

RSNA *News*

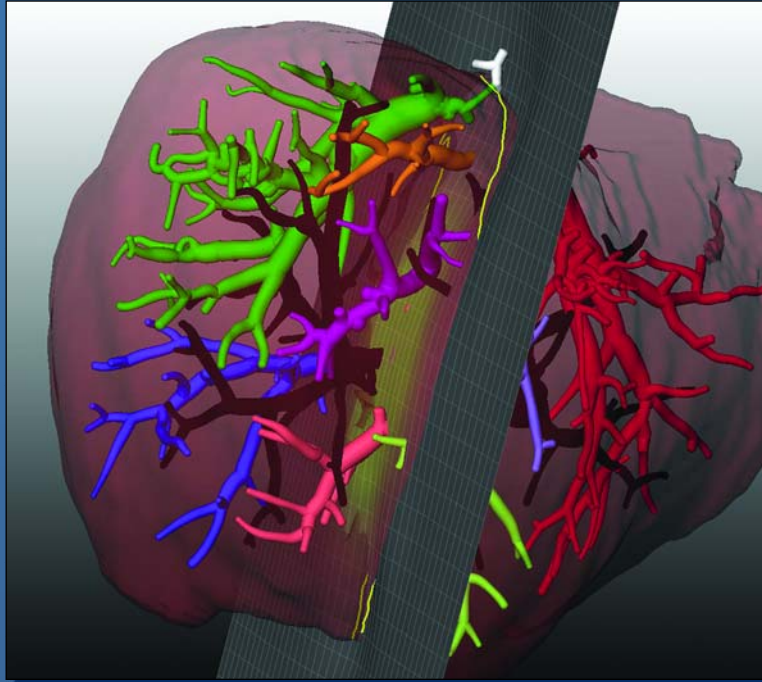


Image courtesy of Christoph Wald, M.D., Ph.D.

CT Technology Eases Process of Living Donor Transplantation

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- Radiologists Dispute Findings of Virtual Colonoscopy Study
- RSNA Expands Interactive Education Opportunities
- Medical Technology Companies Have New “Rules of the Road”
- Joint Ventures Can Be Tough But Rewarding Opportunities

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Brady Earns Honorary Degree

1985 RSNA President **Luther W. Brady Jr., M.D.**, received an honorary doctor of fine arts degree in May from George Washington University (GWU). Dr. Brady, one of the world's foremost radiation oncologists, earned his graduate and undergraduate degrees at GWU. He has been a professor of radiation oncology since 1963 at Philadelphia's College of Medicine at Drexel University.

Dr. Brady is a dedicated volunteer and contributor to research, education and fine arts. The art gallery and medical and public affairs building at GWU are named after him.

During his acceptance speech he explained his devotion to GWU. "It gave me direction at a very critical time in my youth. It

embedded in me the sense of responsible action. It gave me the sense of morals and ethics. It gave me a lifetime interest in ongoing inquiry, not being satisfied with rote events of one sort or another. It imbued in me the sense to innovate and to participate in research and to be a teacher," he said.



Luther W. Brady Jr., M.D. (right), receives his honorary doctor of fine arts degree from GWU President **Stephen Joel Trachtenberg**.



ARRS Gold Medal

The American Roentgen Ray Society (ARRS) presented three gold medals during its annual meeting in May. (from left) **Beverly P. Wood, M.D., M.Sc.**, **John E. Madewell, M.D.**, and **Theresa C. McLoud, M.D.**, RSNA Board Liaison for Education.

IN MEMORIAM:

Steven M. Pinsky, M.D.

Former Illinois Radiological Society President **Steven M. Pinsky, M.D.**, died of myelofibrosis in April at the age of 62. Dr. Pinsky was a professor emeritus and chairman of the Radiology Department at the University of Illinois Medical Center.



"He was one of the most respected members of the Board of Nuclear Medicine," his friend and colleague, William Schey, M.D., told *The Chicago Tribune*. "He had an international reputation."

Steven M. Pinsky, M.D.

Dr. Pinsky was also a committed RSNA volunteer. He had been an RSNA member since 1970. At the time of his death, he was a member of the nuclear medicine subcommittee of the RSNA Education Exhibits Committee.

IN MEMORIAM:

Donald L. Zinkon, D.O.

Retired radiologist **Donald L. Zinkon, D.O.**, died in late May at the age of 74.

Dr. Zinkon, an RSNA member since 1984, was head of the Department of

Radiology at Manchester Medical Center and Emerald-Hodgson Hospital in Florida until his retirement in 1994, according to *The Tullahoma News*.

Dr. Zinkon also served as chairman of the Radiology Department at Garden City Hospital in Michigan.



Send your submissions for *People in the News* to rsnanews@rsna.org, (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.

IN MEMORIAM:

Carl J. Vyborny, M.D., Ph.D.

Carl J. Vyborny, M.D., Ph.D., who helped set the guidelines for accrediting mammography centers, died in March of lung cancer at the age of 53.

Dr. Vyborny, an RSNA member since 1982, was a clinical professor of radiology at the University of Chicago and an attending radiologist at LaGrange Memorial Hospital. He was also a fellow of the Society of Breast Imaging, American College of Radiology and American Association of Physicists in Medicine. Earlier this year, he received a distinguished service award from the Chicago Radiological Society.

New VP for Kodak's Health Imaging Group

Todd VanderVen has been promoted to general manager of programs, marketing and business development, and vice-president for Eastman Kodak Company's Health Imaging Group. VanderVen also serves on the Health Imaging Executive Leadership Team.

"Todd is one of Health Imaging's top strategists and

has served in a range of roles including product development, marketing, sales, service and operational management," said Dan Kerpelman, president of Kodak's Health Imaging Group. "Under his leadership, we expect to enhance the efficiency and effectiveness of our global marketing capability while driving key business development initiatives."

ANNOUNCEMENTS

Asian Oceanic Congress of Radiology

RSNA President Brian C. Lentle, M.D., and RSNA Executive Director Dave Fellers, C.A.E., met with the executive committee of the Asian Oceanic Society of Radiology (AOSR) in April during the Asian Oceanic Congress of Radiology in Singapore.



(from left) Byung-Ihn Choi, M.D., Korea; Brian C. Lentle, M.D.; AOSR Immediate Past-President Lilian F.L.Y. Leong, M.D., Hong Kong; Dave Fellers, C.A.E.; Ken Thomson, M.D., Australia; AOSR President Lenny K.A. Tan, M.D., Singapore; and Cholid Badri, M.D., Indonesia.

RSNA to Host Media Briefing on Women's Breast Health

RSNA will host a media briefing in New York City on July 22 to inform the medical news media about the latest advances in breast imaging and disease therapies. The media briefing will be held at Mount Sinai Hospital. Presentations will include news about screening, diagnosis and

treatment, as well as a new study from *Radiology* on computer-aided detection. More information will be included in the September issue of *RSNA News*.

Last year, RSNA hosted a media briefing on image-guided therapies.

RSNA News Wins Design Award

Publications Management and the Missouri School of Journalism have honored *RSNA News* with a Silver Award for “Best Overall Design” in the 2004 *Magnum Opus* competition.

“As a winner, your entry stood out among hundreds as an example of the best work in custom publishing,” said *Publications Management* Editor Beth Tomkiw.

RSNA News was first published in

the fall of 1991 as a quarterly newsletter. *RSNA* gradually added issues until 1999 when *RSNA News* became a regular monthly newsletter. In December 2002, the *RSNA* Board of Directors approved calling the publication a “magazine” since the design and content more closely resembled a magazine than a newsletter.

The most recent design of *RSNA News* was unveiled in April 2003.



LETTER TO THE EDITOR

TO THE EDITOR:

I am writing to comment on the article in the May issue of *RSNA News* titled, “RSNA Supports Free Access to Scientific Articles.” This subject has become quite a contentious topic in scientific publishing.

I believe that what is referred to as the “open access” approach has much to offer. In my opinion, the public should have immediate and free Internet access to most scientific research. I believe this for a variety of reasons, one of which is that the public has often paid the lion’s share of the cost of research, through tax support of institutions such as the National Institutes of Health, the Veterans Administration, other government agencies and public universities, as well as indirectly, through charitable contributions to many of the societies that sponsor much scientific endeavor. Further, I am concerned that if members of the public find that the science they have supported is not directly available for access, some may become less inclined to support such government and charity sponsored efforts.

I also feel that open access would enhance the clinical care I am able to

provide as a physician. On several occasions, sometimes after hours, I have tried to look up literature related to a clinical imaging study before me, only to find that the article I needed was on a subscription-only Web site. It is true that in some cases I was able to access the text by virtue of a subscription held by my institution’s medical library, but this has not always been the case. Further, as the cost of many publications continues to increase, many medical libraries are reportedly being forced to discontinue many subscriptions.

It is true that publication of any sort entails expenses, including the “open access” model. But I believe these can in general be covered by publication fees imposed on authors; these fees can in turn be charged to grants or business accounts, much as travel costs to scientific meetings now are. It is true that universities may then find that their “business expense” budgets increase, but I would guess that this will be more



than offset by a reduction in library budgets.

I also wish to briefly voice my concern with the headline and leading paragraphs of the article in *RSNA News*. I think they may be somewhat misleading to a casual reader who is not familiar with this issue. The

title and lead sentence of the piece suggest that the *RSNA* is supporting “free” access to the content of its flagship publications, *Radiology* and *Radiographics*, when in fact this is not the case. Rather, *RSNA* appears to be supporting quite restricted access. The article then goes on to describe the numerous reasons for doing so. I think the article could have been more straightforward in its introduction.

I hope that *RSNA* will reconsider its position on the important issue of public access to publications describing scientific research.

ALEX M. AISEN, M.D.

INDIANAPOLIS

CT Technology Eases Process of Living Donor Transplantation

Enhanced CT technology is making living donor liver and kidney transplantation safer and easier. Consequently, procedures are less invasive, more organs are available for transplantation, graft survival is better, surgeons' decision making is clarified and radiologists are becoming more involved in patient care.

3D CT

At the Lahey Clinic in Burlington, Mass., staff radiologist Christoph Wald, M.D., Ph.D., works with a hardware-software combination that takes the inference out of split liver transplantation—an extremely difficult procedure that, until now, has had a donor mortality rate of about one percent. The Lahey Clinic is the only institution in the United States that has HepaVision-2 available onsite. HepaVision-2 is proprietary software developed by MeVis of Bremen, Germany. Dr. Wald says the system, currently awaiting FDA

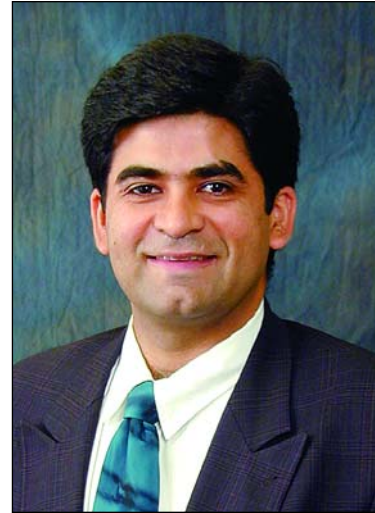
approval, runs on a Windows platform and raises 3D contrast-enhanced CT to an entirely new level.

“We’re pushing the boundary of image post-processing beyond what radiologists can perceive with their senses. We can extract information from our CT datasets that we’re not able to see as human beings, and that’s exciting,” says Dr. Wald, an assistant professor of radiology at Tufts University in Boston and head of the Lahey Clinic’s 3D Lab for Advanced Image Analysis and Surgical Planning.

The trick with living donor surgery is to split the liver without damaging



Christoph Wald, M.D., Ph.D.
Tufts University



Dushyant Sahani, M.D.
Harvard Medical School

either part’s ability to function. “When you split a liver,” says Dr. Wald, “you need to split it just next to the middle hepatic vein. The location of that vein determines where you’re going to split the organ. When you split along the predetermined plane, one of the things

In order to make clinically useful image analysis tools, radiologists need to work very closely with surgeons and other colleagues.

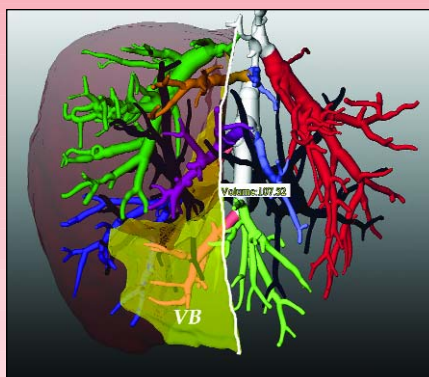
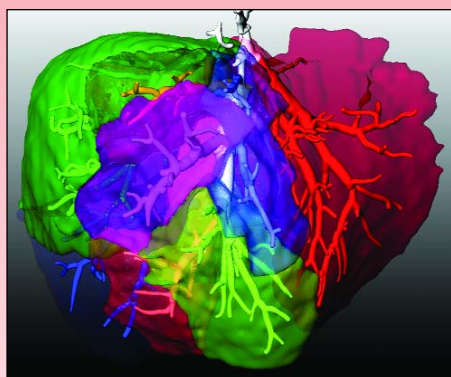
Christoph Wald, M.D., Ph.D.

that surgeons want to know before they operate is how much liver will be given to the recipient and how much will be left behind for the donor. I calculate that and then create the cut on a virtual dataset. I have a model of the liver and all the vessels. We’ve developed a very nifty ‘cutting tool’ that simulates what will be done in the operating room. You can shape the plane along which you divide the liver, curving around vessels just like the surgeon will do in the operating room.”

Dr. Wald says HepaVision-2 also enables physicians to quantify how

much of the graft is going to lose its outflow. “You end up with two numbers—one that tells you how big the graft is and another that tells you how much of the graft is at risk for congestion,” he explains. “Now you can make a more informed decision about whether or not to operate, though you have the option of proceeding in a borderline situation by building a new outflow using pieces of blood vessels from the organ bank.”

The Lahey liver team, founded in 1983 by Roger Jenkins, M.D., has performed more than 1,000 cadaveric liver transplants. Since 1988, the team has also performed 80 adult living donor split liver transplants without the loss of a single donor. Dr. Wald says this kind of success stands out in view of the small number of people who previously were willing to undergo a risky, invasive donor procedure. “It’s that dilemma that the software and 3D CT really help to solve. It’s so precise, we can eke out the details ahead of time,” he explains.

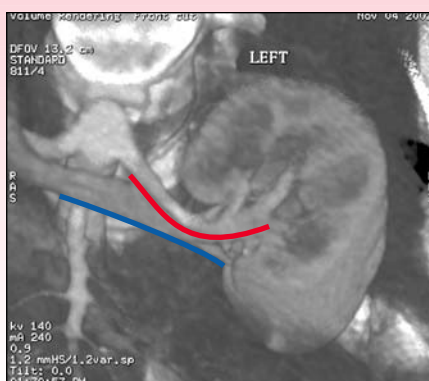
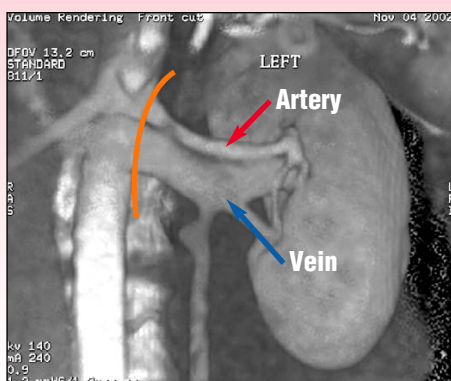


3D CT Image Analysis of a Liver

(left) With 3D CT image analysis of the liver, hepatic venous territories can be quantified.

(right) A risk analysis shows 107 cc of the graft (yellow territory) is at risk for congestion if the venous branch (VB) is disrupted.

Images courtesy of Christoph Wald, M.D., Ph.D.



3D CT Images of a Kidney

These 3D CT images show the renal artery to vein relation.

Images courtesy of Dushyant Sahani, M.D.

Javier Casillas, M.D., chief of body imaging at the University of Miami, says he hopes to get the MeVis software soon to revolutionize living donor organ transplantation in Miami. “This program provides very specific and important information for the liver transplant surgeon to decide and plan in advance the appropriate surgery,” Dr. Casillas explains. “If we add this software to our radiology armamentarium, more important information will be provided to the different surgical-medical teams to plan difficult procedures.”

For transplant centers that do not have the appropriate software, MeVis offers a service in which radiologists can send their data directly to them for processing. “After you perform a CT scan of the patient, you extract the images from your PACS and use a Web upload tool to send the images electronically through a secure connection onto a server in Bremen,” explains Dr. Wald. “MeVis will build the models there and return them through a secure download to your workstation where you can show it to the surgeon.”

MDCT for Kidney Transplantation

Living donor kidney transplantation also is getting a major boost from CT technology. A study at Massachusetts General Hospital, presented at the annual meeting of the American Roentgen Ray Society in May, finds that four-slice multi-detector CT (MDCT) facilitates laparoscopic resection, reduces surgical complications, speeds recovery and reduces pain.

The study of 94 kidney donors also demonstrates that with new CT technology, effective organ reconstruction can be accomplished without the use of dedicated expert readers, according to lead author Dushyant Sahani, M.D., a radiologist at Massachusetts General Hospital and Harvard Medical School.

“If you do it as a controlled study with one or two dedicated readers, those results may not reflect real-world practice,” says Dr. Sahani. “I wanted everyone in the department reading the exam like a routine diagnostic study using a standard 3D post-processing technique.”

Everyone had to use a standard reporting system and template. “In

spite of using so many readers with different expertise, ranging from two to 11 years of staff experience, we could detect arteries with 93 percent accuracy and veins with 96 percent accuracy,” Dr. Sahani says. “The resolution was so good that artery branches can be confidently detected down to one and two millimeters.”

Dr. Sahani says technology like this is sweeping more diagnostic radiologists into the realm of patient management and Dr. Wald agrees.

“Before we define these new applications and in order to make clinically useful image analysis tools, radiologists need to work very closely with surgeons and other colleagues. That way we will learn about clinical decision-making points,” says Dr. Wald. “We need to learn what the surgeon needs to know from us in order to make an informed decision about whether or not someone can have a certain procedure. We also need to know how to modify the surgery to make it safe. Unless you spend a lot of time collaborating with your colleagues, you will never learn these things.” □

Radiologists Dispute Findings of Virtual Colonoscopy Study

Supporters of CT colonography (CTC) are not too pleased about a study in the April 14 issue of *The Journal of the American Medical Association (JAMA)* that compares CTC with standard colonoscopy. The authors found that CTC detected only 39 percent of colorectal lesions six millimeters (mm) or larger and only 55 percent of those with a threshold size of 10 mm.

The multi-center study by gastroenterologists and radiologists, led by Peter B. Cotton, M.D., was particularly surprising in light of a much more successful study published in the December 4 issue of the *New England Journal of Medicine (NEJM)* by Perry J. Pickhardt, M.D., and colleagues. The *NEJM* study, involving military personnel and dependents, found a sensitivity for CTC of 93.8 percent for adenomatous polyps at least 10 mm in diameter, 93.9 percent for those at least eight mm in diameter and 88.7 percent for polyps at least six millimeters in diameter.

In an accompanying editorial in the April 14 *JAMA*, David F. Ransohoff, M.D., from the Departments of Medicine and Epidemiology at the University of North Carolina, wrote, "The results of the previous study by Pickhardt et. al. showed what the advanced technology, including bowel preparation, software, method of interpretation and training *can* achieve in ideal circumstances, whereas the current study by Cotton et. al. demonstrates what the technology likely *would* achieve if implemented in community practice."

There is general agreement among radiologists that the Cotton study was



Peter B. Cotton, M.D.
Medical University of South Carolina



David J. Vining, M.D.
PointDx, Inc.



Perry J. Pickhardt, M.D.
University of Wisconsin Medical School

weighed down by several disadvantages and flaws, and that it presents a "worst case scenario" for what general screening can accomplish using the latest 3D technology and well-trained readers. It is also important to note that

The takeaway message is that the results of CTC are operator-dependent.

Having well-trained radiologists is essential.

David J. Vining, M.D.

the Cotton study, although published later, was conducted earlier than the Pickhardt study. While some of the *JAMA* authors now question whether the radiologists in their study were sufficiently experienced with CTC, they do point out that one of the centers involved in the study, Wake Forest University, had substantial prior involvement with CTC. Data from the Wake Forest group, led by CTC pioneer David J. Vining, M.D., contributed the most participants and had the best results, with a primary outcome sensitivity of 86 percent for the detection of polyps greater than 10 mm.

Comparing the study with the Pickhardt study, *JAMA* co-author William C. Small, M.D., Ph.D., says, "The

equipment used in our study was a little older; the software applications used to interpret the scans were older; the experience of the people reading the scans was, for the most part, less; and because the evaluators were blinded, there was not the opportunity for feedback or any kind of learning curve."

Dr. Small, an associate professor of radiology at Emory University School of Medicine and chief of radiology at Grady Health Systems, adds that what's needed now are more studies similar to Dr. Pickhardt's using the latest applications, including continuous fly-through visualization of the colon and software that was not available for the Cotton study, which used 2D images for polyp detection and 3D software supplemental to axial images. "Additional multi-institutional studies of screening populations with low incidences of polyps using these newer techniques will, I think, show that virtual colonoscopy is efficacious," says Dr. Small.

Dr. Pickhardt, an associate professor of radiology at the University of Wisconsin Medical School, argues that his study, which was a much larger

multi-center trial, better reflects the current capabilities of state-of-the-art virtual colonoscopy. “I could have told them three years ago that they were going to get disappointing results because they were using outdated and less sophisticated techniques. In fact, Dr. Cotton’s trial ended long before ours began and merely reflects old data that had been primarily presented,” says Dr. Pickhardt. “Although its publication in *JAMA* has perhaps delayed or slowed our progress toward increased screening in the short term, I predict that it will not have a lasting negative impact.”

JAMA study co-author Harold Butler, M.D., with Hillcrest Radiology Associates in Mayfield Heights, Ohio, believes that CTC’s success will depend on improved, consistent standards for quality control and recognition of the importance of reader training. “People don’t realize how much training is required,” he says. “They think the hardware and software will do it all. Also, the ideal preparation has not been developed. Those that we do have are hard on elderly and chronically ill patients. I don’t think we’re ready to do unrestricted screening with virtual colonoscopy.”

Dr. Vining, now with PointDx, Inc., agrees that training and experience are far more important than the attraction of new technology, including the use of fly-through software during the initial exam. “We use 2D for lesion identification and 3D for problem-solving and lesion verification,” Dr. Vining explains. “I think 2D with selective 3D is a good method. The takeaway message is that the results of CTC are operator-dependent. Having well-trained radiologists is essential.”

Dr. Vining also participated in a study at Wake Forest, published last fall in *Gastroenterology*, in which CTC had a sensitivity of 90 percent for the detection of polyps 10 mm or greater. “We had well-prepped patients, both in terms of getting rid of the stool and distending the bowel with gas,” he says.

“In that study, we used a sodium phosphate laxative followed by an iodine oral contrast agent—the advantage of this approach is that inside the bowel the residual water is clear so a colonoscopist going in later that day can see through the water or suck it out, whereas barium-tagging agents cloud the water and the patient has to go back for a second bowel prep.”

The success of virtual colonoscopy may depend on the implementation of an accreditation program for the procedure similar to that for mammography, as well as CME requirements to keep physicians current, according to Dr. Vining. “Reimbursement is also a major issue,” he says. “Once virtual colonoscopy is reimbursed, the floodgates will open.”

As of July 1, two Category III CPT® codes went into effect for CTC. One code is for CTC studies performed for screening purposes. The other is for CTC studies performed for diagnostic purposes.

Professional Competition

Another concern is how other professional groups, particularly gastroenterologists, will approach CTC.

“Fifteen years ago an intense competition occurred among gastroenterologists, radiologists and surgeons about who would perform and control the new technology of gallstone lithotripsy,” writes Dr. Ransohoff in the *JAMA* editorial. “The episode was short-lived and has largely been forgotten because the technology so quickly proved to have limited practical use, but the fact that it occurred exposed a kind of competition that may affect virtual colonoscopy. ... Professional collaboration and experimentation regarding logistics would make sense both for patient service and for long-term professional relationships.”



Virtual colonoscopy image of an eight-millimeter polyp detected in a patient undergoing routine screening.

Image courtesy of Perry J. Pickhardt, M.D.

Dr. Cotton, who directs the Digestive Disease Center at the Medical University of South Carolina, says he remains excited about virtual colonoscopy and that radiologists should not be discouraged by his study’s results. “I’m very keen to enhance screening for colon cancer, which is one of the most common causes of cancer death in men,” he says. “We know it’s largely preventable if patients are properly screened and treated. We also know that colonoscopy, done by properly trained people, can do the job. But folks are scared of it, and as a result, they don’t get their screening when they should.”

Dr. Cotton adds: “I think our study is simply a wake-up call on a long journey of development and evaluation. People were prematurely getting too excited about virtual colonoscopy, including the lay public. Like most things, it is not as simple as it seems—that includes standard colonoscopy.” □

Note: To view the abstract of the *JAMA* study, “Computed Tomographic Colonography (Virtual Colonoscopy): A Multicenter Comparison With Standard Colonoscopy for Detection of Colorectal Neoplasia,” go to jama.ama-assn.org/cgi/content/abstract/291/14/1713. To view Dr. Ransohoff’s editorial in *JAMA*, go to jama.ama-assn.org/cgi/content/full/291/14/1772. To view the abstract of the *NEJM* study, “Computed Tomographic Virtual Colonoscopy to Screen for Colorectal Neoplasia in Asymptomatic Adults,” go to content.nejm.org/cgi/content/abstract/349/23/2191.

RSNA Expands Interactive Education Opportunities

Attendees at this year's RSNA Scientific Assembly and Annual Meeting will have a greater opportunity to get "involved" in their educational experience. More people will be able to take part in interactive courses and, for the first time, some traditional poster board presentations will be offered electronically.

"Anyone going to RSNA 2004 will have a taste of the future," says RSNA Board Liaison for Annual Meeting and Technology R. Gilbert Jost, M.D.

Digital presentation of scientific posters and education exhibits will include neuroradiology and chest radiology. "For those two specialties, instead of seeing them in the typical poster board format, they'll be available electronically on computers," says RSNA Assistant Executive Director for Research and Education Linda B. Bresolin, Ph.D., M.B.A., C.A.E.

About 100 computers will be set up for attendees to access the scientific posters and education exhibits at their own convenience. "Instead of walking the rows of the posters, they'll be sitting at a computer monitor and going through them electronically," says Dr. Bresolin.

She says neuroradiology and chest radiology will offer an excellent demonstration of the system.

"They were chosen because they're areas that have a large number of posters and also because the types of images are very diverse. It really allows the attendees to experience the format with a wide variety of images," she says. "It will give both the attendees and the



At RSNA 2003, R. Gilbert Jost, M.D., RSNA Board Liaison for Annual Meeting and Technology, views online exhibits in the education exhibits area. At RSNA 2004, digital presentation of scientific posters and education exhibits will be offered for neuroradiology and chest radiology.

authors a good opportunity to experiment with the electronic format in all of its various manifestations."

The traditional "walk around" by presenters will still be offered. But for presentations in electronic format, it will be done in a theater with a large projection screen.

"The authors will also be available, but instead of standing in front of their poster, they'll be standing at the front of the theater and the audience will be able to see the electronic poster projected on the screen while the author is speaking," says Dr. Bresolin.

Plans call for the material to be available online after the meeting concludes.

"The idea is that if authors agree to have their content online after the meeting, it will only be available for a specified period of time," says RSNA Assistant Executive Director for the Scientific Assembly and Informatics Steve Drew.

Dr. Jost says this digital presentation will open up new possibilities. "We have an interest at RSNA in educating developing nations, for example, and getting educational material to those who can't come to the meeting," he says.

Audience Response System

RSNA will also be making more use of the interactive audience response system (ARS) in the popular case-based review courses.

"These courses are designed to help each radiologist with individualized

There's some pretty clear evidence in the literature that people learn more when they're involved and getting individualized feedback.

Linda Bresolin, Ph.D., M.B.A., C.A.E.

Continued on next page

self-assessment,” says Dr. Jost, the Elizabeth Mallinckrodt Professor, chairman of the Radiology Department and director of the Mallinckrodt Institute of Radiology in St. Louis. “They’re all-day courses in neuroradiology, pediatric radiology or vascular-interventional radiology that are designed to present an overview of that particular subject matter.”

There will be 800 keypads available for use with ARS. Instructors will be able to ask the audience questions and then see their answers on a screen. The instructors can then alter the course material based on the competency level of the audience.

Dr. Bresolin is enthusiastic about the benefits of using ARS in continuing professional development. “There’s some pretty clear evidence in the literature that people learn more when they’re involved and getting individualized feedback,” she says. “Information is not just passively flowing past them.”

RSNA plans to continue training faculty to use ARS and build their courses around the optimal use of the system. “The presenters will actually be given a course on optimal use of ARS this September at a faculty development workshop,” says Drew.

“It takes a little different teaching style to make this kind of thing effective,” Dr. Jost says. “But when it’s done well, it can be very effective indeed.”



Case-based review courses use an interactive audience response system to help attendees with self-assessment, as well as to help instructors tailor course material based on audience competency.

Radiofrequency Identification

A new radiofrequency identification (RFID) system will also be piloted at RSNA 2004. Those attending case-based courses, who agree to participate, will have a special badge containing a microchip. Sensors in a classroom doorway will record an attendee’s entry and exit from that course.

The RFID data will be used in conjunction with ARS for course evaluations and for those seeking continuing medical education (CME) credits. But Drew suggests it could eventually have wider application in the future. “If this system were set up throughout the entire conference so that every meeting room could keep track of what course I went to, how long I was there and how

many credits I earned at any given time, I could then walk up to a terminal and check on my CME credit progress throughout the week,” he envisions. “Before I leave the meeting, I could push a button and print out my certificate of certified CME credits earned for the week.”

Drew says RSNA is committed to using new technology to offer an enjoyable and productive experience for those attending the scientific assembly.

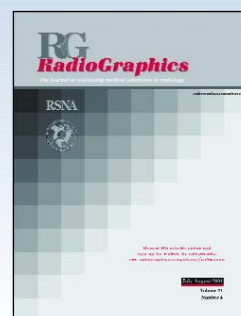
“We’re not investing in technology for technology’s sake,” he concludes. “Technology is a means to the end, and that end is helping attendees get the most out of their week at the RSNA meeting.” □

New Adult Learning Series in *RadioGraphics*

RSNA’s education journal launches a new section this month that will feature occasional articles on adult learning and learning techniques.

In the July-August 2004 issue of *RadioGraphics*, the section—called “Education Techniques for Lifelong Learning”—will include two articles. They are “Making a PowerPoint Presentation” and “Giving a PowerPoint Presentation: The Art of Communicating Effectively.” The author is Jannette Collins, M.D., M.Ed.

Dr. Collins will also have an article in the September-October issue of *RadioGraphics* titled, “Principles of Adult Education.” The article will include information she will present at the 2004 RSNA faculty development workshop, to be held in September.



Medical Technology Companies Have New “Rules of the Road”

As the Federal government steps up investigation and prosecution of healthcare fraud and abuse, the medical technology industry is driving an aggressive, voluntary effort to educate radiologists and other healthcare professionals about the new “rules of the road.”

The Advanced Medical Technology Association (AdvaMed) held a briefing in early May to review the ethical and legal risks facing medical technology companies and healthcare professionals, to describe the industry’s new Code of Ethics, and to talk about how both groups can work collaboratively and ethically.

John Bentivoglio, J.D., a former associate attorney general in the Justice Department and special counsel for healthcare fraud, now a partner in the law firm Arnold and Porter LLP, says medical technology companies and healthcare professionals need to understand today’s prosecutorial environment, what actions could be perceived as fraud, and what kind of inducements could be considered kickbacks.

In late April, the Justice Department announced that the University of Washington in Seattle agreed to pay \$35 million to settle claims in a case involving Medicare and Medicaid fraud. In addition, two physicians, a neurosurgeon and a nephrologist, pleaded guilty and were fined.

Bentivoglio says the agreement should serve as a wakeup call to physicians that the Justice Department can



Blair Childs (left) and John Bentivoglio, J.D., participated in an Advanced Medical Technology Association briefing to discuss the ethical and legal risks facing medical technology companies and healthcare professionals.

and will go after physicians, often under the Medicare/Medicaid Anti-Kickback Act.

What Industry is Doing

AdvaMed has released a Code of Ethics on Interactions with Healthcare

Professionals that promotes socially responsible behavior and “self-policing” for the industry and its partners in the healthcare community.

“Good ethics is good business,” says AdvaMed Executive Vice-President Blair Childs. “There are substantial risks for companies today that they must manage. The code will not only help them manage their business, but also, it’s the right thing to do.”

The AdvaMed code outlines appropriate:

- Hospitality, venues, travel costs for attendees at training meetings, as well

- as sales and promotional meetings
- Limits on gifts for physicians
- Educational grants and sponsorship of third-party conferences
- Consulting arrangements
- Charitable donations
- Reimbursement and technical information

A few years ago, expensive or personal gifts, unrestricted grants and other freebies, like expensive weekends at swank resorts, were commonplace. Now, these types of activities are off limits. AdvaMed’s code seeks to balance an interest in civility with the desire to avoid even the appearance that hospitality may be used as an inducement to purchase or recommend a product. “Modest,” “occasional” and “bona fide” are the new watchwords.

“The code specifically recognizes the unique collaborative relationship between industry and healthcare professionals who work together to develop new technologies, re-engineer existing designs and make life-saving technologies available to physicians,” says

There are substantial risks for companies today that they must manage. The code will not only help them manage their business, but also, it's the right thing to do.

Blair Childs

Childs. “It also helps to assure patients that their physician’s choice of technology is motivated by good medicine, not personal profit.”

Training and Educational Meetings

For company-sponsored educational and training meetings, the setting must be conducive to the effective transmission of knowledge, whether in the physician’s office or at a central location because the technology is not portable. Such programs often last more than one day, so the AdvaMed code allows firms to provide meals and receptions, provided they are modest and “subordinate in time and focus” to the educational or training purpose of the meeting. Companies may pay reasonable travel and lodging costs for attending healthcare professionals, but not for meals, hospitality, travel or other expenses of guests or anyone without a bona fide professional interest in the meeting.

Similar rules apply to a sales meeting in which product features, contract negotiations and sales terms are discussed.

Educational Conferences

The code allows for several ways in which a company may ethically support educational conferences. A company can provide an educational grant when a gathering is primarily dedicated to promoting objective scientific and educational activities and discourse. Firms may give grants directly to the conference sponsor to reduce conference costs. They may give grants directly to a training institution or conference sponsor so that medical students, residents, fellows or healthcare professionals-in-training may attend. Firms may also offer grants to sponsors to defray the costs of reasonable honoraria, travel and lodging for bona fide conference faculty members, but they cannot dictate who the faculty will be.

Consulting Arrangements

The new code preserves the relation-

ship of physicians as consultants when, for instance, they are acting as inventors or advisors engaged in product design or in research when compiling FDA-required safety data or Medicare efficacy data.

“There are a lot of questions being asked here because the consultancy portion of the code has more flexibility than the educational and marketing sections,” explains Childs. A key tenet here is that physicians can only be paid “reasonable compensation” for “bona fide” consulting services. The code lays out specific signposts for establishing that the services provided are, in fact, bona fide.

Gifts to Physicians

In the section on gifts, the code says “modest, occasional gifts” are okay if they have a value of less than \$100 and they benefit patients or serve genuine educational functions. Textbooks and anatomical models are exempted from this \$100 limit. Cash, golf balls, t-shirts and wine, for example, are definitely off the table. The legitimate practice of providing samples and opportunities for product evaluations is not precluded.

Other Provisions

The code allows firms to provide certain product-related reimbursement and technical information to healthcare professionals, recognizing that accurate information related to costs, savings and revenues associated with the use of a product may assist a healthcare professional in evaluating whether it is economically feasible to purchase a product. Companies may also make

donations to charitable organizations for a charitable purpose, such as independent medical research, indigent care, patient education and public education.

While each section of the code contains some room for interpretation, Bentivoglio says medical technology companies and physicians will be okay if they use good judgment and keep patients’ needs as their guiding light.

“We are working hard to get the word out on the code overall and educate people on the legal issues and threats physicians and medical technology innovators face,” says Childs.

Why is This Important?

AdvaMed plans to put a tool on its Web site that will allow physicians and companies to report concerns about actions that might be in violation of the code. This information will be sent to the company’s compliance officer so that they can help regular or control compliance.

AdvaMed’s code of ethics is voluntary, but, “What is important,” says Childs, “is that we all recognize that compliance with ethical codes and applicable laws is essential if this industry is to continue its partnership with the healthcare community and deliver the technology ‘miracles’ needed for tomorrow’s patient care.”

For more information on AdvaMed’s code of ethics, go to www.advamed.org/publicdocs/code_of_ethics.pdf. □

Other Codes of Ethics

■ The National Electrical Manufacturers Association (NEMA) is preparing a code of ethics for its members. NEMA is a trade association for businesses specializing in diagnostic imaging and therapy systems, electronics, building equipment, etc. The code of ethics will be presented to the NEMA board for approval in August. For more information, go to www.nema.org.

■ In June, the American Medical Association’s House of Delegates rejected a proposal that would have softened guidelines on gifts from industry to physicians.

An orthopedic surgeon from Washington, D.C., complained that a policy allowing money for tuition but not for hotels doesn’t make sense. All other commenting physicians urged rejection of the proposal.

Joint Ventures Can Be Tough But Rewarding Opportunities

One of the harsh realities in today's medical world is, it simply costs more to just do business. Rising malpractice insurance rates, declining reimbursements and increased competition force radiology practices to squeeze more out of existing resources. That leads partners to look at other potential revenue streams to equalize profitability with climbing costs.

One such option is for radiology groups to enter into joint ventures. Investing in radiology imaging centers is a way to provide high-quality professional services to a community, cement what should be an already-positive relationship with a local hospital, and participate in the center's profits.

But the path to profitability is not always straightforward. Attorney William Sarraille, J.D., of Sidley, Austin, Brown and Wood, LLP in Washington, D.C., warns, "It has to be a win-win for both sides or it's a disaster."

He and attorney Thomas Greeson, J.D., of Reed Smith LLP in Falls Church, Va., help clients navigate the sometimes-treacherous waters of joint venturing. "Hospitals are the logical partners for this," says Greeson. "It gives radiology groups the ability to be more than just service providers. They have an ownership component. The synergy between the group and the hospital works because the group can contribute to the success by managing the venture as well."

Sarraille adds such workable joint ventures can have positive implications



William Sarraille, J.D.



Thomas Greeson, J.D.

[Joint ventures] can make opportunities at the hospital more attractive to existing radiologists and the radiologists they hope to attract.

William Sarraille, J.D.

for both sides far into the future. "It offers improved recruitment and the means of justifying personnel with subspecialty expertise that may not be viable in other parts of the market," he says. "They can make opportunities at the hospital more attractive to existing radiologists and the radiologists they hope to attract."

When considering such a partnership, it's important for groups to know their marketplace. Whether it's an urban locale, busy suburban area or rural setting, partners need to have a comprehensive understanding of the need for radiology services, current providers and exactly what gaps they intend to fill with a new center.

Many groups choose to hire consultants to help answer these and other questions related to financing, technology and contract issues.

"Radiology groups should not try to wing this," says Greeson. "My suggested paradigm is first hire the right consultants who will look at the market, help with the studies and develop a business model. When you get to letters of intent and memos of understanding, that's when the lawyers come into play."

Sarraille warns that profits aren't the only thing to consider. "Make sure you want to be married to your hospital partner," he says. "This joint venture activity means a much more connected relationship which can be positive or negative."

If there is a hesitancy to embark in joint ventures among partners in a group, one reason may be the myriad of laws governing such relationships. The primary statute that speaks to such partnerships is the Stark law. In March 2004, the Centers for Medicare and Medicaid Services (CMS) issued the long-awaited Phase II, final Stark regulations. Most agree that Phase II makes

an effort to address some of the complexities presented by the initial law and offers more flexibility in certain situations. However, Stark legislation still provides that it is unlawful for physicians to refer patients for designated health services paid for by Medicare or Medicaid if the physician has a financial relationship with the entity receiving the referral.

Stark legislation still provides that it is unlawful for physicians to refer patients for designated health services paid for by Medicare or Medicaid if the physician has a financial relationship with the entity receiving the referral.

There are several exceptions, but the law applies to services including MR imaging, CT, ultrasound and other imaging technologies. "Stark issues generally don't come into play when radiologists play their usual role as consulting physicians," says Greeson. "However, interventional radiologists performing procedures as treating physicians may find Stark applies to their referring relationships."

The changes in the Stark law have been well publicized and healthcare attorneys have been analyzing their nuances for months. Some of the highlights include:

• Changes made to the "same building" test within the law's "in-office ancillary services exception"

The exception is designed to protect services provided by a practice within the office that are genuinely ancillary to the health services provided. "CMS has provided more clarity, but has made more restrictive the requirements to qualify for this exception to the rule," says Greeson.

• Purchased diagnostic tests

Phase II amends the definition of "entity" by taking out "referral to an entity" treatment of so-called "purchased diagnostic tests". Thus, Stark II permits a physician group to purchase the technical component of a diagnostic test from a third party and bill Medicare for the test without trigger-

ing Stark, so long as it conforms with Medicare's purchased test payment rules. According to the rule, the group must perform the professional component of the test and may not mark up the charge for the purchased (i.e., technical component) test. A group practice may also contract with another group

practice or physician to perform the professional component of the diagnostic test.

• Professional courtesy services

A new regulatory exception is created for professional courtesy provided to physicians and their immediate families or office staff. The rule delineates criteria for courtesy arrangements that are exempt from Stark, and thus appear to ease restrictions on courtesy arrangements. But CMS has cautioned that the anti-kickback and other fraud laws still apply to such arrangements. Greeson comments that radiologists should consider the facts of any individual courtesy arrangement, along with the intent of the parties, before agreeing to provide professional courtesy.

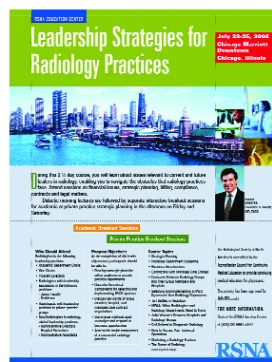
The sheer number of laws, both federal and state, that have implications for joint ventures between radiology groups and hospitals highlights the importance of structuring arrangements carefully to avoid risk on either side.

Sarraille advises interested parties to talk to a lot of colleagues who have gone through the process. As he explains, "There are any number of lessons to be learned about putting together one of these deals and living thereafter." The "living thereafter," it is hoped, will generate revenue for both sides, increase access to the latest technology, plus offer the community a high level of professional services.

RSNA Education Course

July 23-25, RSNA is sponsoring an education course, *Leadership Strategies for Radiology Practices*, in Chicago. Sarraille will lecture on "HIPAA: What Radiologists and Radiology Departments Need to Know" and "Joint Ventures Between Hospitals and Radiology Groups." Greeson will present "Relationships Between Radiology Groups and Their Hospitals" and "Compliance Issues in Radiology."

For more information on this and other RSNA education courses, go to www.rsna.org/education/shortcourses/index.html. □



Before Entering into a Joint Venture:

- Analyze the marketplace. How will establishing a new facility answer the needs of the group, hospital and community? Take a careful look at the revenue potential and obstacles.
- Have your own house in order. You need a good contract with the hospital, one that doesn't preclude other ventures. And make sure your intra-group contracts put you in a competitive place in the local market.
- Don't "wing" it. Talk to colleagues and others who have put together successful joint ventures. Seek the help of consultants and attorneys who can help you decide if a joint venture is feasible, and guide you through the legalities.

From William Sarraille, J.D.

Journal Highlights

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

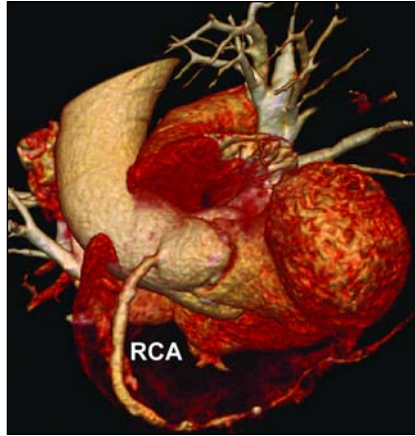
CT Evaluation of the Coronary Arteries

Two review articles in the July issue of *Radiology* (radiology.rsna.org) focus on CT evaluation of the coronary arteries.

While the majority of coronary CT has, to date, been performed by using electron-beam CT, recent technical advances in mechanical multi-detector row CT systems have enabled the noninvasive assessment of coronary arteries with this latter technology.

In one of the review articles, "CT of Coronary Artery Disease," U. Joseph Schoepf, M.D., from Brigham and Women's Hospital and Harvard Medical School, and colleagues discuss how noninvasive imaging of the coronary arteries with fast CT techniques

Radiology



Contrast-enhanced 16-Detector Row CT Coronary Angiography
Colored volume rendering of right coronary artery (RCA) displayed in slightly cranial right anterior oblique perspective. This method of 3D postprocessing provides an intuitive display and conveys information on the often complicated anatomy of tortuous coronary arteries.

(*Radiology* 2004;232:18-37)

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can be beneficially and cost-effectively inserted into the diagnostic algorithm for known or suspected coronary artery disease.

In the second article, "Noninvasive Imaging of Coronary Arteries: Current and Future Role of Multi-Detector Row CT," Paul Schoenhagen, M.D., and colleagues from the Cleveland Clinic

Foundation discuss the clinical impact of noninvasive tomographic imaging technologies, such as multi-detector row CT, on imaging of coronary arteriosclerosis.

Both articles include the new "Essentials" take-home points. See page 18 for details.

Blood Flow Patterns in Focal Liver Lesions at Microbubble-enhanced US

Noninvasive diagnosis of liver lesions is usually performed with contrast material-enhanced CT and MR imaging, and is based on enhancement features of the arterial and portal venous phases. Ultrasonography (US) is often limited in characterizing liver lesions because color and spectral Doppler US provide limited vascular information in large patients and in small or deep lesions.

Initial studies, however, suggest that microbubble-enhanced liver US provides enhancement information comparable to that provided by contrast-enhanced CT and MR imaging and allows real-time morphologic evaluation of lesion vascularity.

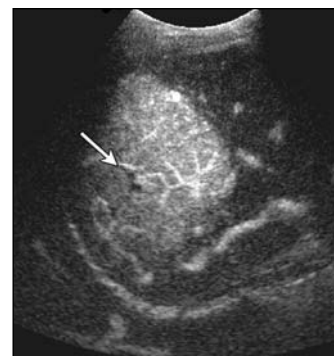
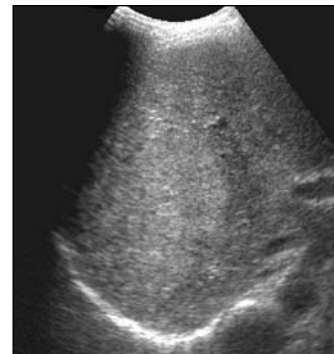
In an article appearing in the July-August issue of *RadioGraphics*, Margot Brannigan, M.D., from the Department of

RadioGraphics

Medical Imaging at the University of Toronto, and colleagues:

- Review contrast agents and the technology required for their use in liver imaging.
- Describe standard imaging techniques and the enhancement patterns seen at microbubble-enhanced US of commonly encountered focal liver lesions.
- Discuss and illustrate some similarities between contrast material-enhanced US and contrast-enhanced CT and MR imaging.

To access this article online, go to radiographics.rsna.org.



Focal Nodular Hyperplasia

(a) Baseline conventional US image of the right lobe shows a subtle echogenic mass. (b) Arterial phase US image shows a hypervascular mass with some stellate vascularity, a small nonenhancing scar (arrow), and a typical tortuous feeding artery.

(*RadioGraphics* 2004; 921-935)

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Product News

FDA APPROVAL



Vascular Plug Receives FDA Clearance

AGA Medical Corporation has received FDA approval for the AMPLATZER® Vascular Plug, an implantable device that provides a minimally invasive alternative for the treatment of peripheral vascular diseases.

The AMPLATZER Vascular Plug was cleared for use in cases where the site to be treated is within the peripheral vasculature system.

The self-expandable, cylindrical device is made of Nitinol-wire mesh and is available in diameters ranging from 4 mm to 16 mm. Nitinol's super-elastic properties allow the device to compress inside a catheter, then spring back to full size once placed within the blood vessel. The device's Nitinol-wire frame provides strong radial traction that holds it securely within a vessel wall. The device is also non-magnetic, and therefore compatible with MR imaging technology.

NEW PRODUCT

VIParchive Software Available

The Eastman Kodak Company has announced the availability of its DIRECTVIEW Versatile Intelligent Patient Archive (VIParchive) software in the United States, Canada and Europe.

The VIParchive software platform provides centralized, enterprise-wide management of images and information from clinical systems, as well as back office systems. VIParchive software provides dynamic and transparent lifecycle management of information and is media, technology and storage vendor independent to protect against obsolescence.

NEW PRODUCT

New All-Digital Ultrasound System

Siemens Medical Solutions has introduced the new, all-digital SONOLINE G20™ ultrasound imaging system that features unparalleled grayscale imaging in a powerful, yet portable package.

The G20's lightweight design and small footprint make it easy for users to move the system in and out of small exam spaces, or from suite to suite without difficulty.

"The G20 ultrasound system further complements Siemens comprehensive ultrasound product portfolio, and is another example of our commitment to introducing high value systems that are responsive to the global marketplace," said Bill Carrano, vice-president of worldwide marketing for Siemens Medical Solutions Ultrasound Division.

"We strive to meet the demands of small clinics and private offices, in addition to the needs of research universities and large hospital ultrasound departments, by developing solutions that deliver superb image quality, clinical workflow efficiencies and proven ergonomics—all with a technology migration path that ensures our customers have made an investment in their future."



FDA APPROVAL

CAD Technology Approved for Digital Mammography System

R2 Technology has received FDA approval to use its ImageChecker® computer-aided detection (CAD) technology with Hologic's Selenia™ full-field digital mammography (FFDM) system.

"Receiving FDA approval finalizes the commitment of both companies to merge our premier technologies together in a package that we believe will provide one of the most powerful tools in assisting physicians in the early detection of breast cancer," said

Jack Cumming, Hologic's chairman and chief executive officer.

Hologic says more than one-half of the Selenia FFDM systems sold will likely include CAD technology.

The ImageChecker system was originally FDA approved in 1998 for use with film-based screening mammography to assist radiologists in minimizing false-negative readings. In 2001, the FDA expanded its approval to include use with diagnostic mammograms.

Working For You

Request a Printed Copy of the RSNA Meeting Program

RSNA members can now request a printed copy of the 2004 *RSNA Scientific Assembly and Annual Meeting Program*. The *RSNA Meeting Program* is a benefit of membership.

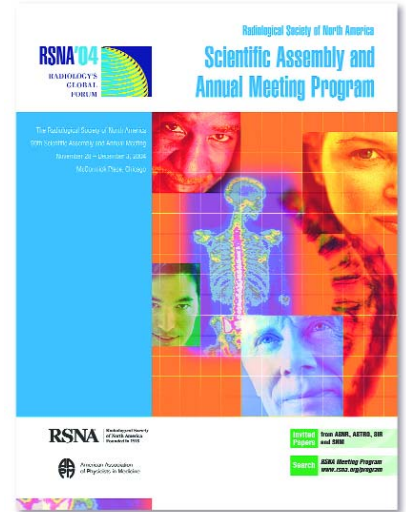
To request your printed copy, go to www.rsna.org. Click on the annual meeting logo and then on Meeting Program. Members may also call the RSNA Membership and Subscription Department at (877) RSNA-MEM [776-2636] (U.S. and Canada) or (630) 571-7873.

Members can choose to have the printed copy mailed to them, or they can

pick up the program at the annual meeting. Those who request a printed copy to be mailed to them must bring the program to the meeting.

The deadline to request a printed copy of the *RSNA Meeting Program* is September 15.

Members who do not exercise this option will not receive a printed copy. The searchable content of the *RSNA Meeting Program* will be available online before, during and after the meeting at www.rsna.org.



Continued on page 18

I was formally employed by RSNA in 1995, but prior to that I worked for RSNA as a direct consultant, and before that, I

Working for you PROFILE

worked on the RSNA account as a consultant for the com-

pany that handles RSNA's annual meeting registration. My first RSNA annual meeting was in 1981 and I have not missed a single one since then.

SERVICE TO MEMBERS: Throughout my career with RSNA, the majority of my time has been spent working on projects related to making things better for RSNA members.

My very first project was to write the computer

program for RSNA's first Exhibitor Product Locator system used at the 1981 annual meeting. The next year I wrote the first Electronic Meeting Registration system to eliminate the typed badges and have instant reporting of registrants. A few years later came one of the biggest hits for the membership, the first electronic messaging system. This was in place well before e-mail dominated our lives, moving over 100,000 messages during its peak use. We have since modernized the system so it is now a more full-featured e-mail system for use at the annual meeting.

With the rapid growth of the Internet, we have

built Web-based features for our members, including online membership renewals, the RSNA CME Credit Repository, and a few new things that will be coming out at RSNA 2004.

WORK PHILOSOPHY:

My work philosophy can be said in one word, KISMIF, which stands for Keep It Simple, Make It Fun. We try to reduce unnecessary complications in projects, while still maintaining RSNA's high standards for results. We always try to have a fun, relaxed attitude about our tasks. If the workplace is not enjoyable then the quality of your work suffers.



NAME:
David Pedo
POSITION:
Director of Information Systems
WITH RSNA SINCE:
February 1995

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

Working For You

Continued from page 16

NEW!

At-a-Glance Information from RSNA Journals

Beginning this month, RSNA's peer-reviewed journals, *Radiology* and *RadioGraphics*, will offer articles with highlighted "pearls of information" to help busy readers recognize important information at a glance.

In *Radiology*, the new feature will be called "Essentials" and will appear with review articles in various sections. In *RadioGraphics*, the new feature will be called "Take-Home Points" and will be included with *infoRAD* (Informatics in Radiology) articles.

The new feature will have a distinct look and will appear on the second page of the highlighted article in both journals.

Link to RadiologyInfo™

At least 200 Web sites link to the RSNA-ACR patient education Web site *RadiologyInfo*™ (www.RadiologyInfo.org). The award-winning Web site allows patients to enhance their knowledge about radiologic procedures and therapies in very understandable terms. It tells them why the procedure is being done, what to expect, what the equipment looks like, what preparation is appropriate and what risks may

be involved.

Physicians and medical institutions can easily link their Web site to *RadiologyInfo*. Details are available at

RADIOLOGYINFO™
The radiology information resource for patients

www.radiologyinfo.org/legal/disclaimer.htm. Specially designed *RadiologyInfo* logos are also available on that Web page for use on prescription pads and other printed material.

Digital Presentation Skills for the Radiologist

August 7, 2004 – RSNA Headquarters, Oak Brook, Ill.

Online registration is available at www.rsna.org/education/shortcourses for this comprehensive, one-day workshop that will help radiologists master the tools and techniques that will give their clinical presentations added impact. The course includes hands-on experience and personalized instruction.

6.75 AMA PRA category 1 credits available

Registration Fees:

RSNA Members: \$199
Non-Members: \$249

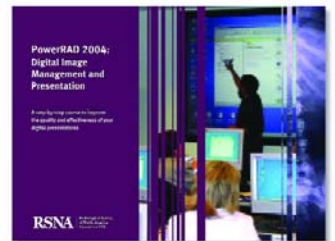
For more information, contact the RSNA Education Center at (800) 381-6660 x7715 or at ed-ctr@rsna.org.



PowerRAD 2004

August 28, 2004 – RSNA Headquarters, Oak Brook, Ill.

Register online at www.rsna.org/education/shortcourses for this one-day RSNA workshop. Paul J. Chang, M.D., from the University of Pittsburgh, will take you step by step through the process of converting analog radiologic images into an electronic format and editing images and text using various lecture software, such as PowerPoint. This course includes printed lecture notes and CD-ROM software. Since RSNA will provide all attendees with the use of a desktop computer for this course, space is limited.



Registration Fees:

RSNA Members: \$199
Non-Members: \$249

7 AMA PRA category 1 credits available

For more information, contact the RSNA Education Center at (800) 381-6660 x7715 or at ed-ctr@rsna.org.

RSNA Research Scholar Enjoys Career Twists and Turns

Sometimes people complain when their careers get sidetracked. Not Fred Lee Jr., M.D. “I was sidetracked in a good way during my RSNA Research Scholarship,” he says.

Dr. Lee, an associate professor of radiology and chief of the Division of Abdominal Radiology at the University of Wisconsin Medical School in Madison, received an RSNA Research & Education Foundation Research Scholarship in 1996 for his work on “Clinical Comparison of MR Cholangiopancreatography (MRCP) and Endoscopic Retrograde Cholangiopancreatography (ERCP).”

“During my scholarship time, I saw the first radiofrequency technology used to ablate liver tumors,” he says. “I realized how much I needed to learn about tumor ablation, a technique that began in Europe and Asia. The scholarship allowed me to pursue this branch path, which was an unexpected turn in my career.”

Dr. Lee credits the RSNA Research Scholarship for helping him to stay in academic medicine at the University of Wisconsin. “To get tenure here, I needed independence, publications and grant support for my salary. The scholarship gave me the time and freedom from the clinical structure to conduct my research,” he explains.

As an RSNA Research Scholar, Dr. Lee was given half of his time at work for research. “I learned how to set up a laboratory and I had time to write,” he says. “With the huge clinical demands placed on radiologists, the RSNA

Research Scholarship program gave me kind of a ‘free pass’ just at the point of my career when I was not yet competitive for federal grants. It was extremely helpful.”

In addition to the RSNA Research Scholarship, Dr. Lee was the 1993 RSNA Research Seed Grant recipient for “Computed Tomographic Biliary Imaging with Iodipamide Ethyl Ester Particles in a Rabbit Model: A Comparison with Nuclear Medicine Imaging.”

Giving Back to RSNA

Dr. Lee is an RSNA volunteer, serving on the gastrointestinal radiology subcommittee of the RSNA Scientific Program Committee. “The RSNA scientific assembly is the premier radiology meeting in the world. At the University of Wisconsin Medical School, we gear our entire laboratory cycle around the April 15 deadline for scientific abstract submission for the RSNA annual meeting,” he says.

Dr. Lee says the highlight of the scientific assembly occurs on Tuesday night of the meeting, when the International Working Group on Tumor Ablation meets: “This national and international group, including many of the pioneers of these techniques, spend five hours together exchanging ideas.

The group formed about five years ago with just a few members and has grown every year. At RSNA 2003, there were 100 participants.”

While kidney and liver tumor ablation are a part of mainstream medicine



Fred Lee Jr., M.D.
University of Wisconsin Medical School, Madison

today, that was not always the case. “People doing these procedures early on were considered a bit on the fringe of medicine. It was a very radical procedure and almost dangerous if not applied in the right way,” says Dr. Lee. “It’s important to continue to meet people conducting ablation from around the world, particularly those from high volume centers. Later in the year, you can call or e-mail these peers when you have an unusual problem or a complication. I credit RSNA with bringing this International Consortium together.”

Dr. Lee predicts the working group someday will become its own medical society.

Another RSNA draw for Dr. Lee is the journal *Radiology*. He calls it a rigorous journal: “It is getting increasingly difficult to get published in *Radiology*. That has forced me to raise my personal standards of writing.”

Continued on next page

The [RSNA Research] scholarship gave me the time and freedom from the clinical structure to conduct my research.

Fred Lee Jr., M.D.

Continued from previous page

Radiology Roots

Dr. Lee calls his father, Fred Lee Sr., M.D., one of his role models and a mentor. His father is a pioneer in ultrasound for prostate cancer and maintains a private practice in Rochester, Mich., after many years as an academic radiologist. "In fact, I am very fortunate to have been able to work with my father in a professional capacity. How many sons get to do something like that? Over the years, my father and I conducted and published several studies together," says Dr. Lee.

He says he had once considered a career in surgery, but another couple of career twists led him to academic radiology, thanks to another mentor, John R. Thornbury, M.D.

Dr. Thornbury, an emeritus professor of radiology at the University of Wisconsin, had known the Lee family since Dr. Lee's high school days in Ann Arbor, Mich. When Dr. Lee was an intern in surgery at the University of Massachusetts Medical Center in Worcester, he called Dr. Thornbury: "At the time, I was acting chairman of radiology at the University of Rochester Medical School in Rochester, N.Y.," explains Dr. Thornbury. "Dr. Lee wasn't sure if surgery was what he wanted to do, so I invited him to join my program, thanks to an available slot."

Later, Dr. Thornbury brought Dr. Lee into the Radiology Department at



Fred Lee Jr., M.D. (center), with his research staff at the University of Wisconsin Medical School in Madison: (from left) Cassie Weichert, Tina Tatum, Paul Laeseke and Lisa Sampson.

the University of Wisconsin, which eventually led to Dr. Lee's academic career.

"He is a super teacher with the residents," Dr. Thornbury says. "In fact, Dr. Lee won the 'Teacher of the Year' award given by residents during his first year of teaching in Wisconsin."

Dr. Thornbury says Dr. Lee is also a stellar physician. "He has patience and can talk to any patient. He has innovative imaging techniques. He's smart,

ambitious, eager and he has a good sense of humor," Dr. Thornbury adds.

Taking a Chance

When Dr. Lee first arrived in Wisconsin, no one there knew about tumor ablation. As he began to learn more about it during the time of his RSNA Research Scholarship, he sought help from his department chairman.

Patrick Turski, M.D., professor and

chairman of the Radiology Department at the University of Wisconsin Medical School, listened to Dr. Lee's request. "Dr. Turski went out on a limb for me. No one else in this area was doing this type of research. There was no evidence at the time that this program would be successful. Dr. Turski must have had some insight. Today the program at Wisconsin is a research and financial success," Dr. Lee says.

Dr. Turski calls Dr. Lee an innovator. "He took the technology from a laboratory environment through all the animal testing and clinical trials. Radiofrequency ablation is now a well-accepted technique for certain metastatic diseases. Few physicians have accomplished something like this in their entire careers, let alone in six to eight years," Dr. Turski says. □



Membership Reaches 100 in RSNA President's Circle

The RSNA Research & Education Foundation is celebrating two milestones: It is the Foundation's 20th anniversary year; and in mid-May, Margaret and Joseph F. Norfray, M.D., of Glenview, Ill., presented the Foundation with a donation to become the 100th member of the RSNA President's Circle program.

"I am honored to give to the RSNA R&E Foundation so that radiologists continue to be valuable imaging experts," says Dr. Norfray. "I owe a debt to RSNA for providing me with the latest science in *Radiology*, and the best and brightest speakers and authors at the RSNA Scientific Assembly. Even though new modalities were developed after my residency, I was able to become a valuable imaging expert for these exciting modalities by reading *Radiology* and attending the RSNA meetings."

The RSNA President's Circle program was launched at RSNA 2001 in Chicago as a way to provide incentive and recognition to those members who contribute on an annual basis. To qualify for the President's Circle, members must contribute at least \$1,500 in one year.

RSNA Past-President Jerry P. Petasnick, M.D., came up with the idea. "The President's Circle was something I developed and introduced in my President's Address at RSNA 2001," says Dr. Petasnick. "The Foundation gets many good grant applications each year, but the problem is that the Foundation doesn't have enough money to fund all of the worthy proposals. So, I tried to come up with a program that

encourages more members to donate money and, at the same time, get more recognition for their contribution."

Benefits of the RSNA President's Circle include:

- RSNA President's Circle gold pin
- Special printed recognition
- Preferred and early registration for the RSNA Scientific Assembly and Annual Meeting
- Hotel preference during the annual meeting
- Invitation to the Visionaries Reception during the annual meeting
- Special recognition ribbon for the annual meeting badge
- Special mailings about activities and members of the RSNA President's Circle

The first RSNA President's Circle Research Award was announced this year. Research resident

Sean Collin, M.D.,

Ph.D., from George Washington University in Washington, D.C., will study "BRCA1 Regulation of Cellular Radiation Sensitivity via Modulation of the Ubiquitin/Proteasome System."

A top-ranked research resident or research fellow applicant will be chosen annually for the President's Circle Research Award.

"As the Foundation celebrates its

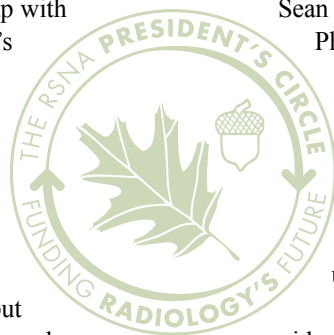


At RSNA 2001, then-president Jerry P. Petasnick, M.D., launched the RSNA President's Circle program during his president's address. Dr. Petasnick became the first member of the RSNA President's Circle by presenting a personal check for \$1,500 to the RSNA Research & Education Foundation.

20th year, we are stepping up efforts to make RSNA members aware of the impact that imaging research has, and will continue to have, on their careers," explains Dr. Petasnick, who is the 2004 chairman of the Foundation Board of Trustees. "The Foundation currently has a \$30 million corpus from which the earnings are used to fund grants. The Foundation needs \$100 million or more in its corpus to make an impact."

Dr. Norfray is hoping his contribution to the RSNA President's Circle

Continued on next page





Research & Education Foundation Donors

THE BOARD OF TRUSTEES of the RSNA Research & Education Foundation and its recipients of research and educational grant support gratefully acknowledge the contributions made to the Foundation **April 28–May 27, 2004.**

For more information on Foundation activities, a quarterly newsletter, *Foundation X-aminer*, is available online at www.rsna.org/research/foundation/newsletters/x-aminer/x-aminer.pdf.

VANGUARD GROUP

Siemens Medical Solutions



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EXHIBITOR'S CIRCLE

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National Display Systems



GOLD \$5,000

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BRONZE \$1,000

RSNA PRESIDENT'S CIRCLE MEMBERS

\$1,500 per year

Catherine Brant
Raquel Del Carpio-O'Donovan, M.D.
Betty & E. Robert Heitzman, M.D.
Betty & O. Wayne Houser, M.D.
Carol & David C. Levin, M.D.

Judy & William A. Murphy Jr., M.D.
Margaret & Joseph F. Norfray, M.D.

PLATINUM (\$1,000 - \$4,999)

Theresa C. McLoud, M.D.

GOLD (\$500 - \$999)

William M. Angus, M.D., PhD

SILVER (\$200 - \$499)

Maud & Erik Boijesen, M.D.
Donald R. Buxton Jr., M.D.
Mary Louise & Basil Considine Jr., M.D.
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Connie L. Emerson, M.D.
Kenneth T. Grimes, M.D.
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Lina Mehta, M.D.
Njideka H. Nyako, M.B.B.S.
Margaret Lee & Jeffrey L. Schmitter, M.D.
Dwight A. Townsend, M.D.
Carol M. & Bill H. Warren, M.D.

BRONZE (\$1 - \$199)

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Brett L. Austin, M.D.
Robert D. Bloch, M.D., PhD
Melinda H. Blue, M.D.
Elle & Siavash Es'Haghi, M.B.Ch.B.
Joanne Fraser
Christiane M. Hakim, M.D.
Shotaro Kanao, M.D.
Shazia Yusuf, M.B.B.S. & Amjad Mahmood
Gaspar A. Motta-Ramirez, M.D.
Nicholas Papanicolaou, M.D.
Mitchell Parver, M.D.
Patricia P. Shapiro, M.D. & Steven L. Shapiro
Julian T. Simmons, M.D.
Jayson R. St. Jacques, M.D.
Jalal Tabatabaie, M.D.

COMMEMORATIVE GIFTS

Robert Appelman, M.D.
In memory of David Appelman, M.D.
Sallie and Michael Bleshman, M.D.
In honor of Stanley Baum, M.D.
Raquel Del Carpio-O'Donovan, M.D.
In honor of Brian C. Lentle, M.D.
Clement J. Grassi, M.D.
In memory of Robert G.L. Lee, M.D.
Hilary Gentile & Kolleen Klein
In memory of Molly Rhian Gorman
Chandra & Shanti Lunia, M.D.
In memory of our parents
Judy & William A. Murphy Jr., M.D.
In honor of Gerald D. Dodd Jr., M.D. & Otha W. Linton
Ronald B. Port, M.D.
In memory of Bettie Byron Port
Carol A. Diamond, M.D. & Howard A. Rowley, M.D.
In honor of Alexander Margulis, M.D.

Online donations can be made at www.rsna.org/research/foundation/donation.

Membership Reaches 100 in RSNA President's Circle

Continued from previous page

will encourage other radiology professionals to do the same. "Today's imaging research will become tomorrow's imaging routines," he says. "Roentgen's research gave us the x-ray through financial support from the University of Wurzburg. Hounsfield's research gave us CT with monetary support from EMI. Today's radiology

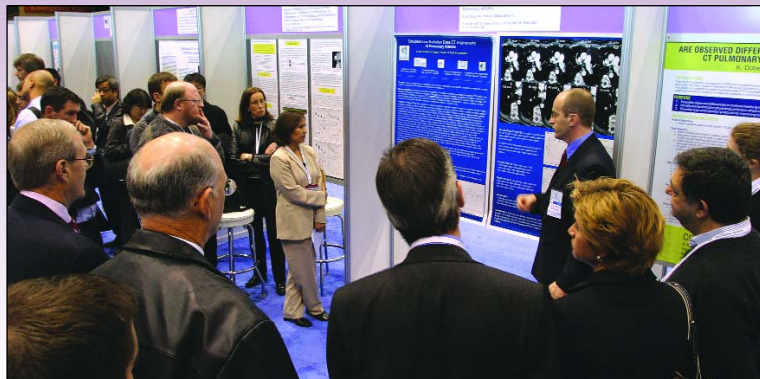
researchers are using molecular imaging for rheumatoid arthritis, cardiomyocyte apoptosis and angiogenesis in breast cancer—all through yesterday's grants from the RSNA R&E Foundation."

For more information on becoming a member of the RSNA President's Circle, contact

Deborah Kroll at dkroll@rsna.org or at (630) 368-3742. You can make an online donation to the Foundation at www.rsna.org/research/foundation/donation/.

To see a complete listing of RSNA President's Circle members, go to www.rsna.org/research/foundation/donation/pcircle.html.

News about RSNA 2004



International Delegates

International attendees are strongly encouraged to **apply for a visa now**.

The U.S. Visit Program was launched in January 2004 to protect the safety of U.S. citizens and international visitors.

Beginning **September 30, 2004**, foreign visitors (including the 27 countries in the Visa Waiver Program) will be photographed and fingerprinted upon arrival at a

U.S. airport or seaport. The processes take only a few seconds in most cases. For more information, go to www.dhs.gov/us-visit.

Starting **October 26, 2004**, visa waiver travelers from all 27 Visa Waiver Program countries must present a machine-readable passport or a U.S. visa upon arrival to a U.S. airport or seaport. For more information, go to www.travel.state.gov/vwp.

Registration Fees

BY 11/12	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 Refresher Course Instructor, Paper Presenter, Poster Presenter, Education or Electronic (<i>infoRAD</i>) Exhibitor
\$110	\$210	Non-Member Resident/Trainee
\$110	\$210	Radiology Support Personnel
\$520	\$620	Non-Member Radiologist, Physicist or Physician
\$520	\$620	Hospital Executive, Commercial Research and Development Personnel, Healthcare Consultant, Industry Personnel
\$300	\$300	One-day badge registration to view only the Technical Exhibits area

For more information about registration at RSNA 2004, visit www.rsna.org, e-mail reginfo@rsna.org, or call (800) 381-6660 x7862.

Important Dates for RSNA 2004

Nov. 8	Housing deadline
Nov. 12	Advance registration deadline
Nov. 28–Dec. 3	RSNA 90th Scientific Assembly and Annual Meeting

Course Enrollment Open

Enroll now at www.rsna.org for any of the following courses and activities being offered at RSNA 2004, including:

- Refresher courses
- *infoRAD* workshops
- Hands-on workshops
- NIH grantsmanship workshop
- Jury trial
- Financial seminars
- Tours and events

Course enrollment information was mailed in mid-June and is available on the Internet or by fax on demand.

Download the Course Enrollment or Tours & Events brochure

- 1 Go to www.rsna.org
- 2 Click on the annual meeting logo
- 3 Click on Registration and Housing or Tours & City Events for a PDF version of the brochure

Receive a Course Enrollment brochure by fax

- 1 Call the fax-on-demand server at (847) 940-2146
- 2 Select a document
 - Enter 1300 for the entire brochure
 - Enter 1350 for course listings
 - Enter 1375 for the registration forms only
- 3 Enter your fax number (including 1 or 011, plus city and country codes)
- 4 Enter your telephone number and extension

Register for RSNA 2004

Once you download the advance registration information or have it faxed to you, there are four easy ways to complete the registration process:

- 1 Internet**
 Go to www.rsna.org
 Use your member ID# from the *RSNA News* label or registration brochure sent to you, or search by your last name and zip code. If you have questions, send an e-mail to rsna@itsmeetings.com.
- 2 Fax** (24 hours)
 (800) 521-6017
 (847) 940-2386
- 3 Telephone** (Monday–Friday,
 8:00 a.m.–5:00 p.m. CT)
 (800) 650-7018
 (847) 940-2155
- 4 Mail**
 ITS/RSNA 2004
 108 Wilmot Rd., Suite 400
 Deerfield, IL 60015-0825
 USA

Earn up to 80.5 category 1 CME credits at RSNA 2004

RSNA 2004 Exhibitor News

Technical Exhibitor Service Kit

The RSNA 2004 Technical Exhibitor Service Kit is now available online at www.rsna.org. Near the annual meeting logo, click on the Technical Exhibitor link.

Exhibitors may access the site to view important information and download service request forms. **New in 2004, company profiles can be edited online.** More information will be available in a future issue of *RSNA News*. The online-only kit makes it easier to navigate through the material and find important information such as registration hours, exhibit installation and dismantling hours, rules and regulations, RSNA forms and official contractor information.

The electronic kit also allows online ordering capabilities with some contractors.

Important Exhibitor Dates for RSNA 2004

July 30	Deadline for reduction/cancellation (for full refund) Deadline for Exhibitor Information Form
August 13	Deadline for final payment Deadline for reduction/cancellation (for partial refund)
October 13	Deadline for submission to <i>Daily Bulletin</i> New Products section
November 12	Exhibitor advance badge request deadline
Nov. 28 – Dec. 3	RSNA 90th Scientific Assembly and Annual Meeting

■ For up-to-date information about technical exhibits at RSNA 2004, go to www.rsna.org and click on the annual meeting logo.



90th Scientific Assembly and Annual Meeting

November 28 – December 3, 2004
McCormick Place, Chicago

RSNA Exhibitor Planning Meeting



RSNA Technical Exhibits Committee Chairman Michael C. Brunner, M.D., welcomed more than 50 exhibiting companies at the annual RSNA Exhibitor Planning Meeting held in June in Rosemont, Ill. The companies received their booth assignments, learned about the new features for RSNA 2004 and helped plan for the upcoming meeting. Booth assignments, exhibitor floor plans and instructions on accessing the online-only Technical Exhibitor Service Kit (www.rsna.org) have been mailed to the official exhibitor company contact.

■ For more information, contact RSNA Technical Exhibits at (800) 381-6660 x7851 or e-mail: exhibits@rsna.org.

IHE/infoRAD Showcase

As the Integrating the Healthcare Enterprise (IHE) initiative expands outside of radiology and moves into real-world practice, RSNA 2004 will showcase special exhibits and demonstrations from industry representatives who have achieved success in integrating information technology and digital imaging systems.

These exhibits will describe improvement in:

- Patient safety
- Quality of care
- Productivity and workflow efficiency
- Effective communication
- Operational efficiencies of adopting filmless/paperless technology

Portable Data for Imaging

As part of IHE, a demonstration will be held at RSNA 2004 highlighting the newly published Portable Data for Imaging integration profile. The demonstration will help attendees discover the benefits of this profile in enabling the reliable interchange of images, evidence objects and diagnostic reports for import, display or printing. The profile builds on DICOM standards for CD-R, achieving a higher level of interoperability. Media creators and media readers will be

part of the demonstration.

Attendees will receive a sample IHE-conformant CD with sample medical images and patient information. Vendors participating as media creators will also be able to generate sample CDs onsite in their exhibit booths. Vendors participating as media readers will be able to show their capabilities to import, display and manage images and information from IHE-conformant media.

■ For more information on IHE activities, contact RSNA at ihe@rsna.org.

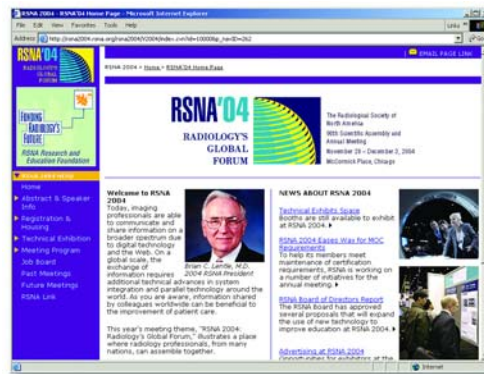
www.rsna.org

RSNA 2004 Web Site

Course enrollment for RSNA 2004 is now available through the home page of *RSNA Link* (www.rsna.org). Click on the annual meeting logo and then on Registration & Housing.

Once at the RSNA 2004 Web site, members can request a printed copy of the *RSNA Meeting Program* in the Meeting Program area. (See page 16 for more details.) Presenters of educa-

tion and *infoRAD* exhibits, refresher courses, plenary sessions or scientific papers or posters will find documents online to help them prepare for the meeting. Also available are space guidelines and a request form for organizations that plan to hold social events such as alumni reunions during RSNA 2004.



OTHER WEB NEWS

Deciphering the Genetic Code

The National Institutes of Health (NIH) has launched a Web-based exhibit on the first NIH intramural Nobel Laureate, Marshall Nirenberg, Ph.D.

Dr. Nirenberg is best known for “breaking the genetic code” in 1961, an achievement that earned him the Nobel Prize. The exhibit explores genetics research in the 1950s and 1960s and explains the importance of Dr. Nirenberg’s experiments and discoveries.

“Nirenberg’s work,” notes NIH Historian Victoria A. Harden, “explained the function of the genetic code, as opposed to Watson and Crick’s determination of the structure of DNA. Knowing the structure suggested possible mechanisms of action, but knowing which mecha-



nism was correct and how it worked to instruct the synthesis of proteins, made the Genome Project and biotechnology and everything else possible.”

The Web exhibit, at www.history.nih.gov/exhibits/nirenberg, complements a physical display located at the NIH Clinical Center where visitors can view the actual instruments used in the experiments.

Links to Radiology Organizations

RSNA Link includes a comprehensive list of radiology organizations with a hypertext link to their Web site. The list is available at www.rsna.org/orgs/index.html.

By clicking on the link for the Society of Academic Chairmen of Radiology Departments (SCARD) at www.scardonline.org, you can view new information about cardiac imaging training. The page, known as the “Manhattan Project,” is a portal for radiologists seeking training in cardiac imaging. The site lists, describes and will eventually evaluate training sites that can provide this type of direct, hands-on experience.

connections Your online links to RSNA

RSNA Link
www.rsna.org
Radiology Online
radiology.rsna.org
Radiology Manuscript Central
radiology.manuscriptcentral.com
RadioGraphics Online
radiographics.rsna.org

Education Portal
www.rsna.org/education/etoc.html
CME Credit Repository
www.rsna.org/cme
RSNA Medical Imaging Resource Center
mirc.rsna.org
RSNA Index to Imaging Literature
rsnaindex.rsna.org

RSNA Career Connections
careers.rsna.org
RadiologyInfo™
RSNA-ACR public information Web site
www.radiologyinfo.org
RSNA Press Releases
www.rsna.org/media

RSNA Online Products and Services
www.rsna.org/member-services
RSNA Research & Education Foundation Make a Donation
www.rsna.org/research/foundation/donation

Community of Science
www.rsna.org/research/cos.html
History of the RSNA Series
www.rsna.org/about/history/index.html
Membership Applications
www2.rsna.org/timssnet/mbrapp/main.cfm

Medical Meetings

August – October 2004

AUGUST 7

Digital Presentation Skills for the Radiologist, RSNA Education Center, RSNA Headquarters, Oak Brook, Ill.
• www.rsna.org/education/shortcourses

AUGUST 8-12

Society of Computed Body Tomography & Magnetic Resonance (SCBT/MR), Summer Practicum, Chateau Whistler Resort, Whistler, British Columbia, Canada • www.scbtmr.org

AUGUST 10-14

American Society of Interventional & Therapeutic Neuroradiology (ASITN), First Annual Course & Workshops, Boca Raton Resort & Club, Boca Raton, Fla. • www.asitn.org

AUGUST 28

PowerRAD 2004, RSNA Education Center, RSNA Headquarters, Oak Brook, Ill.
• www.rsna.org/education/shortcourses

SEPTEMBER 3-5

American Institute of Ultrasound in Medicine (AIUM), Sonography: A Broad Sweep, Palace Station Hotel, Las Vegas
• www.aium.org

SEPTEMBER 9-12

Society for Molecular Imaging (SMI), 3rd Annual Meeting, Adam's Mark Hotel, St. Louis • www.molecularimaging.org

SEPTEMBER 10-12

Society for the Advancement of Women's Imaging (SAWI), SAWI 2004 Symposium, Palace Hotel, San Francisco
• www.sawi.org

SEPTEMBER 12-15

Radiology Business Management Association (RBMA), 2004 Fall Educational Conference, Miami, Fla. • www.rbma.org

SEPTEMBER 22-24

Argentine Society of Radiology, 50th Argentine Congress of Radiology, Diagnostic Imaging and Radiation Therapy, 8th Argentine Congress of Ultrasonography, Sheraton Hotel & Convention Center, Buenos Aires, Argentina • www.sar.org.ar

SEPTEMBER 25-29

Cardiovascular and Interventional Radiological Society of Europe (CIRSE), Annual Meeting, Barcelona, Spain
• www.cirse.org

OCTOBER 1-5

North American Society for Cardiac Imaging (NASCI), Cardiovascular Imaging 2004, Ritz-Carlton, Amelia Island, Fla.
• www.nasci.org

OCTOBER 3-7

American Society for Therapeutic Radiology and Oncology (ASTRO), 46th Annual Meeting, Georgia World Congress Center, Atlanta • www.astro.org

OCTOBER 6-9

International Skeletal Society (ISS), 31st Annual Refresher Course, Westin Dragonara Resort, St. Julian's, Malta
• www.internationalskeletalsociety.com

OCTOBER 7-10

American College of Radiology Imaging Network (ACRIN), Semi-Annual Meeting, Ritz-Carlton, Pentagon City, Arlington, Va. • www.acrin.org

OCTOBER 18-22

American Osteopathic College of Radiology (AOCR), Advances in Body MR, The Wyndham New Orleans at Canal Place, New Orleans • www.aocr.org

OCTOBER 21-24

Royal Australian & New Zealand College of Radiologists (RANZCR), 55th Annual Scientific Meeting, Perth Convention & Exhibition Centre, Perth, Western Australia
• www.ranzcr.edu.au

OCTOBER 29-31

Society of Radiologists in Ultrasound (SRU), 14th Annual Meeting, Marriott Wardman Park Hotel, Washington, D.C.
• www.sru.org

NOVEMBER 28-DECEMBER 3

RSNA 2004, 90th Scientific Assembly and Annual Meeting, McCormick Place, Chicago • www.rsna.org

APRIL 19-22, 2005

10th International Conference on Occupational Respiratory Diseases (10th ICORD), Occupational Respiratory Hazards in the 21st Century: Best Practices for Prevention and Control, Beijing, China • www.ICORD2005.com

RSNANews

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