhibition, a searchable database of exhibitor names, booth numbers, contact information and product listings is available at rsna2006.rsna.org/showcase. An interactive floor plan is also available at the Web site, which will remain available after the meeting.

Printed Exhibitor List

While at the RSNA annual meeting, access the exhibitor database at Internet Zones established throughout McCormick Place and Cyber Oases in the North and South Buildings. An abridged version of the Exhibitor List, with contact information, booth numbers and floor plans, will also be available in the *Meeting Guide*, located in bins throughout McCormick Place. The Company Locators area at the front of each hall, as well as You Are Here kiosks, will also help attendees navigate the technical exhibition.

Technical Exhibit Hours

Sunday, November 26–Wednesday, November 29

10:00 a.m. to 5:00 p.m.

Thursday, November 30

10:00 a.m. to 2:00 p.m.

Program and Grant Announcements

NIH Grantsmanship Workshop

November 25, 1–5 p.m. • McCormick Place, Chicago

HELD before the annual meeting, this workshop covers grantsmanship techniques including writing, concept development, submission and the NIH review process. In addition to learning about basic applications, K grants and the overall NIH grant application experience, attendees will also experience a mock study section.

The workshop will be facilitated by Lee Rosen, Ph.D., from the NIH Center for Scientific Review. Speakers will be Reed A. Omary, M.D., of Northwestern University, John Boone, Ph.D., of the University of California-Davis and John Haller, Ph.D., of the National Institute of Biomedical Imaging and Bioengineering.

Registration is available by visiting rsna2006.rsna.org and clicking on Registration, Housing & Courses.

2007 IHE® Connectathon Professional Development Luncheon

January 16, 2007 • Hyatt Regency Chicago—Wacker Drive

The 2007 Integrating the Healthcare Enterprise (IHE®) Connectathon will offer a new professional development luncheon.

Attendees will have the opportunity to tour the Connectathon after hearing an address from an IHE trailblazer (to be announced). Aiming to improve the way computer systems in healthcare share information, participants in the IHE initiative promote the use of established standards and develop new systems to achieve optimal patient care.

The Connectathon, introduced in 1998 as way for healthcare information technology companies to test

their systems with corresponding systems from industry peers, has grown by leaps and bounds. The 2006 event saw more than 350 attendees from 59 companies testing 140 systems—a 20 percent increase over the 2005 participation.

“IHE is an important building block to accelerate the connectivity of both imaging and non-imaging aspects of the digital healthcare revolution,” said Burton P. Drayer, M.D., RSNA Board Liaison for Annual Meeting and Technology.

Register now for the luncheon at www.ihe.net/events/connectathon07.

RSNA Highlights: Clinical Issues for 2007

RSNA Highlights: Clinical Issues for 2007 will be held February 26–28, 2007, at the J.W. Marriott Desert Ridge Resort & Spa in Phoenix.

Designed for Busy Physicians

RSNA's new educational conference makes it easy for physicians, especially those in private practice, to take advantage of the Society's educational offerings. While increasing workloads and personnel shortages can make the pursuit of professional development challenging, practitioners must still stay

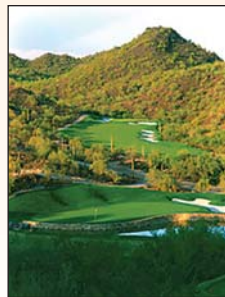
informed to keep their skills and knowledge up to date and provide the best patient care.

Today's Hot Topics

A concentrated educational package, the conference offers four refresher courses in each of these topic areas—cardiac imaging, PET/CT, breast imaging and sports injuries. Also offered will be two hot topics courses, “Comprehensive Imaging for Acute Stroke Treatment” and “Optimal

Techniques for Multidetector CT and MR of the Liver.” To promote interactivity, all courses will use an audience response system.

Access to select electronic education



RSNA Highlights: Clinical Issues for 2007 is a concentrated educational package that also serves as a warm getaway from the cold February weather.



The RSNA Highlights Course Registration Guide is available for download at RSNA.org/highlightsconference. Potential attendees can also request a copy be sent by regular mail.

exhibits from RSNA 2006 also will be available. Physicians can earn up to 19 *AMA PRA Category 1 CME Credits™* at RSNA Highlights and three self-assessment modules (SAMs) will be offered.

United.com offers RSNA High-

lights attendees a 10 percent discount on select United Airlines, United Express and TED qualifying flights. Use the electronic certificate number 553SB to make your discounted airline reservation online at *United.com*. If you prefer, call United (1-800-521-4041) or your personal travel agent and mention the United discount ID number 553SB to be eligible for the discounted fares.

For more information about RSNA Highlights—including detailed course descriptions—and to register, visit RSNA.org/highlightsconference.

Registration

Save \$100 when you register before December 15.

| | Early Bird Discount Deadline: Dec. 15, 2006 | Advance Registration Deadline: Feb. 5, 2007 | Onsite Registration |
|----------------------|--|--|---------------------|
| RSNA Member | \$450 | \$550 | \$650 |
| Non-Member | \$600 | \$700 | \$800 |
| RSNA Resident Member | \$150 | \$150 | \$150 |
| Non-Member Resident | \$450 | \$550 | \$650 |

RSNA.org

Online Meeting Program

PLAN TO get the most out of RSNA 2006 by using the electronic version of the *Meeting Program*, available at rsna2006.rsna.org. Click Meeting Program in the left-hand navigation bar ❶.

To see a list of all events in a particular category, click on a section heading such as Plenary Sessions ❷. To search events within that category, use the search box located in the title bar ❸.

To search the entire meeting

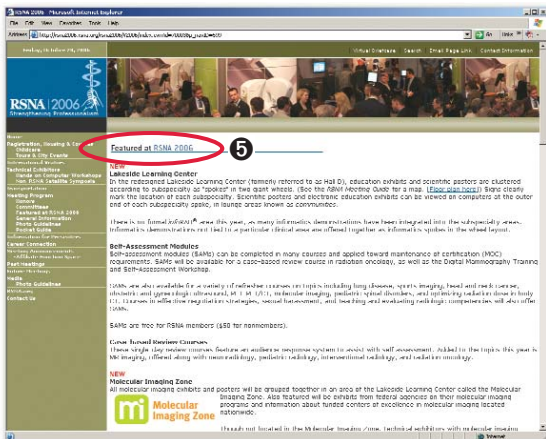
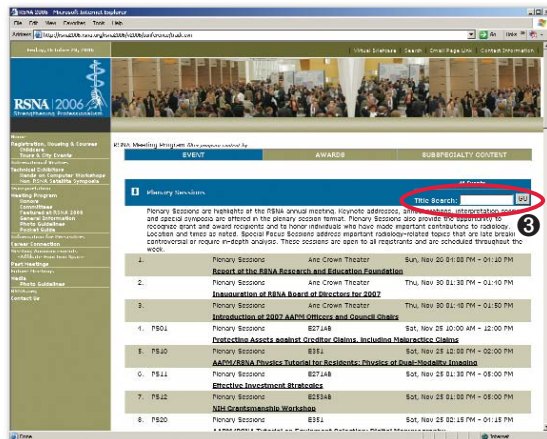
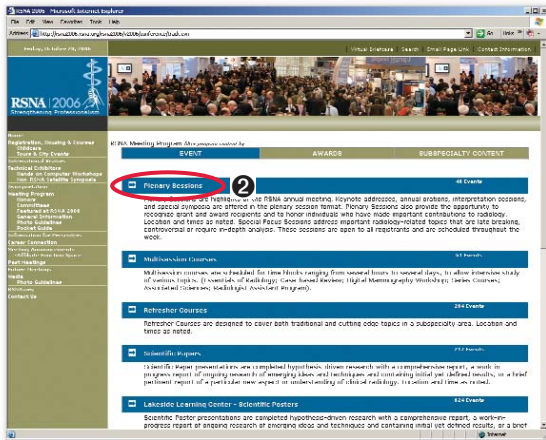
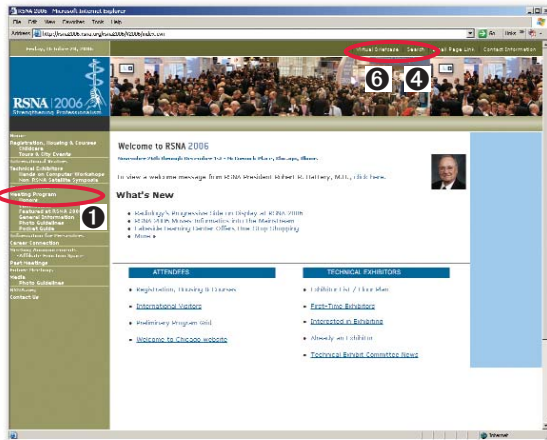
program, click on Search at the top right hand corner of the page, completing as much information as you know about the event you're seeking ❹.

Much more information about the annual meeting is available by clicking the links underneath Meeting Program in the left-hand navigation bar, such as Featured at RSNA 2006 ❺.

Virtual Briefcase

A personal itinerary planner, the

Virtual Briefcase allows RSNA 2006 attendees to maintain a list of technical exhibitors (My Exhibits), access a personalized floor plan (My Floor Plan) and create a schedule of sessions selected from the *Meeting Program*. Click Virtual Briefcase at the top right-hand corner of the page ❻. To use this feature, you must be registered for RSNA 2006 and enter your Confirmation/Badge Number at the login screen.



connections

Your online links to RSNA

- RSNA.org**
- Radiology Online**
RSNA.org/radiologyjnl
- Radiology Manuscript Central**
RSNA.org/radiologyjnl/submit
- RadioGraphics Online**
RSNA.org/radiographics
- RadioGraphics RGXPress**
RSNA.org/rgxpress
- RSNA News**
rsnanews.org
- Education Portal**
RSNA.org/education
- RSNA CME Credit Repository**
RSNA.org/cme
- CME Gateway**
CMEgateway.org
- RSNA Medical Imaging Resource Center**
RSNA.org/mirc
- RSNA Career Connection**
RSNA.org/career
- RadiologyInfo™**
RSNA-ACR patient information Web site
RadiologyInfo.org
- RSNA Press Releases**
RSNA.org/media
- My RSNA Profile & Benefits**
RSNA.org/memberservices
- RSNA Research & Education Foundation**
Make a Donation
RSNA.org/donate
- Community of Science**
RSNA.org/cos
- Membership Applications**
RSNA.org/mbrapp
- RSNA Membership Directory**
RSNA.org/directory
- RSNA 2006**
rsna2006.rsna.org
- RSNA Highlights: Clinical Issues for 2007**
RSNA.org/highlightsconference

Medical Meetings

December 2006 – April 2007

NOVEMBER 26–DECEMBER 1

RSNA 2006, 92nd Scientific Assembly and Annual Meeting, McCormick Place, Chicago • rsna2006.rsna.org

DECEMBER 20–21

Egyptian Society of Women's Imaging & Health Care (ESWIH), Second Annual Meeting, New Kasr el Einy Teaching Hospital and Four Seasons Hotel Garden City, Cairo, Egypt
• www.womensimaging.8m.com

JANUARY 4–7, 2007

Indian Radiological & Imaging Association (IRIA), 60th Annual Congress, Renaissance Hotel & Convention Center Powai Lake, Mumbai, India • www.iria2007.com

JANUARY 18–20, 2007

American Society for Therapeutic Radiology and Oncology (ASTRO)/American Head and Neck Society (AHNS)/American Society of Clinical Oncology (ASCO), Multidisciplinary Head and Neck Cancer Symposium, Westin Mission Hills, Palm Springs, Calif. • www.astro.org

JANUARY 19–21, 2007

Academy of Molecular Imaging (AMI)/American Society of Nuclear Cardiology (ASNC), Clinical Molecular Cardiology and Oncology: Advances in Therapy and Diagnostics, Loews Miami Beach Hotel, South Beach • www.ami-imaging.org

JANUARY 31–FEBRUARY 4, 2007

Sociedad Mexicana de Radiología e Imagen (SMRI), 41st Annual Radiology and Imaging Course, Hotel Sheraton Centro Histórico, Mexico City • www.smri.org.mx

FEBRUARY 11–15, 2007

International Society for Magnetic Resonance in Medicine (ISMRM), MR Physics & Techniques for Clinicians Workshop, Fairmont Chateau Lake Louise, Alberta, Canada
• www.ismrm.org/workshops/MRPhysics/index.htm

FEBRUARY 25–28, 2007

ISMRM, Non-Cartesian MR Imaging Workshop, Enchantment Resort, Sedona, Ariz.
• www.ismrm.org/workshops/Non_Cartesian_MRI/index.htm

FEBRUARY 25–MARCH 1, 2007

Healthcare Information and Management Systems Society (HIMSS), Annual Conference and Exhibition, Ernest N. Morial Convention Center, New Orleans • www.himss07.org

FEBRUARY 26–28, 2007

RSNA Highlights: Clinical Issues for 2007, J.W. Marriott Desert Ridge Resort & Spa, Phoenix
• RSNA.org/highlightsconference

MARCH 1–6, 2007

Society of Interventional Radiology (SIR), 32nd Annual Scientific Meeting, Seattle • www.sirmeeting.org

MARCH 9–13, 2007

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

MARCH 15–18, 2007

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

MARCH 25–28, 2007

ISMRM, Advances in High Field MR Workshop, Asilomar Conference Center, Pacific Grove, Calif.
• www.ismrm.org/workshops/HighField/venue.htm

APRIL 5–7, 2007

ISMRM/Turkish Society of Magnetic Resonance (TSMR), International Cardiovascular MR Imaging Symposium, Maritim Pine Beach Resort, Antalya, Turkey
• www.ismrm.org/workshops/turkey07.htm

APRIL 13–15, 2007

Japan Radiological Society (JRS), 66th Annual Meeting, Pacifico Yokohama, Japan • www.radiology.or.jp

APRIL 15–20, 2007

Society of Gastrointestinal Radiologists (SGR), Abdominal Radiology Course 2007, Hyatt Regency Coconut Point Resort & Spa, Naples, Fla. • www.sgr.org

APRIL 17–21, 2007

Society for Pediatric Radiology (SPR), 50th Annual Meeting and Postgraduate Course and conjoint meeting with the European Society of Pediatric Radiology (ESPR), Intercontinental Hotel, Miami • www.pedrad.org

APRIL 25–28, 2007

Association of University Radiologists (AUR), 55th Annual Meeting, Hyatt Regency Denver at Colorado Convention Center
• www.aur.org

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