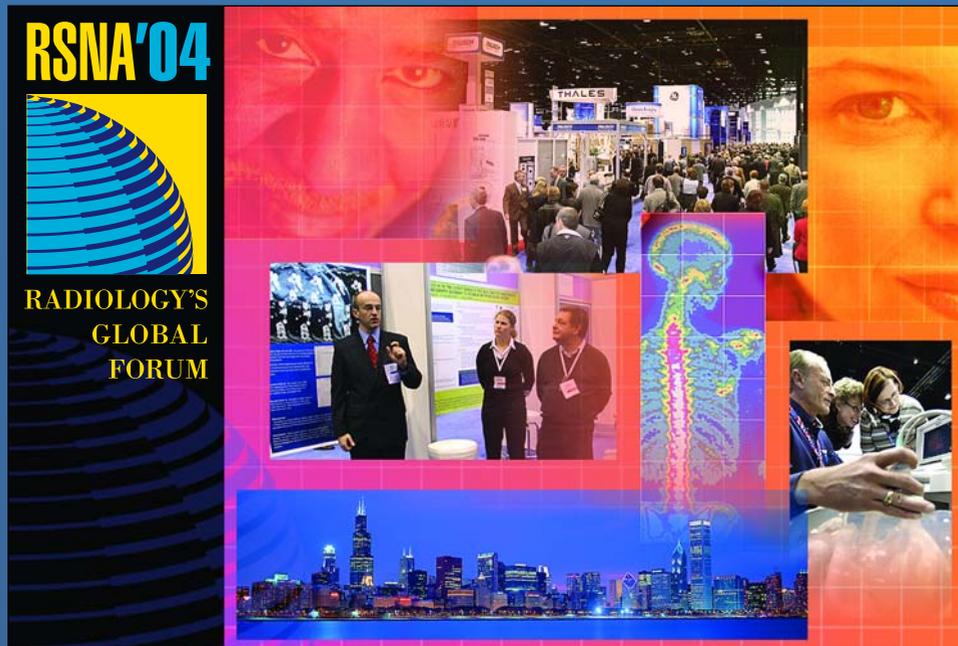


RSNA *News*



RSNA 2004 Meeting Preview and Restaurant Guide

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- Scientific Program Reflects RSNA 2004's Role as a Global Forum
- Diagnostic Radiology Earns Highest Four-Year Pay Increase
- Scientists Reach Important Milestone in Nanoscale MR Research
- HHS Launches "Decade of Health Information Technology"

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RSNA News

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Radiology Welcomes New Perspectives Editor



James H. Thrall, M.D.

James H. Thrall, M.D., has been appointed Perspectives Editor for *Radiology*. Dr. Thrall is the Juan M. Taveras Professor of Radiology at Harvard Medical School and radiologist-in-chief at Massachusetts General Hospital. Perspectives is a bimonthly commentary on the social, economic and political changes affecting medicine.

Dr. Thrall replaces **Richard M. Friedenberg, M.D.**, who is retiring from the position after serving for more than 11 years.

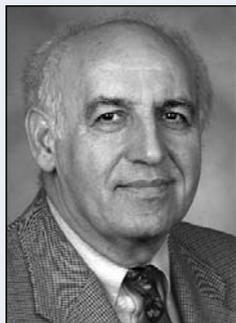


In his final article as Perspective's Editor, Dr. Friedenberg reviews some of his previous articles, indicating whether his predictions and speculations have proved correct.

RSNA members and subscribers can read Dr. Friedenberg's valedictory article in the August issue of *Radiology* at rsna.org/radiologyjnl. Click on Select an Issue from the Archive, click on August 2004 in the top center of the page, then click on Perspectives.



Eli J. Glatstein, M.D.



Luka Milas, M.D., Ph.D.



Paul Wallner, D.O.

ASTRO Names 2004 Gold Medalists

The American Society for Therapeutic Radiology and Oncology (ASTRO) will award its 2004 gold medal to three distinguished scientists during the ASTRO annual meeting this month in Atlanta. They are **Eli J. Glatstein, M.D.**, **Luka Milas, M.D., Ph.D.**, and **Paul Wallner, D.O.**

"I'm very proud of our three outstanding gold medalists," said ASTRO Chair Joel E. Tepper, M.D. "It is a testament to

the high caliber of physicians and scientists who are members of our society."

ASTRO has also elected three new officers. They are:

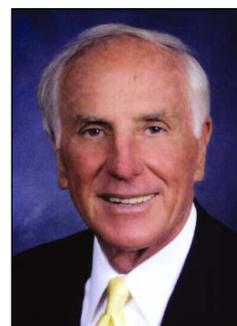
- **K. Kian Ang, M.D., Ph.D.** – President-elect
- **Albert L. Blumberg, M.D.** – Government Relations Council Vice-Chair
- **Anthony L. Zietman, M.D.** – Education Council Vice-Chair

Gooding Earns AOSR Gold Medal

Charles A. Gooding, M.D., a professor of radiology and pediatrics at the University of California, San Francisco, has been awarded the gold medal of the Asian & Oceanian Society of Radiology (AOSR) for his contributions to global medical education.

Dr. Gooding is a past-president of the Society for Pediatric Radiology and is the founder and past-president of the Radiology Outreach Foundation, which has contributed \$10 million in radiology education materials to developing countries.

Hitoshi Katayama, M.D., of Tokyo, also received an AOSR gold medal.



Charles A. Gooding, M.D.

Berman Joins CompuMed Board

Medical informatics company CompuMed, Inc., has appointed **Phillip M. Berman, M.D.**, to its board of directors.

Dr. Berman, from Coronado, Calif., founded three successful radiology practices, served as chairman of

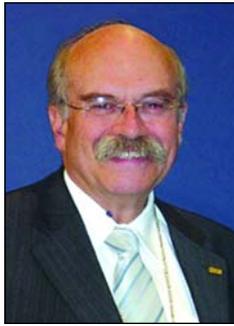
three radiology departments and founded two successful for-profit imaging centers.

"We are pleased to add Dr. Berman to CompuMed's board," said Robert Stuckelman, the company's founder and chairman. "His business

and medical expertise will complement the experience of our existing personnel, and open new opportunities for CompuMed in the rapidly expanding medical imaging industry."



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.



Miguel E. Stoopen, M.D.

CIR Announces New Board of Directors

The InterAmerican College of Radiology (CIR) has named its 2004-2006 Board of Directors. They are:

- **Miguel E. Stoopen, M.D.**
– President, México City
- **Pablo R. Ros, M.D., M.P.H.**
– President-elect, Boston
- **Francisco A. Quiroz, M.D.**
– Secretary-General, Milwaukee
- **Ricardo D. García Mónaco, M.D.**
– Treasurer, Buenos Aires



Mayr Joins Ohio State

Nina A. Mayr, M.D., is the new chair of the Department of Radiation Oncology at Ohio State University in Columbus. Dr. Mayr previously was a professor and chief of the Section of Radiation Therapy and vice-chairman of the Department of Radiological Sciences at the University of Oklahoma Health Sciences Center.

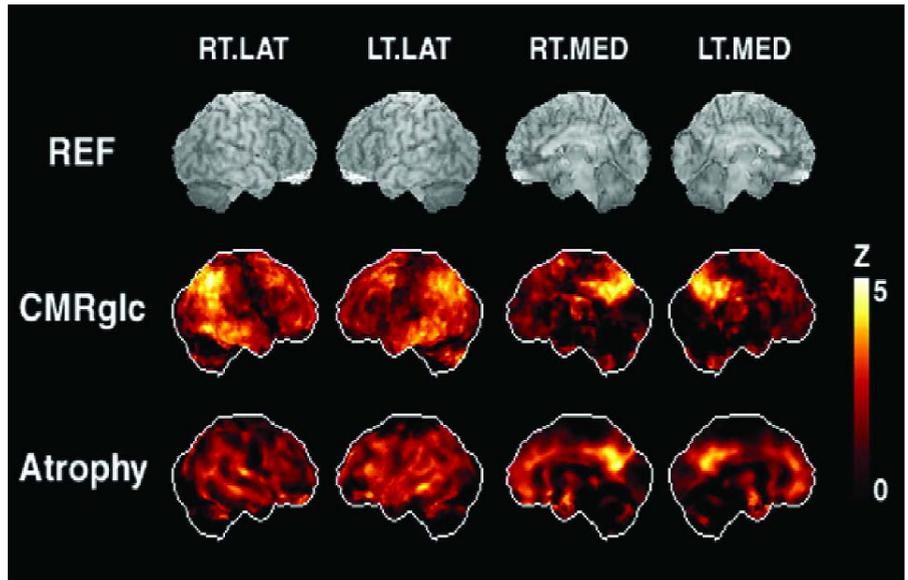
ANNOUNCEMENTS

Image Demonstrates Future of Medicine

The Society of Nuclear Medicine's (SNM) Image of the Year reflects the theme of the 2004 SNM annual meeting—creating lifetime images of health and disease.

The image is actually a series of images from a study performed by Hamamatsu Medical Imaging Center in Japan, the University of Washington in Seattle and the University of Michigan in Ann Arbor. The study is titled, "Brain FDG PET Imaging in a Population-Based Cohort of Asymptomatic Subjects: Initial Findings."

SNM Past-President Henry N. Wagner Jr., M.D., tied the image to his vision of healthcare for the future during the Highlights Lecture at the SNM annual meeting. "I envision an International Health Manifestation Database (IHMD) where everyone will have a periodically updated portable electronic record that contains lifetime manifestations of his or her state of health," he said. "Rather than trying to give a name to a patient's disease, putting him or her in a disease 'box,' the person's electronic health record will



reveal all the 'manifestations' of the patient's health and illness. The manifestations on a patient's 'health chip' can be automatically compared to the IHMD to characterize illness, predict what is likely to happen and suggest possible treatment."

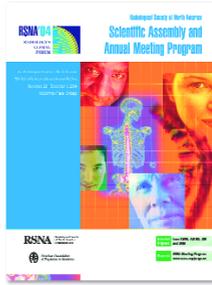
The images in the Image of the Year are composites of brain scans of 31 Alzheimer's disease patients and

551 normal patients. Because they are composites, the images reveal common functional characteristics of the brain-wasting disease. They form an Alzheimer's disease database that can be compared with an individual patient's brain scan to see if that person's brain is exhibiting similar characteristics.

RSNA 2004 Dedications

RSNA President Brian C. Lentle, M.D., has announced the following dedications for the 90th RSNA Scientific Assembly and Annual Meeting:

The *RSNA Meeting Program* will be dedicated to the memory of **Sir Godfrey Hounsfield, D.Sc.**, the father of computed tomography, who died in August at the age of 84.



The Annual Oration in Radiation Oncology will be dedicated to **Hywel Madoc-Jones, M.D., Ph.D.**, a former radiation oncologist-in-chief at Tufts-New England Medical Center, who died in January from pancreatic cancer at the age of 65.

RSNA 2004 Logo Wins Design Award

The logo for the 90th RSNA Scientific Assembly and Annual Meeting is the winner of a 2004 American Graphic Design Award.

Of all the entries submitted, a national panel of judges chose only 12 percent to receive special recognition.

The American Graphic Design competition is sponsored by *Graphic Design USA*, a monthly business-to-business magazine for professional graphic designers and related creative and production professionals.



NIH Launches Annual Student Loan Repayment Program

The National Institutes of Health (NIH) is accepting applications until December 15 for its 2004 student loan repayment program.

The program provides up to \$35,000 for repayment of qualified educational debt from health professionals pursuing careers in clinical, pediatric, contraception and infertility, or health disparities research. The program also provides coverage for Federal and state tax liabilities.

Details and the online application are available at www.lrp.nih.gov.



2004 Introduction to Research for International Young Academics

The RSNA Board of Directors has approved 17 participants for this year's Introduction to Research for International Young Academics program, administered by RSNA's Committee on International Relations and Education (CIRE). The participants are:

International Young Academic	Country
Diego A. Aguirre Matallana, M.D.	Columbia
Cyrillo Araujo Jr., M.D.	Brazil
Carmen Caballero, M.D.	Mexico
Sorana Daniela Bolboaca, M.D.	Romania
Maia Gagua, M.D.	Republic of Georgia
Fabricio G. Goncalves, M.D.	Brazil
Gurpreet Singh Gulati, M.D.	India
Aki Kido, M.D.	Japan
Chan Kyo Kim, M.D.	South Korea
Eric T. Kimura Hayama, M.D.	Mexico
C. George Koshy, M.D.	India
Ana Carolina Motta, M.D.	Brazil
Petri Sipola, M.D.	Finland
Kushaljit Singh Sodhi, M.D.	India
Aija Teibe, M.D.	Latvia
Marina Ulla, M.D.	Argentina
Winfried A. Willinek, M.D.	Germany

The focus of the Introduction to Research for International Young Academics program is to encourage young radiologists from countries outside of the United States and Canada to pursue careers in academic radiology.

The program consists of a special seminar that is held during the RSNA Scientific Assembly and Annual Meeting. The participant receives complimentary annual meeting registration and a \$1,000 grant is provided to the individual's department to help advance their academic career.

Deadline for nominations each year is April 15. For more information, go to www.rsna.org/international/CIRE/iyaseminar.html or contact Fiona Miller at (630) 590-7741 or at CIRE@rsna.org.

NIBIB Convenes Panel on Intramural Research

The National Institute of Biomedical Imaging and Bioengineering (NIBIB) has established a Blue Ribbon Panel on Intramural Research. The panel will meet this fall to provide recommendations to the National Advisory Council on Biomedical Imaging and Bioengineering and NIBIB Director Roderic I. Pettigrew, Ph.D., M.D., on the planning and development of an intramural research program within NIBIB.

Specifically, the panel will provide recommendations on scientific directions, unique research opportunities and possibilities for collaboration. Co-chairs of the panel are John Linehan, Ph.D., P.E., vice-president for bioengineering for The Whitaker Foundation, and James Thrall, M.D., radiologist-in-chief in the Department of Radiology at Massachusetts General Hospital and Harvard Medical School in Boston.



The NIBIB Blue Ribbon Panel on Intramural Research will meet this fall at the William H. Natcher Building—the gateway to the NIH campus.

RSNA Advance Course in Grant Writing

A dozen people participated in the RSNA Advance Course in Grant Writing, held in September at RSNA Headquarters in Oakbrook, Ill. It was the first of four sessions for the group. Janet S. Rasey, Ph.D. (left in photo at right), a professor of radiation oncology and director of research funding at the University of Washington in Seattle, was the course instructor. For more information on the program, go to www.rsna.org/research/grantwriting/.



ERRATUM

In the article, “RSNA Expands Interactive Education Opportunities,” featured in the July 2004 issue of *RSNA News*, we want to point out that in the photo Dr. Jost is using the Electronic Presentation Online System™ (EPOS), which debuted at the 2003 European Congress of Radiology (ECR). See page 31 for an update on EPOS.

RSNA 2004 to Feature Focus Session on Medical Simulators

Picture this: Medical students stand around a patient in an emergency room setting. The patient complains of severe abdominal pain. Following a diagnosis of sigmoid volvulus, a student injects a bolus of 10 mg morphine. The patient develops respiratory arrest and nearly dies. The patient is reprogrammed for the next lesson.

The patient isn't real. It is a high-fidelity medical simulator that talks, blinks, breathes and moves just like a real patient. Physiologic data, including heartbeat, oxygenation and blood pressure are displayed on a real-time cardiac monitor, alongside customized laboratory results and imaging studies. This particular scenario is part of an educational module created in the late 1990s by Harvard anesthesiologists John Pawlowski and Marty Gallagher at the Center for Medical Simulation in Boston.

Working with the Center, James A. Gordon, M.D., M.P.A., an emergency physician at Massachusetts General Hospital, now directs the new G.S. Bechwith Gilbert and Katharine S. Gilbert Medical Education Program in Medical Simulation at Harvard Medical School.

"Simulation is to medical education what the microscope was to science," says Nancy Oriol, M.D., Harvard's associate dean for student affairs. Originally costing up to \$200,000, full-body patient simulators are now available for under \$50,000.

Gary J. Becker, M.D., RSNA Board Liaison for Science and branch chief of image-guided intervention for the Cancer Imaging Program at the National Cancer Institute, agrees that medical simulators represent the future of medical education. "Follow-



Steven L. Dawson, M.D. (left), helps a student learn how to place a chest tube into a simulated patient. The monitor shows a representation of the internal position of the tube on an augmented display.

ing the exercise previously described, the students learned that they should have applied book knowledge in the emergency room," he says. "In the heat of battle, no one thought to reverse the effects of morphine sulfate with IV Narcan. This example of a tangible experience, with failure to recall and implement a life-saving treatment, is arguably a much better teaching method than a textbook."

At RSNA 2004 a hot topic focus session will be held on Wednesday, December 1 to highlight the use of medical simulators to educate radiologists—especially interventional radiologists. The session will also demonstrate how to use medical simulators to problem-solve in various medical scenarios.

One of the presenters, Anthony G. Gallagher, Ph.D., from Emory University, co-authored the first randomized, double-blinded study of virtual reality

simulation in the training of surgical residents. The 2002 study demonstrated that residents trained on simulators to perform laparoscopic cholecystectomy performed 30 percent faster and were six times less likely to have intraoperative errors. Dr. Gallagher says a follow-up study with more complete data will be presented this month at the American College of Surgeons clinical congress.

"Minimally invasive procedures, especially image-guided interventions, are changing medicine," says Dr. Gallagher. "What we're seeing in carotid stenting is the convergence of interventional radiology, interventional cardiology, and vascular and neurovascular surgery. The FDA says that in order to perform procedures such as carotid stenting, you have to demonstrate a certain level of proficiency. The way to increase your proficiency is through

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medical simulation. This is a huge paradigm shift in medicine.”

Focus session moderator Steven L. Dawson, M.D., an associate professor of radiology at Harvard, says medical education must be modernized. “Medicine is using the same teaching model that Egyptians used 4,000 years ago. If I’m a doctor in a teaching hospital and a sick person comes in, I learn while treating that person. If I need to learn how to treat a particular disease and no one with that disease shows up, I’m out of luck.”

He adds that the system may have worked fine for many years, but times have changed. “We are in a crucial time in medical education where revolutions in computing, mathematics, engineering and education surround us,” Dr. Dawson says. “Our challenge is to grab the best of these revolutions and create a new way of medical learning. Prototyping new procedures *in silico* gives a whole new meaning to the phrase, ‘the practice of medicine.’”

Dr. Gordon will also participate in the focus session. His educational model of “full-body, immersive simulation” strives to replicate a full clinical encounter between a physician and a patient. He and his colleagues work with a robot-mannequin named “Stan,” short for standard patient.

“The purpose of full-body patient simulation in my own work is to recreate a provider’s emotional reaction to the care process,” explains Dr. Gordon, who is an inaugural member of the Board of Overseers of the new Society for Medical Simulation. “In doing so, students using the simulator can integrate and remember material in a pow-

erfully instructive way. Imagine a group taking care of Stan, who is having a heart attack and complains, ‘Doctor, my chest hurts.’ In the midst of the encounter, you could show the students a coronary angiogram to demonstrate the blocked artery. By juxtaposing ‘real-time’ diagnostic images alongside simulated clinical encounters, I think students can more easily integrate relevant anatomy and radiology with overall patient care.”

The RSNA 2004 focus session will familiarize attendees with the state of the art of simulation and raise awareness of the concept’s full potential.

“As a trustee for the American Board of Radiology (ABR), I envision the possibility of assessing a physician’s ability to do a procedure,” says Dr. Becker. “When a radiologist comes in for an oral exam, instead of showing an image and discussing how the patient would be managed, we could have the radiologist actually care for the patient.”

Dr. Becker says medical simulation training also can help to counter the effects of the 80-hour workweek limits for residents. “There’s a substantial and measurable decrease in the experience that residents are now getting,” says Dr. Becker, who cites information from Boston Children’s Hospital that there’s been a 33 percent decline in the number of procedures performed by otolaryngology residents since the new work rules took effect. “Medical simulators could play a role to help this situation.”

Dr. Becker proposes that radiology create a strategic approach to medical simulation with help from educators, RSNA staff and volunteers, academics, the simulation industry and ABR representatives. “Without a high level of

commitment and an overarching approach, radiology is in danger of being left in the dust of other medical specialties,” says Dr. Becker. “Emergency medicine, anesthesia and surgery embraced the topic a long time ago. Interventional cardiology is now on board as well. Although they are ahead of us, there is so much still to be done that we can certainly catch up if

we seize the opportunity. But we will need a significant investment of time, energy and resources, as well as a thoughtful strategic approach that makes sense for the entire discipline.”

RSNA’s belief that medical simulator technology will play an increasingly important role in radiology education has resulted in a collaborative workgroup involving RSNA and the Society of Interventional Radiology.

A hands-on exhibit on medical simulation will be featured at RSNA 2004 in the *infoRAD* area. For more information about the exhibit or about the hot topic focus session, “Is Medical Simulation a Part of Your Future? Education in the Era of Patient Safety,” go to rsna2004.rsna.org and click on Meeting Program in the left-hand column. Also see page 45 for a mini-tutorial on how to use the online *RSNA Meeting Program*. □

In order to perform procedures such as carotid stenting, you have to demonstrate a certain level of proficiency. The way to increase your proficiency is through medical simulation.

Anthony G. Gallagher, Ph.D.

Dr. Becker says medical simulators can be beneficial in:

- Medical student education
- Aptitude testing for specialty training
- Specialty-specific clinical scenarios in residency training (e.g., response to life-threatening contrast reactions in radiology)
- Procedure training—imparting essential skills, impacting the learning curve, reducing errors
- Addition of advanced skills to basic ones already acquired (e.g., learning new procedures, such as carotid stenting, on a
- background of basic skills in angiography, angioplasty, stenting, etc.)
- Re-credentialing in hospitals
- Assessment (e.g., board examinations)
- Maintenance of skills (practice hours logged in, as on a flight)
- Practice improvement/quality assurance

HHS Launches “Decade of Health Information Technology”

Health and Human Services (HHS) Secretary Tommy Thompson did everything but wear a train conductor’s hat and toot a whistle when he unveiled the first outline of a 10-year plan to transform the delivery of healthcare by building a new health information infrastructure.

At a secretarial summit on health information technology on July 21 in Washington, D.C., Thompson excitedly announced, “The train is leaving the station!”

Thompson’s exhilaration seemed to stem from the fact that people are finally listening to him. He noted that he has been talking about digital healthcare records for the past three years—and few have seemed to listen. But on that morning, more than 1,400 people attended the summit.

“America needs to move much faster to adopt information technology in the healthcare system,” he said. “Electronic health information will provide a quantum leap in patient power, doctor power and effective healthcare.”

With Thompson at the podium was Robert Goldszer, M.D., M.B.A., associate chief medical officer and director of primary care in the Department of Medicine at Brigham and Women’s Hospital (BWH) in Boston. Dr. Goldszer had actually hopped aboard the train a decade ago. He says the 10 primary care sites in his network have already established electronic medical records for every patient.

Dr. Goldszer says that in his network, physicians can order an imaging study through the radiology site on the home portal page. The physician’s and patient’s contact information and other data are automatically entered as part of the request, he says, adding that



Tommy Thompson
Health and Human Services
Secretary



David J. Brailer, M.D., Ph.D.
National Coordinator for Health
Information Technology

improved accuracy saves money, as does the radiology department’s printing of imaging studies on CD as opposed to film. The availability of digitized imaging studies online, with the exception of mammography, also allows primary care physicians to view those studies whenever and wherever they want.

BWH is apparently the exception. The overwhelming majority of hospitals and physician practices have been slow to accept computerization. Hospital use of electronic health records (EHRs) in 2002 was reported at 13 percent, according to an HHS fact sheet. Adoption by physicians’ practices varied from 14 percent to a possible high of 28 percent, depending on the size of the practice.

Just as adoption of EHRs has been slow, so will efforts to translate the strategic vision presented at the summit. David J. Brailer, M.D., Ph.D., the new national coordinator for Health Information Technology (HIT) candidly

admitted as much.

Dr. Brailer prepared the report, “The Decade of Health Information Technology: Delivering Consumer-centric and Information-Rich Health Care,” that was released at the summit. The report says federal leadership can help hasten efforts to be carried out by the private sector. The report identifies four major goals with strategic action areas for each:

- **Goal 1 - Inform Clinical Practice:** Bringing information tools to the point of care, especially by investing in EHR systems in physician offices and hospitals.
- **Goal 2 - Interconnect Clinicians:** Building an interoperable health information infrastructure, so that records follow the patient and clinicians have access to critical healthcare information when treatment decisions are being made.
- **Goal 3 - Personalize Care:** Using health information technology to give consumers more access and involvement in health decisions.

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• **Goal 4 - Improve Population Health:**

Expanding capacity for public health monitoring, quality of care measurement, and bringing research advances more quickly into medical practice.

The framework lists a number of actions HHS will begin over the next year to accelerate medicine's embrace of electronic records, but Dr. Brailer emphasized: "This is a framework. It is not a full-blown strategic plan. It is intended to stimulate dialogue."

Cost of the Initiative

While cost didn't come up during the summit, cost implications were discussed after the summit. "Dr. Brailer's plan relies on strategies that the American College of Physicians (ACP) has previously identified as crucial for success, such as providing incentives for the adoption of HIT and promulgating interoperable standards," says John Tooker, M.D., M.B.A., chief executive officer of ACP. "Approximately half of the practicing physicians in the United States work in practices with six or fewer physicians. The average cost for an EHR system is \$30,000 per physi-

cian. This initial cost, combined with the expense for transferring patient records and maintaining the system, often puts these systems out of the reach of small physician practices."

Thompson has said he would appoint an HIT Leadership Panel, composed mostly of industry executives, who will report to him by the end of this fall on specific options for reaching general objectives of the strategic framework.

Thompson also says HHS is exploring ways to work with the private sector to develop product standards for EHR functionality, interoperability and security.

Integrating the Healthcare Enterprise Initiative

Six years ago, RSNA and the Healthcare Information and Management Systems Society (HIMSS) launched the Integrating the Healthcare Enterprise (IHE) initiative. Under IHE, RSNA and HIMSS are helping tech-

nology professionals and healthcare industry leaders improve the way computer systems in healthcare share critical information. This involves establishing a common language so that

RSNA can be very proud that the IHE initiative is at the leading edge in the development of the electronic health record.

David S. Channin, M.D.

images and patient data can be easily and efficiently communicated across the healthcare enterprise.

"IHE was a cornerstone of several proposals that came out of the breakout sessions at the summit," says David S.

Channin, M.D., a member of the RSNA Electronic Communications Committee. "RSNA can be very proud that the IHE initiative is at the leading edge in the development of EHR."

HIMSS President H. Stephen Lieber, C.A.E., was also at the summit. "HIMSS will work closely with Dr. Brailer and his office to enhance their understanding of IHE and to demonstrate how IHE meets their present and future interoperability goals," he says, adding that RSNA and HIMSS will also seek federal endorsement and

Continued on page 10

Showcase Exhibit at RSNA 2004

The *infoRAD* showcase exhibit at RSNA 2004 will highlight IHE stories from users who have successfully implemented various aspects of IHE. There will also be a hands-on exhibit showing an advanced filmless environment based on IHE capabilities.

For more information on *infoRAD* at RSNA 2004, see page 26.



The RSNA 2003 Showcase Exhibit was titled "Pathway to Progress."

Diagnostic Radiology Earns Highest Four-Year Pay Increase

A new survey by the American Medical Group Association (AMGA) shows diagnostic radiologists in group practices remain among the highest-paid specialists in the United States. Not only did diagnostic radiologists enjoy strong compensation increases in 2003, but also, over the past four years, they have seen larger percentage and dollar increases than any of the other 27 medical specialties studied.

In 2003 the median compensation for a diagnostic interventional radiologist was \$410,250—the second highest in the survey. Cardiac/thoracic surgeons took the top spot at \$416,896. In 2002, median income for a diagnostic interventional radiologist was at \$401,000, slightly higher than the \$400,500 reported for cardiac/thoracic surgeons.

Diagnostic non-interventional radiologists maintained fifth-ranked status in median compensation in 2003 at \$345,619, behind catheter lab cardiologists (\$368,938) and orthopedic surgeons (\$354,495).

Four-Year Evaluation

Evaluation of radiology salaries over the past four years demonstrates continuing demand in the specialty. Since 2000, diagnostic interventional radiologists have seen a 34 percent increase in median salary; diagnostic non-interventional radiologists saw an increase of nearly 32 percent. That translates to a \$104,250 jump in median compensation for interventional radiologists and an \$83,040 increase for non-interventional radiologists since 2000.

“The single biggest driver of salaries is the availability of specialists that medical groups are looking for.

2003 Median Physician Compensation

Cardiac/thoracic surgeon	\$416,896
Diagnostic radiologist (interventional)	\$410,250
Catheter lab cardiologist	\$368,938
Orthopedic surgeon	\$354,495
Diagnostic radiologist (non-interventional)	\$345,619

Source: AMGA

■ To view the entire Median Physician Compensation 2000–2003 chart developed by AMGA, go to rsna.org/publications/rsnanews/oct04/salary-2.html.

There is still a shortage of available radiologists and this is driving up their market value,” says Donald W. Fisher, Ph.D., AMGA president and CEO.

The AMGA salary survey, released in July 2004, came from 204 multispecialty groups. But Dr. Fisher says the data are relevant for single specialty groups, who are, in most cases, paid more.

“We think it’s appropriate and valuable to do this kind of benchmarking. It’s important for physicians to take a look at their compensation strategy and to see what changes need to be made to be attractive to members of their profession,” he says. “We also do productivity measures. It allows our members to see if they are working as hard as their peer group. We like to see how we’re doing.”

Productivity

Diagnostic radiologists also showed strong results in gross charges—a measure of a physician’s productivity. Non-interventional diagnostic radiologists saw a 32 percent increase in

median gross charges from 2000 to 2003, while interventional radiologists saw an increase of nearly 11 percent. The top three specialties finishing the four-year survey period with the highest percentage changes in gross charges are pathology (43 percent), urology (42 percent) and gastroenterology (38 percent).

There is still a shortage of available radiologists and this is driving up their market value.

Donald W. Fisher, Ph.D.

AMGA says gross charges are important to measure, not just for productivity data, but also because the numbers are used in determining physician compensation.

Work RVUs

A third category reviewed by AMGA is work RVUs, or technical relative value units. The numbers are established by Medicare and are used in its fee formula, along with practice and malpractice expenses. The work RVU indicates the professional value of services provided by a physician.

“RVUs take into account calculations involving patients and procedures performed, along with the skill of the

Continued on next page

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physician and the risk of the procedure,” says Brad Vaudrey, a manager with RSM McGladrey, Inc., the firm AMGA hires to conduct the yearly survey. “The Centers for Medicare & Medicaid Services (CMS) provides the value for each procedure, and we’ve found that 40 percent of physicians in group practices use RVUs as a measure for compensation decisions.”

In analyzing the RVU data, McGladrey found interventional radiologists at the top of the list with a median 8,726 work RVUs in 2003—down slightly from 2002. In second place were the cardiac/thoracic surgeons with 8,107 work RVUs, followed by gastroenterologists (7,219), ophthalmologists (7,200) and non-interventional radiologists with 7,183 work RVUs—an increase from 2002.

Catheter lab cardiologists saw the largest single-year decline in median work RVU productivity at 12.39 percent.

Baby Boomer Impact?

While demand for radiologists continues to be strong, the changes in compensation figures demonstrate a slight shift in the recruiting landscape reflected in this year’s data from the Merritt, Hawkins and Associates Review of Physician Recruiting Incentives. In 2003, radiologists were the most highly recruited of the medical specialties. The 2004 study of income offered to the top 15 recruited specialties showed the strong demand for orthopedic surgeons just edged radiologists into second place. Average income offers to recruited radiologists rose from \$317,000 in 2003 to \$336,000 this year, reflecting a strong and steady demand in the profession. The average income of newly recruited orthopedic surgeons is slightly lower than radiologists at \$330,000, but the number of searches conducted in the specialty has grown from 140 in 2001, to 210 in 2004. The number of searches Merritt Hawkins conducted for radiologists fell from 230 last year to 202 this year.

“We attribute this to the natural

cycle of physician recruitment in which efforts tend to focus on certain areas of high demand which, over a period of several years, are eventually addressed by many providers,” analysts for Merritt Hawkins reported in their annual survey. The company also attributes strong demand for radiologists and orthopedic surgeons to an aging population that wants to remain active.

“Older patients utilize x-rays and other imaging modalities at a rate three times higher than younger people,” said the Merritt report. “Demand (for orthopedic surgeons) is being driven by the ‘active elderly’ and aging baby boomers who are seeking to maintain vibrant lifestyles and often require orthopedic surgery to do so.”

This information should make radiologists feel positive about their future earning power. “Based on these numbers and our experience, radiology is still going to be a high-demand specialty and practitioners should expect above-inflationary compensation increases,” says Vaudrey. □

HHS Launches “Decade of Health Information Technology”

Continued from page 8

support of the IHE initiative.

“With many organizations now vying for the available federal dollars for this new plan, RSNA and HIMSS will continue to work with Dr. Brailer to move his agenda forward,” Lieber says. “The key will be for the government to provide adequate support to drive industry toward accomplishment of Dr. Brailer’s agenda.”

Dr. Channin adds, “The very successful IHE process is being recognized



as one way to organize the monstrous task of developing an electronic health record. IHE has solved some very complex technical problems as to how to

get heterogeneous information systems to interoperate to get the job done.

Although IHE has its roots in radiology, it is now addressing needs in intra- and inter-institutional situations. RSNA and HIMSS, as co-developers of IHE, must now lead the way in developing standardized content for the radiology components of the EHR.”

Since IHE was established in 1998,

it has expanded from radiology and IT infrastructure to cardiology and clinical laboratory and pathology. The American College of Cardiology recently agreed to sponsor the IHE work in cardiology. IHE has also grown internationally with activities under way in Asia, Europe and North America. □

Notes: To view the HIT Report At-A-Glance from HHS, go to www.hhs.gov/news/press/2004pres/20040721.html. To view the news release from HHS on the summit, go to www.hhs.gov/news/press/2004pres/20040721a.html.

Scientists Reach Important Milestone in Nanoscale MR Research

Using magnetic resonance technology 10 million times more sensitive than medical MR imaging devices, scientists can detect the faint magnetic signal from a single electron buried inside a solid sample. This discovery is an important step in the quest to achieve three-dimensional imaging of the atomic structure of molecules.

The technique, developed at IBM's Almaden Research Center in San Jose, Calif., is called MR force microscopy (MRFM). It shares some characteristics with MR imaging, but uses a very different type of sensor.

"MR imaging is a very powerful technique because it can look below surfaces and view three-dimensional structures," says Daniel Rugar, Ph.D., manager of nanoscale studies at IBM. "The one disadvantage with MR imaging is that it takes around a million trillion protons in order to generate a detectable signal. Thus each pixel, or voxel, in an MR image requires this very large number of hydrogen atoms. Because so many hydrogen atoms are required, spatial resolution is limited."

Even the most specialized MR microscopes require at least a trillion protons, he says, which limits the spatial resolution to about one micrometer.

Dr. Rugar's team is trying to over-

come this sensitivity limitation. They eventually hope to be able to detect an individual proton, which would open up the possibility that an MR imaging-like technique could someday be able to display 3D images of the atomic structure of molecules.

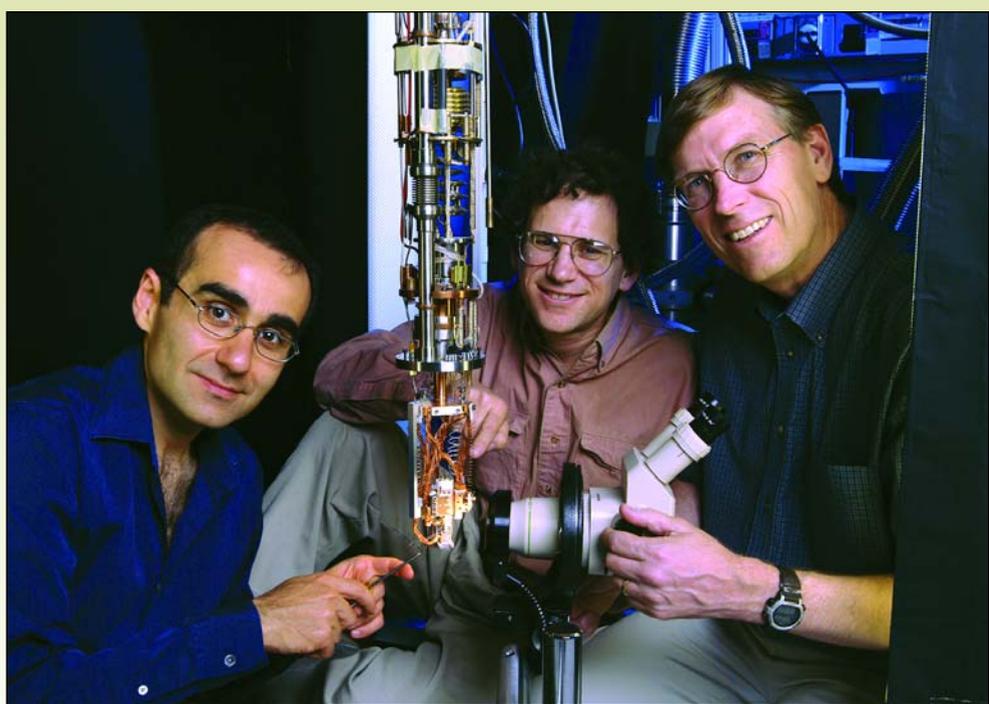
The detection of the magnetic signal from an individual electron spin is an important intermediate milestone. "Spin" is a term physicists often use to refer to the fundamental magnetism of individual atomic particles, such as protons or electrons. An electron spin is easier to detect than a proton spin

because the magnetism of an electron is about 650 times larger than the magnetism of a proton.

The key to this detection is the development of a much more sensitive method to detect the weak magnetic signal. "Instead of using a coil to detect a voltage induced by the motion of the spin, we use detection based on magnetic force," says Dr. Rugar.

"Our apparatus uses a tiny, nanoscopic bar magnet—the magnetic tip—mounted on a microscopic cantilever. The cantilever is like a tiny

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IBM Almaden's MRFM Research Team

(left to right) Raffi Budakian, John Mamin, Dan Rugar, Ph.D., and Benjamin Chui (not shown) developed and used the MR force microscope to detect the magnetic signal from a single electron.

Image courtesy of IBM

Continued from previous page

silicon diving board and is responsive to the very small magnetic force that is exerted by the electron on the magnetic tip,” he explains. “To see the signal, we vibrate the tip and use a high frequency magnetic field, much like MR imaging, to manipulate the magnetic orientation of the electron.”

As the electron flips back and forth in orientation, the magnetic force on the cantilever flips between attraction and repulsion. The net result is that the vibration frequency of the cantilever changes slightly, about one part per million.

“To get to the dream of 3D molecular imaging, we need to improve the sensitivity of the technique so that we can see individual protons,” says Dr. Rugar. “To image the positions of hydrogen atoms within a biomolecule will require at least 650 times improvement in sensitivity.”

He says his team is also trying to further improve spatial resolution. “While our current 25 nm spatial resolution is 40 times better than the best MR image, it is still a factor of 250 from being able to resolve individual atoms in a molecule.”

Medical Implications

Thomas R. McCauley, M.D., a private practitioner who is also an assistant clinical professor of diagnostic radiology at the Yale School of Medicine, suggests the IBM breakthrough may be a potentially important advance as a research technique

for analysis of the microscopic structure of samples. “Possible changes in the technique allowing application to human imaging are always possible,” he says, reflecting upon the fact that MR analysis of samples occurred

decades before MR imaging of humans.

William G. Bradley Jr., M.D., Ph.D., professor and chairman of the Department of Radiology at the University of California-San Diego Medical Center, sees potential for the new technique. “Right now, I think it’s going to have applications in basic chemistry—showing the structure of proteins,” he says. “This may reveal certain molecular structures in a way that’s never been possible before and that could conceivably help us in design of new molecular therapies.”

More information on MRFM is available at www.research.ibm.com/resources/news/20040714_nanoscale.shtml. The new development is also detailed in the July 15 issue of the journal *Nature* (Vol. 430 No. 6997 p. 300). □

To get to the dream of 3D molecular imaging, we need to improve the sensitivity of the technique so that we can see individual protons.

Daniel Rugar, Ph.D.

How an MRFM works

MRFM uses an ultrathin silicon cantilever (yellow) with a nanometer-size magnetic tip (blue) to detect the magnetic signal from an individual electron buried below the surface of the sample. Because the electron has a quantum mechanical property called “spin,” it acts like a tiny bar magnet and can either attract or repel the magnetic tip. The interaction between the spin and the tip is localized to the bowl-shaped region in the sample called the “resonant slice,” which moves as the cantilever vibrates. With the aid of a high-frequency magnetic field generated by a coil (right, background), the orientation of the electron (green arrow) flips as the resonant slice passes through. The magnetic force between the electron and magnetic tip alternates between attraction and repulsion every time the electron flips its orientation, causing the cantilever frequency to change slightly. A laser beam (left) is used to measure precisely the variations in cantilever vibration frequency.

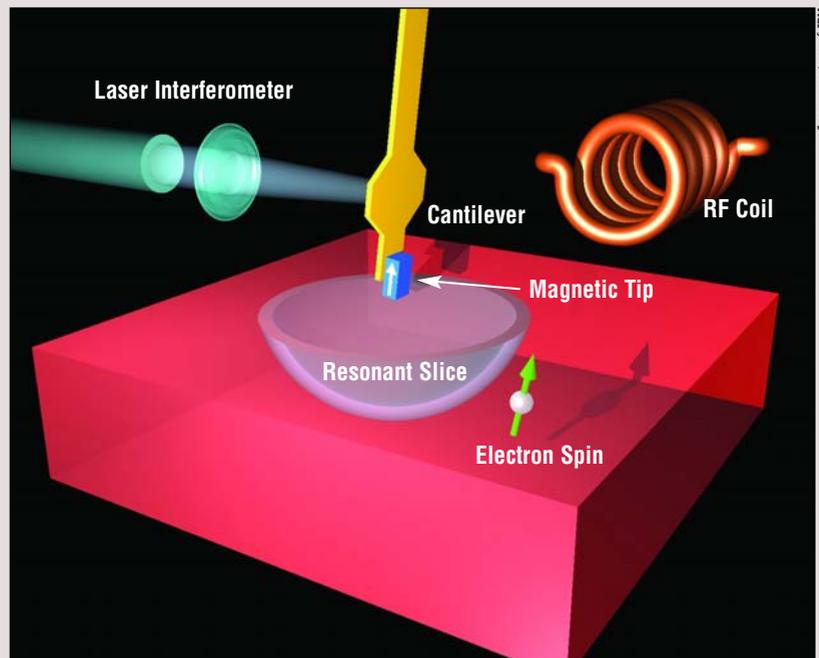


Image courtesy of IBM.

Scientific Program Reflects RSNA 2004's Role as a Global Forum

Reflecting this year's theme, "Radiology's Global Forum," the scientific program for RSNA 2004 will include more than 2,100 scientific paper and poster presentations by researchers from around the world.

The RSNA 2004 scientific program provides cutting-edge research in every aspect of the art and science of medical imaging and reflects research trends that will affect the future of radiology.

George S. Bisset III, M.D., RSNA Scientific Program Committee chairman and vice-chair of the Department of Radiology at Duke University Medical Center in Durham, N.C., says the abstracts submitted for presentation this year show several important trends:

- The use of functional MR imaging (fMRI) to evaluate areas of the body other than the brain, including the heart and abdomen.
- Expanded use of ablation techniques outside the liver; further moving radiology beyond a diagnostic tool to a treatment modality. "In the past, ablation was used to treat primary liver tumors and liver metastases, and now we see it used for tumors in the genitourinary tract and for patients with breast, lung and bone tumors," says Dr. Bisset. "It used to be mostly radiofrequency (RF) ablation, but now other ablation techniques are also being employed, including cryoablation and laser thermal ablation."
- Greater use of hybrid imaging with positron emission tomography (PET) combined with CT or MR to provide both functional and anatomic information for the diagnosis and evaluation of tumors.

- New research on angiogenesis imaging to evaluate tumor activity and identify early tumor growth.

The members of the RSNA Scientific Program Committee and its 16 subcommittees reviewed more than 6,400 scientific abstracts submitted for presentation at RSNA 2004. Over the summer, committee members accepted for presentation about 1,600 scientific papers and 500 scientific posters.

Subspecialty Abstracts

New this year is a subcommittee of the Scientific Program Committee devoted to **emergency radiology**. "A lot of papers dealt with the use of multislice CT to

replace radiography in applications where radiography has traditionally been used, such as to evaluate multiple trauma in the spine, lumbar and thoracic region, chest and pelvis," says Stuart E. Mirvis, M.D., subcommittee chairman.

"Multislice is faster and more sensitive than radiography, and it can be reformatted to provide better image quality," he adds.

"Another trend is greater use of multislice CT angiography in assessing acute trauma in the aorta, cervical vessels, extremities and abdomen, thus eliminating the need for angiography."

Valerie P. Jackson, M.D., chair of the **breast imaging** subcommittee, points to

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In the past, ablation was used to treat primary liver tumors and liver metastases, and now we see it used for tumors in the genitourinary tract and for patients with breast, lung and bone tumors.

— George S. Bisset III, M.D.



**90th Scientific Assembly
and Annual Meeting**

November 28 – December 3, 2004
McCormick Place, Chicago



RSNA 2004 Scientific Program Committee

(Back row, from left) Jay P. Heiken, M.D., Anne C. Roberts, M.D., Donald P. Frush, M.D., Gerald D. Dodd III, M.D., *Vice-Chairman*, George S. Bisset III, M.D., *Chairman*, Robert M. Quencer, M.D., Myron A. Pozniak, M.D., David R. Pickens III, Ph.D., *AAPM Liaison*, Jack A. Ziffer, M.D., Ph.D., Georges Y. El-Khoury, M.D., John R. Mayo, M.D., and Stuart E. Mirvis, M.D. (Front row, from left) Valerie P. Jackson, M.D., Chul Soo Ha, M.D., Kimberly E. Applegate, M.D., M.S., and H. Hugh Hawkins Jr., M.D. *Not pictured*: Melvin E. Clouse, M.D., Maryellen L. Giger, Ph.D., and Philip J. Kenney, M.D.

Continued from previous page

a study of ultrasound-guided cryotherapy for the treatment of breast cancer. The study found that cryotherapy completely destroyed tumors smaller than 15 mm in diameter. "Cryotherapy has *potential* for treatment of breast lesions without the need for surgery," she notes.

Another study she finds noteworthy is one describing the use of ultrasound-guided fine-needle aspiration to preoperatively stage the axilla in women diagnosed with breast cancer. "Axillary staging for breast cancer patients has become less and less invasive over the years," she says. "Ultrasound-guided fine-needle aspiration may be an accurate method for assessing axillary lymph nodes and could help determine which patients need axillary node surgery."

In the realm of **cardiac imaging**, subcommittee chair Melvin E. Clouse, M.D.,

notes an abstract describing MR planimetry to quantify aortic valve stenoses using steady-state free precession and gradient-echo fast low angle sequences. "This fast MR imaging technique for measuring the aortic valve area offers a fast, noninvasive technique to evaluate the degree of aortic stenosis, and it avoids the more invasive method of transesophageal echo," Dr. Clouse says.

He also highlights an abstract looking at the use of multidetector CT (MDCT) to assess the morphology of coronary artery lesions in patients who recently had unstable angina or a myocardial infarction. "MDCT was able to detect non-calcified plaque," he explains. "This is an exciting advance in comparison with invasive intracoronary ultrasound. MDCT was able to measure the length of the plaque, the remodeling index of the coronary artery and the degree of stenosis at the site of the obstructing plaque."

The chair of the subcommittee on **chest radiology**, John Mayo, M.D., says one important abstract in his area is on the use of low-dose CT as a screening tool for lung cancer. The study, called the International Early Lung Cancer Action Project, conducted at 33 institutions around the world since 1993, concludes that with annual CT screening, a high percentage of Stage I lung cancers are discovered.

Dr. Mayo also identifies as important an abstract describing the use of percutaneous RF ablation alone or in conjunction with chemotherapy and radiation therapy to treat primary or metastatic lung tumors. The researchers concluded that the technique appears to be safe and technically feasible.

In the subspecialty of **gastrointestinal radiology**, subcommittee chair Jay P. Heiken, M.D., identifies studies using RF ablation to treat liver metastases. "These large-scale studies demonstrate that RF

Scientific Program Reflects RSNA 2004's Role as a Global Forum

ablation of liver metastases in patients with colon cancer is an effective treatment. In patients with small solitary lesions, the results are equivalent to those reported for surgical resection," he says.

Dr. Heiken also notes a paper showing that RF ablation of small hepatocellular carcinomas may be as effective as surgical resection in prolonging patient survival. He also highlights a paper demonstrating the feasibility of performing CT colonography, or virtual colonoscopy, without bowel preparation.

The chair of the subcommittee on **genitourinary radiology**, Philip J. Kenney, M.D., identifies as important a large study, funded by the National Institute of Diabetes & Digestive & Kidney Diseases, of the use of MR imaging to assess the progression of polycystic kidney disease. "This is the first real demonstration of volumetric measurements by MR imaging of diseased organs," says Dr. Kenney. "It demonstrates the accuracy and ability of MR imaging to track small changes in the cyst size as a measure of disease progression."

He also finds significant a study showing percutaneous RF ablation of solid renal tumors to be a promising minimally invasive treatment for patients with high-risk medical conditions. The study's authors concluded that long-term follow-up of the treated patients is necessary to confirm the results of this therapy.

Kimberly Applegate, M.D., M.S., chair of the subcommittee on **health services, policy and research**, says a study of the causes of malpractice suits in radiology should be of great interest to radiologists. Researchers examined the records of 5,497 radiologists from 42 states and found that 51 percent of the radiologists had a history of at least one malpractice suit and that the vast majority of the suits involved a failure to diagnose.

Dr. Applegate also highlights a study on how the obesity epidemic in the United States impacts the ability of radiology departments to provide diagnostic imaging. The authors of the study concluded that changes in the American body habitus over 14 years have increasingly affected the ability of departments to provide quality images and accurate image interpretations. "We are getting fatter and that may limit access to imaging," Dr. Applegate says.

George Y. El-Khoury, M.D., chair of the subcommittee on **musculoskeletal radiology**, points out a study using MDCT to perform a virtual autopsy for cases of unnatural deaths and to compare the results with subsequent autopsies. MDCT was shown to have a high correlation with autopsy results and was able to provide additional information, such as the distribution of gases from small pneumothoraces, in free abdominal air and after open skull trauma.

Dr. El-Khoury also notes a study demonstrating the practicality of using 3-Tesla isotropic 3D imaging to evaluate knee injuries. "Isotropic proton density 3D imaging of the knee will likely change the way knee injuries are imaged in the future," he says. "Images are acquired in one plane, but they can be viewed in any arbitrary plane."

Robert M. Quencer, M.D., chair of the subcommittee on **neuroradiology/head and neck imaging**, finds noteworthy a study of MR proton spectroscopy to evaluate the impact of highly active antiretroviral therapy (HAART) on the character and

intensity of metabolic changes in the brains of HIV-infected patients. "MR spectroscopy can document the effectiveness of HAART on returning brain metabolites to more normal levels in HIV-positive patients who are not symptomatic," he says.

Another study Dr. Quencer highlights is one showing that fMRI can image varying responses to glucose loading in the hypothalamus of obese and lean humans. "Given the current obsession with obesity in this country, this paper should have national recognition," he says. "To my knowledge, this is the first paper to address functional imaging differences

between obese and non-obese people."

Jack A. Ziffer, M.D., chair of the subcommittee on **nuclear medicine**, says the most striking trend in his area is the use of PET/CT hybrid imaging. "Superb work is being done with PET/CT hybrid imaging in terms of diagnosing and staging cancers," he says.

"The number and quality of papers submitted are unbelievable."

The importance of this trend is that "nuclear medicine is clearly changing," says Dr. Ziffer. "Nuclear medicine performed in isolation, without the benefit of correlative anatomic imaging, is something of the past. PET scans reveal the physiology of the cells being studied, whether normal or abnormal. CT tells whether the cells are normal or abnormal in terms of size and sometimes density. Combining PET with CT gives incredible sensitivity, particularly in detecting and

This is the first real demonstration of volumetric measurements by MR imaging of diseased organs. It demonstrates the accuracy and ability of MR imaging to track small changes in cyst size as a measure of disease progression.

— Philip J. Kenney, M.D.

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Scientific Program Reflects RSNA 2004's Role as a Global Forum

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localizing cancers, and may cut the image acquisition time in half.”

In the field of **radiation oncology and radiobiology**, subcommittee chair Chul Soo Ha, M.D., says that a significant number of abstracts deal with the use of intensity-modulated radiation therapy (IMRT) to treat prostate cancer. “IMRT provides a very localized treatment for prostate cancer, and data have been accumulating on its effectiveness,” he says.

Dr. Ha also notes a study of the use of radioimmunotherapy in the treatment of lymphoma. “More and more data are coming out on radiolabeled antibodies that are conjugated with radioactive iodine or radioactive yttrium,” he says. “They are injected into patients and bind to the tumor cells to help kill them.”

Donald P. Frush, M.D., acting chair of the subcommittee on **pediatric radiology**, points to a study using diffusion tensor imaging (DTI) to evaluate white matter in the brains of children with attention-deficit hyperactivity disorder (ADHD). “We believe this study is the first DTI study to report localized hemispheric white matter bundle abnormalities in ADHD,” the study authors wrote.

Dr. Frush also notes a study comparing the results of PET/CT imaging for pediatric cancers with those of contrast-enhanced CT. The authors concluded, “While longer term follow-up of these patients is required to determine the accuracy of the method, our data suggest that FDG PET/CT offers the most accurate methodology for assessment of physiologically active pediatric malignancies.”

According to Maryellen Giger, Ph.D., chair

of the **physics** subcommittee, one noteworthy abstract reports a new integrated breast-imaging system that allows simultaneous acquisition of x-ray and ultrasound images during a single breast compression. “This study indicates that the next generation of breast imaging is multimodality,” Dr. Giger says.

In addition, she highlights a study showing the promise of a computer-aided diagnostic method using ultrasound images from scanners made by two different manufacturers to detect breast lesions. “This paper indicates the potential role of computer-aided diagnosis in ultrasound imaging in the diagnostic workup for breast cancer,” she explains.

As for the subspecialty of **radiology informatics**, subcommittee chair H.

Hugh Hawkins, M.D., identifies as important an abstract describing computer software that allows CT colonography to be done without traditional bowel-cleansing preparation. The software enables endoscopic views of the colon after electronic cleansing of the bowel.

Dr. Hawkins also highlights an abstract showing a role for CT and 3D modeling in analyzing art, specifically the structure of a 5,300-year-old Egyptian mummy mask to help stabilize and restore the mask. “This is an example of applying radiologic technology to art,” he says.

Myron A. Pozniak, M.D., chair of the subcommittee on **ultrasound**, notes a number of abstracts on elasticity imaging.

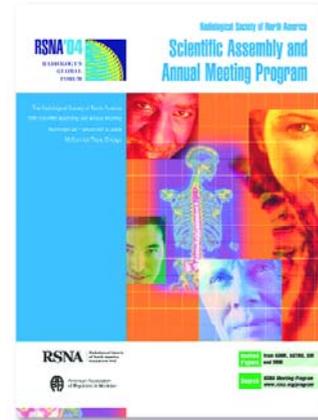
“Ultrasound elasticity imaging allows one to look at differences in tissue strain to differentiate an area of tumor from an area of normal tissue,” he says. “The technology is being applied to breast tissue and the thyroid gland.”

Another area of interest reflected in the abstracts is in dynamic contrast-enhanced ultrasound imaging of the liver. “This is by far the hottest topic in ultrasound,” Dr. Pozniak says. “The studies are mostly from Europe and Asia because the United States still does not have FDA approval for this application of ultrasound contrast. This technology can be used to differentiate benign from malignant lesions in the liver.”

Finally, in the area of **vascular and interventional radiology**, subcommittee chair Anne C. Roberts, M.D., comments on the increase in the number of abstracts devoted to the use of RF ablation to treat malignancies in the liver, kidneys, lungs and bones. “This is a new way of treating patients with cancer who have solitary lesions and may not need full-blown chemotherapy or do not have surgical options,” she says. “It looks like a good way to prolong life with minimal morbidity.”

A lot of studies in her area also focused on multidetector CT vascular imaging. “MDCT is being used in particular to evaluate peripheral vascular disease,” she notes. “It avoids the use of a catheter for an arteriogram to visualize the vasculature. There is also a lot of interest in doing the same kind of imaging with MR, especially in evaluating kidney function.”

A visual tutorial on how to use the online *RSNA Meeting Program* is on page 45.



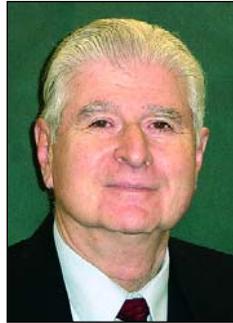
This study indicates that the next generation of breast imaging is multimodality.

— Maryellen Giger, Ph.D.

RSNA 2004 Gold Medalists

Three individuals will receive a Gold Medal—RSNA's highest honor—at the 90th Scientific Assembly and Annual Meeting: Alexander Gottschalk, M.D., from East Lansing, Mich.; Seymour H. Levitt, M.D., from Minneapolis; and John G. McAfee, M.D., from Chevy Chase, Md.

Alexander Gottschalk, M.D., is a pioneer researcher and author who has helped shape modern medical imaging. He worked with the first



clinically useful prototype Anger scintillation camera and performed the first dynamic camera studies of the brain and heart using technetium-99m. Dr. Gottschalk also made the first dynamic camera studies of the kidneys.

"Alex has made great contributions to radiology and nuclear medicine over a long career during which he has consistently published textbooks in nuclear medicine recognized for their great pedagogical value," said RSNA President Brian C. Lentle, M.D. "He was alert and recognized the coming impact of magnetic resonance imaging in the early days of that technology. As one of the principal investigators in the prospective investigation of pulmonary embolism diagnosis (PIOPED) study, Alex greatly helped in our understanding of the natural history and diagnosis of pulmonary embolism."

"It is awesome to become a Gold Medalist in this society, a group that contains many of my own role models," said Dr. Gottschalk, who is currently the chair of the nuclear medicine working group of PIOPED II.

He began his career as a research associate at Donner Laboratory at Lawrence Radiation Lab at the University of Califor-

nia, Berkeley. He then spent a decade at the University of Chicago, where he helped form the university's first section of nuclear medicine.

As professor of diagnostic radiology, Dr. Gottschalk made the move to Yale University School of Medicine in New Haven, Conn., where he worked with colleagues from cardiology to establish a pioneering cardiovascular nuclear medicine operation. He was also director of the section of nuclear medicine, vice-chairman of the Department of Diagnostic Radiology, and director of the diagnostic radiology residency program. Currently, he is professor of diagnostic radiology at Michigan State University in East Lansing.

For a decade Dr. Gottschalk was editor-in-chief of the *Yearbook of Nuclear Medicine*. He has served on committees for the National Heart, Lung, and Blood Institute, as well as national committees for the U.S. Food and Drug Administration, the National Institute of General Medicine Sciences, and the Accreditation Council for Graduate Medical Education.

An RSNA member since 1965, Dr. Gottschalk has been an RSNA second vice-president and chairman of the nuclear medicine subcommittee of the RSNA Scientific Program Committee.

■ *For an expanded version of Dr. Gottschalk's biography, see the RSNA Meeting Program at rsna2004.rsna.org. Click on Meeting Program in the left-hand column.*

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RSNA 2004 Gold Medalists

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Seymour H. Levitt, M.D., is a distinguished radiation oncologist and researcher who leads by example with unwavering dedication.



“Seymour has always given great support to RSNA and to the role of radiation oncology in the Society,” said RSNA President Brian C. Lentle, M.D. “He was quick to recognize and seize upon the increasing importance of imaging to define tumor volumes as radiation oncology became ever more precise in defining cancers and the dose and dose fractionation used to treat them.”

“This organization has been one of the most important aspects of my professional career,” said Dr. Levitt, who has been an RSNA member since 1965. “The opportunity to serve the Society as an officer and member of the Board increased my involvement and made me aware of RSNA’s outstanding character, commitment, and dedication to the science and practice of radiology, and to the patients it serves. I will truly treasure this award because of the outstanding nature of this society and the award’s significance.”

A Phi Beta Kappa, Dr. Levitt graduated cum laude from the University of Colorado, where he was elected to Alpha Omega Alpha and earned his bachelor’s and medical degrees. He completed his internship at Philadelphia General Hospital and his residencies in internal medicine and radiology at the University of California, San Francisco. He also was an American Cancer Society Clinical Fellow.

Dr. Levitt’s long and distinguished career includes positions at the University of Michigan in Ann Arbor, the University of Rochester Medical Center in New York, the

University of Oklahoma Medical Center, and the Medical College of Virginia in Richmond. Since 1970, Dr. Levitt has been in Minneapolis, where he has served as head and clinical chief of the Department of Therapeutic Radiology-Radiation Oncology at the University of Minnesota and as chief of the therapeutic radiology service at the University of Minnesota Hospitals. Currently, he is a professor of therapeutic radiology-radiation oncology at the University of Minnesota and is a foreign adjunct professor at Karolinska Institutet in Stockholm, Sweden.

Dr. Levitt has been very active in RSNA, serving on the RSNA Board of Directors and as 1999 RSNA president.

■ *For an expanded version of Dr. Levitt’s biography, see the RSNA Meeting Program at rsna2004.rsna.org. Click on Meeting Program in the left-hand column.*

John G. McAfee, M.D., is an active researcher and scholar in nuclear medicine whose groundbreaking work has led to significant medical advances, especially in blood cell labeling.



“John’s commitment to research and teaching has been monumental,” said RSNA President Brian C. Lentle, M.D. “Working at the State University of New York with Dr. Subramanian, John developed the first technetium-99m-labeled phosphate bone scanning agents and, while on sabbatical in Great Britain, he found other radioactive agents with Dr. Matthew Thakur, which irreversibly labeled blood cells for imaging their organ distribution. These have become among the most widely used procedures not only in nuclear medicine, but also in radiology as a whole.”

“I am greatly honored to receive such a prestigious award from RSNA, an organization that I have always respected,” said Dr. McAfee. “I remember attending my first RSNA meeting when I was a resident. The professionalism of the meeting and of the Society made a most favorable impression on me. I also remember the thrill of presenting my first paper at RSNA. It is a privilege to be recognized by such a prominent group.”

Born and raised in Canada, Dr. McAfee received his medical degree from the University of Toronto and completed internships at Victoria Hospital and Westminster Hospital, both in London, Ontario. He completed radiology residencies at Victoria Hospital and The Johns Hopkins Hospital in Baltimore, where he also completed a fellowship.

Dr. McAfee remained at Johns Hopkins for more than a decade as a staff radiologist, becoming chief of diagnosis and later, in charge of nuclear medicine. He then spent 25 years at the State University of New York Health Science Center at Syracuse as chair and director of radiologic sciences. During that time, Dr. McAfee and Henry N. Wagner Jr., M.D., imaged the kidneys with radiomercury labeled chlormerodrin. This event, in 1965, is listed by the Society of Nuclear Medicine as an historic moment in nuclear medicine.

An RSNA member since 1956, Dr. McAfee has been a professor of radiology at the George Washington University Medical Center, a consultant to the National Institutes of Health (NIH) Clinical Center in nuclear medicine, and in 1993, became a full-time staff member in nuclear medicine at the NIH Clinical Center in charge of radiopharmaceutical research.

■ *For an expanded version of Dr. McAfee’s biography, see the RSNA Meeting Program at rsna2004.rsna.org. Click on Meeting Program in the left-hand column.*

RSNA 2004 Honorary Members

Honorary Membership in RSNA is presented for significant achievements in the field of radiology. At RSNA 2004, Honorary Membership will be given to Helen Carty, M.B.B.Ch. from Liverpool, U.K.; Guy Frija, M.D., from Paris, France; George Klempfner, M.D., from Victoria, Australia; and Brian S. Worthington, M.D., from Derbyshire, U.K.

An active educator and leader in pediatric radiology in the United Kingdom, **Helen Carty, M.B.B.Ch.**, has been at the forefront of the use of medical imaging to detect child abuse.



"Helen has always brought a down-to-earth approach to academic and clinical radiology that also served her well in committee work. Perhaps that is a lesson she learned from her little patients," said RSNA President Brian C. Lentle, M.D. "Above all Helen lived the life she advocated—no one can be a good doctor or good radiologist without also remembering to be a good human being. She always made time to enrich her life through her Irish roots and family."

"Honorary Membership in RSNA is an award that, though I am pleased and honored to receive, is something I never dreamt of," said Dr. Carty. "For me, it is not just a personal honor, but it is also a treasured honor for the European Congress of Radiology (ECR). Both personally and as chairman of ECR, I am proud to be thus honored. It enhances the increasingly developing trans-Atlantic bonds in our discipline, and wearing both my hats, I thank all who have chosen me to receive it."

Dr. Carty graduated from University College in Dublin. She completed her postgraduate work at Mater Hospital in Dublin and St. Thomas's Hospital in London.

For more than 25 years, Dr. Carty was director of radiology services at Royal Liverpool Children's National Health Service Trust, Alder Hey Children's Hospital. She recently retired from her position as professor of pediatric radiology, thesis supervisor, and examiner at the University of Liverpool in England. She had been actively involved with the National Health Service and was the ambassador for radiology in the Department of Health's International Fellowship Recruitment Program.

Dr. Carty is a prolific writer and editor, and has taken part in numerous courses designed to bring modern radiology to the emerging former eastern bloc countries. She has delivered similar sessions in Central America, China, India, and South Africa. Dr. Carty has organized 10 postgraduate teaching courses and been an invited visitor to all academic medical institutions in the United Kingdom.

■ *For an expanded version of Dr. Carty's biography, see the RSNA Meeting Program at rsna2004.rsna.org. Click on Meeting Program in the left-hand column.*

Guy Frija, M.D., is a talented researcher, educator and administrator who has helped transform the French health-care system.



Dr. Frija has greatly contributed to the fields of MR contrast imaging, MR lymphography and functional MR imaging of solid tumors and the liver. He has also

Continued on next page

RSNA 2004 Honorary Members

Continued from previous page

focused attention on managing the digital imaging department at Hôpital Européen Georges Pompidou and participating in the ongoing transformations of medical practice in France.

“Guy Frija pursued some of his education in North America and has always been a devoted supporter of RSNA. After moving to France, he rose to leadership positions in his own department as well as in French radiology,” said RSNA President Brian C. Lentle, M.D. “He combined these activities with scientific work in developing his own subspecialty, which gained him international recognition.”

Dr. Frija was born in Morocco. He completed his radiology residency in Paris, but left the country to serve for 16 months in the military in Abidjan on the Ivory Coast. He also spent time as a resident at the University of Montreal.

He was the chairman of the Department of Radiology in Garches, France, before becoming the chairman of the Department of Radiology at Laënnec Hospital in Paris. Currently, he is director of the Laboratory of Imaging Research and chairman of the Department of Radiology at the Hôpital Européen Georges Pompidou in Paris.

In addition to his academic career, Dr. Frija has held a variety of concurrent ancillary positions. He is the president of the National Commission of Medical Devices and consultant to the French Ministry of Health. He served as associate dean of the Necker Faculty and as a consultant to the French National Institute for Health and Medical Research, INSERM, both in Paris.

An RSNA member since 1989, Dr. Frija is the current secretary general of the French Society of Radiology. He is also the president-elect of the International Society for Strategic Studies in Radiology.

Dr. Frija is a prolific author. His textbooks are considered to be the best in the French radiologic literature.

■ *For an expanded version of Dr. Frija's biography, see the RSNA Meeting Program at rsna2004.rsna.org. Click on Meeting Program in the left-hand column.*

George Klempfner, M.D., is a tireless educator and researcher dedicated to raising the standards of radiology on an international level.



Born in Prague, Czechoslovakia, Dr. Klempfner has spent his entire career promoting radiology education, especially in disadvantaged areas including the South Pacific. Most recently he has dedicated his research efforts to radiation protection. His current research interest is radiation exposure from CT.

“George has always had a great devotion to the need for organized radiology to become both strong and international,” said RSNA President Brian C. Lentle, M.D. “He has served as president of the Royal Australian and New Zealand College of Radiologists and went on to move through the executive ranks of the International Society of Radiology (ISR) to become its president, completing a two-year term this year.”

Dr. Klempfner has been an RSNA member since 1983 and considers the award a special tribute. “The yearly RSNA scientific assembly is the premier international radiology meeting. It provides the most up-to-date information on radiology education, technology, and research,” said Dr. Klempfner.

In 1968, he received his radiology qualification in Melbourne, Australia. After finishing a fellowship in nuclear medicine at the Hospital of the University of Pennsylvania, he returned to Australia with dual qualifications in radiology and nuclear medicine. He rose through the medical ranks from junior medical resident to become the director of nuclear medicine at Queen Victoria Hospital in Melbourne. Currently, he is director of nuclear medicine and mammography at the St. Frances Xavier Cabrini Hospital in Melbourne.

Dr. Klempfner has lectured and published extensively. He has been an enthusiastic teacher and examiner. As secretary general for ISR, Dr. Klempfner helped establish the South Pacific Liaison Committee to improve radiologic practice in the region and assisted in the recent establishment of the Centre of Radiological Excellence in Fiji. As ISR president, he developed the World Council of Radiology. This council, which has representation from all major continental radiology societies, works toward the worldwide integration of radiology education training and qualifications.

■ *For an expanded version of Dr. Klempfner's biography, see the RSNA Meeting Program at rsna2004.rsna.org. Click on Meeting Program in the left-hand column.*

A leader in British radiology, **Brian S. Worthington, M.D.**, has earned the respect of his peers for his significant contributions to MR research.



“Brian pioneered many of the clinical applications of MR imaging in Nottingham

Plenary Sessions

University in England,” said RSNA President Brian C. Lentle, M.D. “He developed productive clinical collaborations with basic scientists. His significance as an investigator was recognized when he was named a fellow of the Royal Society (FRS), an honor rarely bestowed except on the likes of Sir Isaac Newton and Albert Einstein—and never before on a radiologist. He became professor and head of his department and served among the leadership of British and European radiology as well as regularly attending RSNA. Dr. Worthington is a renaissance man with a passionate interest in Icelandic literature.”

In addition to his early pioneering work with MR, Dr. Worthington later contributed greatly to defining the role of ultra-high speed echoplanar imaging in clinical practice.

Dr. Worthington qualified for his M.B.B.S. in 1963 in London and completed a radiology residency at London Hospital, obtaining a Fellowship of the Royal College of Radiologists. After completing his education, Dr. Worthington moved to Nottingham, England, where he was appointed to a newly created post in neuroradiology. He served nearly two decades as professor and head of the Department of Academic Radiology at the Queen’s Medical Centre at Nottingham University, where he has been professor emeritus since 1998.

Dr. Worthington is an inexhaustible researcher and lecturer, and has been a visiting professor in Ireland, Finland and Canada. He has been an RSNA member since 1989.

■ *For an expanded version of Dr. Worthington’s biography, see the RSNA Meeting Program at rsna2004.rsna.org. Click on Meeting Program in the left-hand column.*

Plenary Sessions are highlights of the RSNA Annual Meeting and are open to all registrants.

Saturday

12:00–2:00 p.m.

AAPM/RSNA Physics Tutorial for Residents

- *MR Imaging Physics*

Organized under the direction of Mahadevappa Mahesh, Ph.D.

1:00–5:00 p.m.

NIH Grantsmanship Workshop

2:15–5:15 p.m.

AAPM/RSNA Tutorial on Equipment Selection

- *Computed Tomography*

Organized under the direction of Dianna Cody, Ph.D.

Sunday

8:30–10:15 a.m.

President’s Address

- *Radiology: Beyond Borders*

Brian C. Lentle, M.D., RSNA President

- Dedication of *RSNA Meeting Program* to Sir Godfrey Hounsfield, D.Sc.

- Special Presentation to William R. Eyler, M.D.

- Announcement of RSNA Outstanding Researcher and RSNA Outstanding Educator Awards

Opening Session

- *Globalization of Radiology*

Moderator: George S. Bisset III, M.D.

Lecturer: James H. Thrall, M.D.

10:30 a.m.–3:30 p.m.

Jury Trial

Moderator: Leonard Berlin, M.D.



4:00–4:15 p.m.

Report of the RSNA Research & Education Foundation

Jerry P. Petasnick, M.D., Chairman, RSNA R&E Foundation Board of Trustees

4:15–5:45 p.m.

Image Interpretation Session

Moderator: Burton P. Drayer, M.D.

Panelists: George S. Bisset III, M.D., Michael N. Brant-Zawadzki, M.D., Elliot K. Fishman, M.D., Nancy M. Major, M.D., Georgeann McGuinness, M.D.

Monday

10:30 a.m.–12:00 p.m.

Associated Sciences: Emergent Trends—Global Perspectives

- *Fusion Imaging: Changes in the Way We See Things*

Moderator: Michael F. Hartshorne, M.D.

1:30–2:45 p.m.

Eugene P. Pendergrass New Horizons Lecture

- *Molecular Imaging: From Nanotechnology to Patients*

Michael E. Phelps, Ph.D.

Presentation of Honorary Memberships

Continued on next page

Continued from previous page

- Helen Carty, M.B.B.Ch.,
Liverpool, United Kingdom
- Guy Frija, M.D., Paris, France
- George Klempfner, M.D.,
Toorak, Victoria, Australia
- Brian S. Worthington, M.D.,
Derbyshire, United Kingdom

(see pages 19-21 for honoree biographies)

1:30–2:45 p.m.

RSNA/AAPM Basic Physics Lecture for the Radiologic Technologist

- *Practical Aspects of Digital Radiographic Imaging*

Speakers: S. Jeff, M.S., Charles E. Willis, Ph.D.

1:30–5:45 p.m.

Physics Symposium

- *Intensity-Modulated Radiation Therapy—State of the Art*

Course Co-Directors: Jatinder R. Palta, Ph.D., T. Rockwell Mackie, Ph.D.

4:30–6:00 p.m.

Special Focus Sessions

- *An Approach to the Understanding and Treatment of Lower Extremity Venous Disease*
- *Financial Challenges for Radiologists: New Approaches to Reimbursement and Measuring Value in Our Practice*
- *Securing Our Future by Appropriate Risk Management*
- *Pediatric Neuroradiology: Functional Neuroimaging of the Brain*
- *New Agents for Positron Emission Tomography*
- *A Paradigm Shift: ABR 10-Year Time Limited Certifications and the ABR Maintenance of Certification Program*
- *Pros and Cons of Expert Witness Review*
- *Image-Guided Cancer Therapy: The Present and Future Opportunity*
- *Image Perception: Should We Believe Our Eyes?*
- ASTRO Invited Papers

Tuesday

10:30 a.m.–12:00 p.m.

Associated Sciences: Emergent Trends—Global Perspectives

- *Image Guided Therapeutics*

Moderator: John Kovelski, R.T.(R)(MR)

1:30–2:45 p.m.

Annual Oration in Diagnostic Radiology

- *The Future of Bone Imaging in Osteoporosis*

Harry K. Genant, M.D.

Presentation of Gold Medals

- Alexander Gottschalk, M.D., East Lansing, Mich.
- Seymour H. Levitt, M.D., Minneapolis
- John G. McAfee, M.D., Chevy Chase, Md.

(see pages 17-18 for honoree biographies)

Wednesday

10:30 a.m.–12:00 p.m.

Associated Sciences: Emergent Trends—Global Perspectives

- *Strategic Considerations in Global Teleradiology*

Moderator: Kathryn J. Canny

1:30–2:45 p.m.

Annual Oration in Radiation Oncology

- *Redefining Therapeutic Targets in the Treatment of Soft Tissue Sarcoma*

Brian O'Sullivan, M.D.

- Dedication of lecture to Hywel Madoc-Jones, M.D., Ph.D.

4:30–6:00 p.m.

Oncodiagnosis Panel and Special Focus Sessions

- *3D Imaging: Where are We Headed?*
- *Musculoskeletal Ultrasound: Do We Want to Keep It or Do We Want to Give it Away?*
- *MR Imaging Safety and Implants: Update 2004*
- *Healthcare Policy: Its Effect on the Practice of Radiology in 2004*
- *Cardiac Imaging in the 21st Century: Is Radiology Ready for Primetime?*
- *Breast MR Imaging: New Applications*

- SNM Invited Papers

- *Oncodiagnosis Panel: Lymphoma*

- *Physicians and the Ethics of Advertising*

- *Ischemia: From Head to Toe*

- *Is Medical Simulation a Part of Your Future? Education in the Era of Patient Safety*

Thursday

1:30–1:40 p.m.

Inauguration of the 2005 RSNA Board of Directors

1:40–1:50 p.m.

Introduction of 2005 AAPM Officers and Council Chairs

1:50–2:45 p.m.

RSNA/AAPM Symposium

- *Routine Clinical Proton Spectroscopy: Are We There Yet?*

Moderator: David R. Pickens III, Ph.D.

3:00–4:00 p.m.

Special Focus Sessions

- *Role of Imaging in Development of Therapeutic Drugs*
- *The Radiologist's Workload: How Efficient are We?*
- *Results of the NIH/NHLBI PIOPED II Study: Is Spiral CT the Best and Only Test for Suspected Pulmonary Embolism?*
- *Integration of Imaging and Biomarkers into Clinical Practice*
- SIR Invited Papers
- ASNR Invited Papers

Friday

12:45–3:15 p.m.

Friday Imaging Symposium

- *PET/CT: A Practical Approach*

Moderator: Steven M. Larson, M.D.

Panelists: Homer A. Macapinlac, M.D., Dominique Delbeke, M.D., Richard L. Wahl, M.D., Steven M. Larson, M.D.

More detailed information on RSNA 2004 is available at rsna2004.rsna.org.

Refresher Courses

RSNA 2004 offers 284 refresher courses covering traditional and cutting-edge topics in each subspecialty.

Advanced registration is recommended for all refresher courses. If a particular course is full, attendees may check for the availability of stand-by seating at the classroom location prior to the beginning of the course. For more detailed information or to register for courses, go to rsna2004.rsna.org and click on Registration, Housing, Courses in the left-hand column.

AMA PRA category 1 CME credits and Category A CE credits are available.



Robert A. Novelline, M.D.
Chairman, RSNA Refresher Course Committee

Case-based Review Courses

Three separate daylong case-based review courses are offered again this year. These interactive courses are designed for self-assessment and expansion of knowledge in neuroradiology, interventional radiology and pediatric radiology.

NEW! RFID

Those registered for case-based review courses will be asked to participate in a pilot implementing radiofrequency identification (RFID). Volunteers will be issued a special badge containing an RFID chip. Sensors in the meeting room doorway will record attendee entry and exit. RFID results will allow RSNA to compare the effectiveness and accuracy of its current voucher system and critique forms used for recording CME credits.

RFID could have a wider application in the future. Attendees may eventually have the ability to instantaneously monitor their CME activity, print their CME certificate,

gain access to information of companies visited, etc. As a result, RSNA will be able to further improve the user-friendliness of the meeting.

Essentials of Radiology

This refresher course series is offered in a compact, two-day format for general radiologists, residents and subspecialists who want to review other areas of radiology. Sessions include brain MR, cardiac imaging, gynecologic pelvic imaging, pediatric imaging, urology and imaging of the breast, chest and knee.

Categorical Course in Diagnostic Radiology

Emergency Radiology

Categorical Course in Diagnostic Radiology Physics

Advances in Breast Imaging—Physics, Technology, and Clinical Applications

Refresher Courses Most Popular Component of Annual Meeting

A 2003 survey of RSNA members shows refresher courses are overwhelmingly the most important component of the RSNA Scientific Assembly and Annual Meeting.

When asked to rank a series of activities offered at the meeting, 95.9 percent listed refresher courses as “very important” or “important,” followed by the Essentials of Radiology refresher course series (90.5 percent), plenary sessions (85.7 percent), categorical courses—a series of eight refresher courses on the state of the art in a particular subspecialty—(82.2 percent), and scientific paper sessions (68.4 percent).

RSNA Annual Meeting Components Ranked as Very Important or Important

Refresher Courses	95.9%
Essentials of Radiology	90.5%
Plenary Sessions	85.7%
Categorical Courses	82.2%
Scientific Oral Sessions	68.4%
Interaction with Colleagues	59.7%
infoRAD Tutorials	59.6%
Focus Sessions	47.7%
Computer and Video Exhibits	39.8%
infoRAD Exhibits	39.8%

Source: 2003 RSNA Membership Needs Assessment Survey

More detailed information on RSNA 2004 is available at rsna2004.rsna.org.

Scientific Sessions

Scientific Papers

RSNA 2004 will feature nearly 1,600 scientific papers in 16 subspecialties:

- Breast Imaging
- Cardiac
- Chest
- Emergency Radiology
- Gastrointestinal
- Genitourinary
- Health Services, Policy, and Research
- Musculoskeletal
- Neuroradiology/Head and Neck
- Nuclear Medicine
- Pediatrics
- Physics
- Radiation Oncology and Radiobiology
- Radiology Informatics
- Ultrasound
- Vascular and Interventional

Scientific paper sessions will be held during nine designated time slots during the

week. Seating is on a space-available basis. Those attending a scientific paper session will be able to evaluate the most current research, identify current and future scientific and technologic developments, modify academic and clinical practices, and identify and practice research methods.

AMA PRA category 1 CME credits and Category A CE credits are available.

Invited Papers from Specialty Societies

Scientific papers from four specialty society meetings will be presented at RSNA 2004 in the special focus session format. Invited papers from the American Society for Therapeutic Radiology and Oncology will be presented on Monday. Invited papers from the Society of Nuclear Medicine will be presented on Wednesday. Invited papers from the Society of Interventional Radiology and the American Society of Neuroradiology will be presented on Thursday.



George S. Bisset III, M.D.
Chairman, RSNA Scientific Program Committee

Scientific Poster Sessions

RSNA 2004 will feature 504 posters covering 16 subspecialties. Posters allow attendees to evaluate the most current research, identify current and future scientific and technologic developments, modify academic and clinical practices, and identify and practice research methods.

NEW! Electronic Posters

Scientific posters in neuroradiology and chest radiology are in electronic format. Dedicated computers are available to view these posters. They also will be available for group viewing. See page 31 for more information.



AMA PRA category 1 CME credit is available for some posters on Sunday from 12:30 p.m. to 1:30 p.m., and Monday–Thursday from 12:15 p.m. to 1:15 p.m. during which time authors of the posters will be in attendance.

Posters in neuroradiology and chest radiology will be presented in the scientific poster theaters during the same hours.

Neuroradiology — Theater #1
Chest — Theater #2

Scientific Poster Viewing Hours

Lakeside Center, Level 3, Hall D

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

Education Exhibits

More than 1,100 education exhibits covering 16 subspecialties will be on display at RSNA 2004.

As a result of studying education exhibits, attendees will be able to review the diagnosis of a specific condition using either a single-modality or multimodality approach, identify the state-of-art imaging and methods of treatment of various pathologic conditions, and assess new research on applications of various imaging and therapeutic modalities.

AMA PRA category 1 CME credit is available for some exhibits Monday–Thursday from 12:15 p.m. to 1:15 p.m., at which time an author of the exhibit will be in attendance. **Some electronic exhibits in neuroradiology and chest radiology will be presented in the education exhibit theater at that same time.**

NEW! Electronic Exhibits

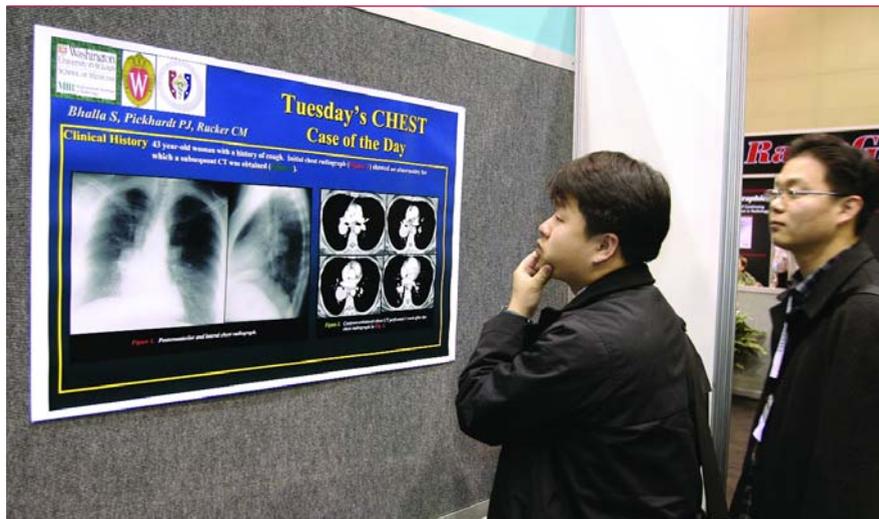
Education exhibits in neuroradiology and chest radiology are in electronic format. Dedicated computers are available to view these exhibits. They will also be available for group viewing. See page 31 for more information.

Cases of the Day

Thirteen new Cases of the Day will be featured daily in the Education Exhibits area. Attendees can submit a diagnosis electronically via the computer terminals at McCormick Place. 0.5 category 1 CME credit is available for each correct diagnosis. Revealed cases remain on display for the duration of the week for continued self-study.



Kerry M. Link, M.D.
Chairman, RSNA Education Exhibits Committee



Education Exhibit Hours

Lakeside Center, Level 3, Hall D

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

Late Night Shuttle Bus

For the convenience of those who wish to study the posters in the evening, shuttle bus service between hotels in the RSNA hotel block and the Lakeside Center shuttle gates is scheduled Monday–Thursday from 7:00 p.m. until 10:00 p.m. Limited food service is also available from area vending machines during the evening, Monday–Thursday.

More detailed information on RSNA 2004 is available at rsna2004.rsna.org.

Technical Exhibits / *infoRAD* Exhibits

The Technical Exhibits at the RSNA Annual Meeting comprise the world's largest medical exhibition. More than 650 leading manufacturers, suppliers, and developers of medical information and technology showcase an impressive array of radiology products and services.



Michael C. Brunner, M.D.
Chairman, RSNA Technical Exhibits Committee



Ronald L. Arenson, M.D.
Chairman, RSNA Electronic Communications Committee

A comprehensive, up-to-the-minute list of the exhibitors, their products and services is available at rsna2004.rsna.org.

A detailed floor plan of the exhibits area will be available in the RSNA 2004 *Daily Bulletin*.

Mobile Computing Pavilion

RSNA will again host a Mobile Computing Pavilion at RSNA 2004. The pavilion will feature a theater area dedicated to educational presentations on mobile computing, daily panel sessions led by industry experts and leaders in the field, and exhibits of leading wireless technologies.

The pavilion will be located on the Technical Exhibits Floor in Hall A, Booth 1337.

infoRAD Exhibits

infoRAD is the area of the annual meeting devoted to computer applications in radiologic education and practice. It includes a technical exhibition and demonstration area in which vendors display and demonstrate their products. Hands-on Computer Workshops will be held in the *infoRAD* area.

infoRAD education exhibits and features at RSNA 2004 include:

- Showcase Exhibit
- Informatics Classroom with IHE, MIRC, and additional courses **NEW!**
- Web Classroom
- NLM/Internet2 Demonstrations
- Hands-on Computer Workshops
- Image Manipulation/Analysis
- Literature Searches/RSNA Journal Searches

- PACS Classroom
- Personal Digital Assistants (PDA)
- Picture Archiving and Communication Systems (PACS)
- Practice Management/Workflow/IHE
- Decision Support/Computer-aided Diagnosis

NEW!

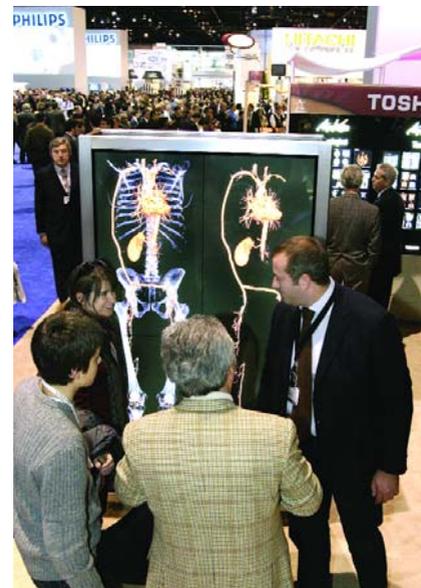
Informatics Classroom

Medical professionals and industry experts will share their knowledge to help improve workflow and information sharing in support of optimal patient care. Courses involving the Integrating the Healthcare Enterprise (IHE) initiative, the RSNA Medical Imaging Resource Center (MIRC), and RSNA manuscript preparation will take place in an updated classroom.

infoRAD Showcase Exhibit

infoRAD will feature a showcase exhibit highlighting user success stories from sites that have implemented various aspects of the IHE initiative and a hands-on exhibit showing an advanced filmless environment based on IHE capabilities.

AMA PRA category 1 CME credit is available for courses in the *infoRAD* Tutorial Classroom, the *infoRAD* PACS Workstation Classroom, the *infoRAD* Web Classroom, and the *infoRAD* Classroom.



Hands-on Computer Workshops: Basic Training for Radiologists

RSNA gives attendees an opportunity to gain valuable insight into the use of computers in radiology from experts in the field. Commercial leaders have reserved classroom space near the *infoRAD*/IHE exhibit area in the Lakeside Center to conduct classes on their respective proprietary computer systems.

The Hands-on Computer Workshops at RSNA 2004 are designed to give radiology professionals first-hand experience in integrating computers into radiology practice.

This year, the participants are AGFA Healthcare, Fujifilm Medical Systems, GE Healthcare, Philips Medical Systems and Siemens Medical Solutions.

For a schedule of events, go to rsna2004.rsna.org/rsna2004/V2004/index.cvn?id=10035&p_navID=377.

CME credit is not offered for these workshops.

Exhibit Hours

Technical Exhibit Hours

Halls A & B

South and North Buildings

Sunday–Wednesday 10:00 a.m.–5:00 p.m.

Thursday 10:00 a.m.–2:00 p.m.

Hands-on Computer Workshops

Hall D

Lakeside Center

Sunday–Thursday 8:30 a.m.–4:30 p.m.

Friday 8:30 a.m.–12:45 p.m.

***infoRAD* Exhibit Hours**

Sunday–Thursday 8:00 a.m.–5:00 p.m.

Friday 8:00 a.m.–12:45 p.m.

More detailed information on RSNA 2004 is available at rsna2004.rsna.org.

Associated Sciences Consortium

The RSNA Associated Sciences Consortium is sponsoring three symposia and eight refresher courses during RSNA 2004. The theme for this year's program is Associated Sciences: Emergent Trends—Global Perspectives.



Jordan B. Renner, M.D.
Chairman, RSNA Associated Sciences Committee

The lectures will be held from 10:30 a.m. until 12:00 p.m. Each is approved for **1.5 AMA PRA category 1 CME credits.**

Monday, November 29

- *Fusion Imaging: Changes in the Way We See Things*

Presented by Michael F. Hartshorne, M.D.

Tuesday, November 30

- *Image Guided Therapeutics*

Moderated by John Koveliski, R.T.(R)(MR)

Liver Tumor Ablation, State of the Art presented by David S. Lu, M.D.

Endovascular Interventions – presented by Wilfrido R. Castaneda-Zuniga, M.D.

Intraoperative MRI: Non-Imaging Issues presented by Stephen G. Hushek, Ph.D.

Wednesday, December 1

- *Strategic Considerations in Global Teleradiology*

Moderated by Kathryn Canny, presentations by Patricia Kroken, William G. Bradley Jr., M.D., Ph.D., and Sanjay S. Saini, M.D., M.B.A.



The Associated Sciences program also includes a series of eight refresher courses, primarily for managers and supervisors of radiology departments and radiologists.

- *Digital Imaging: Computed Radiography and Direct Radiography* **NEW!**
- *HIPAA: Ongoing Impacts and Re-Inventions in Radiology* **NEW!**

- *Will JCAHO's National Patient Safety Goals Make a Difference in the Way You Practice?* **NEW!**
- *Advanced Radiographic Practice*
- *Your Practice Potential with Midlevels*
- *How to Effectively Manage the Capital Asset Cycle: From Acquisition Planning to Maintenance and Replacement Strategies*
- *Workforce Crisis: Strategies for Management*
- *The Digital Department: Its Architecture and Design*

RSNA Education Center Stores

The RSNA Education Center will have two stores at RSNA 2004 to make it easier for attendees to purchase course syllabi, the *RSNA Meeting Program* and other educational materials.

The main store location will be in the Lakeside Center Ballroom, Level 3. A satellite location will be on the Technical Exhibits floor in Hall A, Booth 1100.

Education Center Store	
(Main Location)	
Saturday	12:00 p.m.–6:00 p.m.
Sunday	7:00 a.m.–6:00 p.m.
Monday–Thursday	7:30 a.m.–6:30 p.m.
Friday	7:30 a.m.–1:00 p.m.



RSNA and ACR Will Provide Job Services at RSNA 2004

RSNA Career Connection

Demonstrations and one-on-one assistance with RSNA's online job center, Career Connection (rsna.org/career), will be available at RSNA 2004. Career Connection allows job seekers to post resumes and search for positions. It also allows companies to post job opportunities and search for potential candidates.

The demonstrations will take place in the Technical Exhibition area at booth 1402 in Hall A of the South Building. Demonstrations will also be available at the Membership Booth in the Lakeside Center Ballroom, Level 3.

ACR Professional Bureau

The American College of Radiology (ACR) Professional Bureau will offer its Web-based onsite interview service at RSNA 2004 in Room S102A of the South Building.

Job seekers and employers can go online (www.acr.org) to establish their personal accounts and post their resumes or job advertisements. Each account has its own personal schedule and e-mail system for easy communication between candidate and interviewer.

ACR staff will be available to answer questions. Computers will be available onsite, as well a curtained booth for interviews.



Chicago Welcomes Meeting Attendees

Through the Chicago's "We're Glad You're Here" program, Mayor Richard M. Daley and the Chicago Convention and Tourism Bureau (CCTB) plan a citywide welcome for attendees and exhibitors at the RSNA 90th Scientific Assembly and Annual Meeting. The welcome includes:



- Complimentary *Chicago Tribune* newspapers delivered to each attendee's hotel room. The papers will have a customized wrap highlighting the RSNA schedule-at-a-glance and special offerings/discounts.
- Attractions in Advance calendar highlighting special events and attractions in Chicago during the meeting.

- RSNA and Chicago's "We're Glad You're Here" banners posted in more than 180 locations including O'Hare International Airport and on streets including S. Michigan Ave., Fort Dearborn Dr., Martin Luther King Dr., Columbus Dr., North Water St. and Stetson Dr.
- Welcome Centers available at O'Hare and Midway Airports for information about the City and RSNA.
- Ambassador Meet and Greet program at Terminals One and Three at O'Hare Airport to direct attendees to Welcome Centers.
- Welcome signs displayed throughout O'Hare, at retail outlets, restaurants, cultural attractions and on taxicabs and shuttle buses.



- A free cup of coffee for exhibitors from 2:00-4:00 p.m. in booth 5150 in Hall A and booth 7972 in Hall B.

For more information on CCTB and the City of Chicago, go to www.meetinchicago.com.

WiFi Areas Expanded at RSNA 2004

More wireless access points will be available at McCormick Place during RSNA 2004. These areas will be clearly marked with signs, as well highlighted in detailed floor maps in the Meeting Guide section of the *Daily Bulletin*.

The wireless access points use the 802.11b protocol, known as WiFi. The four WiFi hotspots will be located in:

- Grand Concourse
- Lakeside Center, Grand Ballroom
- Lakeside Center, near Arie Crown Theater
- Lakeside Center, at the far end of the *infoRAD* exhibit area (north end of Hall D2)

RSNA will also provide banks of computer terminals throughout McCormick Place so that attendees have access to online meeting information. Most of this information will be available before, during at after the meeting at rsna2004.rsna.org.

Some of the features include:

Message Center

This is an e-mail facility for communicating with colleagues, exhibitors and others at McCormick Place. Attendees can log in using their badge number. Users outside McCormick Place will be able to send Internet e-mail to attendees by their badge number followed by @showmail.org.

Attendees can assign themselves a password to increase the privacy of messages sent through the Message Center.

Attendees who know the name of their remote POP3 or IMAP mail service will be able to add a temporary account for remote access to their e-mail.

Attendee Locator

This utility is a quick and easy way to find friends and colleagues who are attending RSNA 2004 and the hotels where they are staying.

Virtual Briefcase

The Virtual Briefcase is a personal itinerary planner with which attendees can maintain a list of technical exhibitors (My Exhibits), access a personalized floor plan (My Floor Plan) and create a schedule of sessions selected from the *RSNA Meeting Program*.

Certificate of Attendance

Attendees can use designated computer terminals at McCormick Place to print a personalized certificate of attendance.

Onsite only

RSNA Press Releases

The Media section will include press releases about RSNA 2004 along with daily attendance figures.

Meeting Announcements

A free electronic bulletin board is available for non-profit associations and institutions to post alumni events, course information and educational activities directly related to radiology. Printed or handwritten announcements will not be accepted. All submissions will be reviewed before posting.



NEW!

Electronic Exhibits in Neuroradiology and Chest Radiology

All posters and education exhibits in neuroradiology and chest radiology at RSNA 2004 will be in electronic format.

Dedicated computer terminals will be available in the exhibit halls. Electronic exhibits may also be accessed via the Internet in the WiFi access areas of McCormick Place via rsna2004.rsna.org. Eight theaters will be available for groups to view the electronic exhibits. Each theater has seating for up to 20 people. Group views may be scheduled onsite at a Help Desk or through a docent that will be in the area.

CME Sessions

Electronic education exhibits and electronic posters will have scheduled sessions during which time the authors of the exhibits are in attendance and for which AMA PRA continuing medical education

(CME) credit will be available.

Poster sessions will be held on Sunday from 12:30 p.m. to 1:30 p.m., and Monday–Thursday from 12:15 p.m. to 1:15 p.m. Neuroradiology will be featured in Theater #1; chest radiology will be featured in Theater #2.

Sessions for the education exhibits will be Monday–Thursday from 12:15 p.m. to 1:15 p.m. Authors of some of the electronic education exhibits will participate in these sessions. A schedule will be available in the education exhibit area at the meeting.

During the annual meeting, reviewers for *RadioGraphics* evaluate the education exhibits for possible publication in future

issues of RSNA's peer-reviewed education journal. The electronic exhibits will be included in this process.

Some of the electronic exhibits will also be available for viewing after the meeting at rsna2004.rsna.org.

Late Night Shuttle Bus

For the convenience of those who wish to study the posters in the evening, shuttle bus service between hotels in the RSNA hotel block and the Lakeside Center shuttle gates is scheduled Monday–Thursday from 7:00 p.m. until 10:00 p.m. Limited food service is also available from area vending machines during the evening, Monday–Thursday.

EPOS™ Featured at Six European Radiology Meetings

The Electronic Presentation Online System™ (EPOS), developed by the European Congress of Radiology (ECR), is now a component of six European radiology meetings.

EPOS debuted at ECR 2003. It remains as a permanent online database of scientific and educational presentations. EPOS is accessible to ECR members and first authors of ECR presentations.



In 2003, 891 presentations were available. To date 1,837 presentations are available.

EPOS technology is now also part of the annual meetings for:

- Cardiovascular and Interventional Radiology Society of Europe
- European Society for Magnetic Resonance in Medicine and Biology
- European Society of Musculoskeletal Radiology

- European Society of Gastrointestinal and Abdominal Radiology
- European Society of Head and Neck Radiology

Award-winning electronic exhibits from ECR 2003 were featured at RSNA 2003.

For more information, see *RSNA News* (rsnanews.org), October 2003, page 26; *RSNA News*, November 2003, page 4; and *RSNA News*, November 2003, page 6.

For more information on EPOS, go to www.ecr.org.

RSNA Research & Education Foundation Honors Donors

More than 2,650 individuals and 37 corporations donated more than \$2,043,000 to the RSNA Research & Education Foundation from October 1, 2003, until September 30, 2004.

One way the Foundation is acknowledging these contributions to “Funding Radiology’s Future” is with a Donor Wall at RSNA 2004. In addition, the Pavilion will feature posters honoring Visionaries, members of the President’s Circle and Exhibitor’s Circle, the Vanguard Companies and the 2004 RSNA grant recipients.

NEW!

As the Foundation celebrates its 20th anniversary, a videotaped program showcasing the Foundation’s history and accomplishments will be played on television monitors at the Pavilion and at the spouse/guest lounge in the Palmer House Hilton Hotel. Established in 1984, the RSNA Research & Education Foundation has provided 524 grants totaling more than \$20 million.

The Foundation has several types of giving programs:

Individual

- **Visionaries**—commitments to the Foundation through bequests
- **President’s Circle**—donations of at least \$1,500 per year
- **Individual Donations**—donations of any amount

Corporate

- **Vanguard Program**—endowment of at least \$200,000
- **Exhibitor’s Circle**—donations of at least \$1,000 per year

A full list of corporate sponsors is available online at rsna.org/research/foundation/corporate.html.

R&E Foundation Pavilion

The Foundation Pavilion will be located in the Lakeside Center Ballroom, Level 3. Throughout the annual meeting, the R&E Foundation staff will be available to answer questions and provide information on all of the Foundation’s grant and giving programs. In addition to highlighting the Foundation programs, the R&E Foundation Pavilion will also have information on the RSNA Department of Research programs and the National Institute of Biomedical Imaging and Bioengineering.

Donor Lounge

The Pavilion will also feature a Donor Lounge where R&E Foundation donors can relax, check e-mails, hang their coat or converse with colleagues. Complimentary beverages will be available throughout the day and light refreshments will be available 7:30 a.m.–9:30 a.m., and 2:00 p.m.–4:00 p.m. A white and gold donor ribbon acknowledging a donation to the Foundation is required for entry to the lounge.

Contributions will be accepted onsite at the Pavilion, Donor Lounge and Membership Booth.



R&E Foundation Pavilion

Lakeside Center Ballroom—Level 3

Saturday	12:00 p.m.–6:00 p.m.
Sunday	7:00 a.m.–4:30 p.m.
Monday–Thursday	7:30 a.m.–6:30 p.m.
Friday	7:30 a.m.–1:00 p.m.

R&E Foundation Donor Lounge

Lakeside Center Ballroom—Level 3

Sunday	7:30 a.m.–4:30 p.m.
Monday–Thursday	7:30 a.m.–5:30 p.m.
Refreshments	7:30 a.m.–9:30 a.m. 2:00 p.m.–4:00 p.m. daily
Beverages	Throughout the day

RSNA Research & Education Foundation Grant and Award Recipients

Research Scholar Grant

Smita Patel, M.B.B.S., M.R.C.P., F.R.C.R.

University of Michigan Health System,
Ann Arbor
GE Healthcare Technologies/RSNA Research
Scholar Grant
*ECC-gated 16-slice CT Coronary Angiography:
Comparison with Catheter Coronary Angiography*

Alexander R. Gottschalk, M.D., Ph.D.

University of California, San Francisco
Eastman Kodak Company/RSNA Research
Scholar Grant
*The Role of PTEN Mutations in the Pathogenesis
of Prostate Cancer and Resistance to Therapy*

Joe Chang, M.D., Ph.D.

University of Texas M.D. Anderson Cancer
Center, Houston
Tyco Healthcare/Mallinckrodt/RSNA Research
Scholar Grant
*Radiotherapy Sensitization by Apoptotic Gene
Therapy and Molecular Imaging of Apoptosis in
a Human Lung Cancer Model*

Jingfei Ma, Ph.D.

University of Texas M.D. Anderson Cancer
Center, Houston
Bracco Diagnostics/RSNA Research Scholar
Grant
*Differentiation between Benign and Malignant
Vertebral Compression Fractures with Quantita-
tive Diffusion and Fat MR Imaging*

Christine B. Chung, M.D.

University of California, San Diego
GE Healthcare-Medical Diagnostics/RSNA
Research Scholar Grant
*MR Imaging of Patellofemoral and Femorotibial
Articular Cartilage: Qualitative and Quantitative
Assessment with Ultrashort TE (UTE) Imaging*

Research Fellowship in Basic Radiologic Sciences

Shahriar Yaghoubi, Ph.D.

Department of Radiology and Immunology
Stanford University School of Medicine,
California
Agfa Corporation/RSNA Research Fellowship in
Basic Radiologic Sciences
*Application of Positron Emission Tomography
(PET) for Imaging Cell Trafficking in Adoptive
Immune Cell Gene Therapy of Rheumatoid
Arthritis (RA)*

Michael Rosol, Ph.D.

Childrens Hospital Los Angeles and University
of Southern California Keck School of Medicine
FONAR Corporation/RSNA Research Fellow-
ship in Basic Radiologic Sciences
*Dynamic Tracking of Engraftment and Enhance-
ment of Human Common Lymphoid Progenitor
Cells in vivo Using Bioluminescent Imaging*

Research Fellow Grant

David E. Sosnovik, M.D.

Massachusetts General Hospital, Boston
Agfa Corporation/RSNA Research Fellow Grant
*Imaging of Cardiomyocyte Apoptosis by MRI
Using Magnetic Nanosensors*

Oleg E. Bronov, M.D.

University of Pennsylvania Medical Center,
Philadelphia
Siemens Medical Solutions, Inc./RSNA
Research Fellow Grant
*Accuracy and Reliability of Transcranial Color-
Coded Duplex Sonography in Assessing Degree
of Occlusion of Intracranial Aneurysms After
Endovascular Coiling*

Research Resident Grant

Jeffrey S. Anderson, M.D., Ph.D.

University of Utah, Salt Lake City
Cesare Gianturco/RSNA Research Resident
Grant endowed by Cook Inc.
*Functional Magnetic Resonance Imaging of
Multiple Sclerosis*

Sean Collins, M.D., Ph.D.

Georgetown University, Lombardi Cancer
Center, Washington, D.C.
RSNA President's Circle Research
Award/Research Resident Grant
*BRCA1 Regulation of Cellular Radiation
Sensitivity via Modulation of the Ubiquitin/
Proteasome System*

Srini Tridandapani, Ph.D., M.D.

University of Michigan, Ann Arbor
Siemens Medical Solutions, Inc./RSNA
Research Resident Grant
*Achieving Optimal Gating for Cardiac Computed
Tomography*

Paolo Nucifora, M.D., Ph.D.

University of Pennsylvania, Philadelphia
Philips Medical Systems/RSNA Research
Resident Grant
*Imaging Cerebral Connectivity: A New Avenue
in the Diagnosis of Schizophrenia*

Benjamin Tubb, M.D., Ph.D.

Johns Hopkins School of Medicine, Baltimore
Toshiba America Medical Systems, Inc./RSNA
Research Resident Grant
*Targeted MR Contrast Agents for Quantitative
Assessment of Pancreatic Beta Cell Mass*

Research Seed Grant

Heike E. Daldrop-Link, M.D.

University of California, San Francisco
Medical Center
Berlex Laboratories/RSNA Research Seed Grant
*Visualization of Stem Cell Differentiation and
Gene Expression Using a Galactosidase-sensitive
Contrast Agent for Magnetic Resonance Imaging*

Fengming Kong, M.D., Ph.D.

University of Michigan, Ann Arbor
FUJIFILM Medical Systems/RSNA Research
Seed Grant
*A Pilot Study to Evaluate the Impact of Func-
tional Images on Predicting Local Tumor Control
and Lung Toxicity in the Treatment of Non Small
Cell Lung Cancer*

Mamudeep Karanvir Singh Kalra, M.B.B.S., M.D., D.N.B.

Massachusetts General Hospital, Boston
Hitachi Medical Systems/RSNA Research Seed
Grant
*A Basic Research Study to Evaluate the Distribu-
tion, Localization And Pharmacokinetics of a
New PET Radiopharmaceutical Agent 18-F Flu-
orothymidine in Subjects with Pancreatic Cancer*

Holman Pathway Research Resident Seed Grant

John D. MacKenzie, M.D.

Brigham & Women's Hospital, Boston
Philips Medical Systems/RSNA Holman
Pathway Research Resident Seed Grant
*Fusion of Magnetic Resonance and Molecular
Imaging to Quantify Inflammatory Arthritis*

David G. Kirsch, M.D., Ph.D.

Massachusetts General Hospital, Boston
Philips Medical Systems/RSNA Holman
Pathway Research Resident Seed Grant
*Combining Anti-angiogenesis Therapy with
Radiation Therapy for the Treatment of Lung
Cancer in Mice*

Dong Wook Kim, M.D., Ph.D.

Vanderbilt University Medical Center, Nashville
Varian Medical Systems/RSNA Holman Pathway
Research Resident Seed Grant
*Molecular Profiling of Head and Neck Squamous
Cell Cancer to Determine Predictive Markers of
Response to Radiation and Receptor Tyrosine
Kinase Inhibitor Therapy*

John P. Plastaras, M.D., Ph.D.

University of Pennsylvania, Philadelphia
Toshiba America Medical Systems, Inc./RSNA
Holman Pathway Research Resident Seed Grant
*Role of Phosphatidylinositol 3-Kinase/Akt
Signaling in Radiation-Induced Apoptosis*

Daniel Allan Hamstra, M.D., Ph.D.

University of Michigan, Ann Arbor
Philips Medical Systems/RSNA Holman
Pathway Research Resident Seed Grant
*In vivo Imaging of p53 Activation During
Chemoradiotherapy as a Tool to Understanding
Normal Tissue Toxicities*

Medical Student Departmental Program Grant

Department of Radiological Sciences

David Geffen School of Medicine at UCLA

Chairman: Dieter R. Enzmann, M.D.
Scientific Advisor: Theodore R. Hall, M.D.
Student: Ahmed El-Sherief
RSNA Medical Student Departmental
Program Grant

*Teaching Radiology to Medical Students: Longi-
tudinal Radiology Clerkship versus a Two-Week
Core Radiology Clerkship*

Continued on next page

RSNA Research & Education Foundation Grant and Award Recipients

Continued from previous page

Department of Radiological Sciences David Geffen School of Medicine at UCLA

Chairman: Dieter R. Enzmann, M.D.
Scientific Advisor: Lawrence W. Bassett, M.D.
Student: Dawn Michael
RSNA Medical Student Departmental Program Grant

Contributions of Diagnostic Imaging in the Evaluation of the Clinically Abnormal Breast

Department of Radiology University of Southern California Keck School of Medicine, Los Angeles

Chairman and Scientific Advisor: Edward G. Grant, M.D.

Student: Benjamin K. Hom
Philips Medical Systems/RSNA Medical Student Departmental Program Grant
Evaluation of the Use of Ultrasound Contrast Agent, Optison, in Liver, Pancreas or Renal Transplantation

Department of Radiology Louisiana State University Health Sciences Center – Shreveport

Chairman and Scientific Advisor: Horacio D'Agostino, M.D.
Student: Martin Pilat
FUJIFILM Medical Systems/RSNA Medical Student Departmental Program Grant
Central Pancreatic Fluid Collection: Surgical or Percutaneous Drainage?

Department of Radiation Oncology Washington University, St. Louis

Chairman: Carlos A. Perez, M.D.
Scientific Advisor: Perry W. Grigsby, M.D.
Student: Julie Schwarz
Philips Medical Systems/RSNA Medical Student Departmental Program Grant
Identification of Molecular Markers Associated with Poor Prognosis in Hypoxic Tumors of the Uterine Cervix

Department of Radiology Massachusetts General Hospital, Boston

Chairman: James H. Thrall, M.D.
Scientific Advisor: Udo Hoffmann, M.D.
Student: Ayaz Mohammad Rahman
Canon U.S.A., Inc./RSNA Medical Student Departmental Program Grant
Progression of Coronary Artery Calcium by MDCT

Department of Radiology, Section of Radiation Oncology Baylor College of Medicine, Houston

Chairman: Michel E. Mawad, M.D.
Scientific Advisors: John E. McGary, Ph.D., and Bin S. Teh, M.D.
Student: Karen Shahar, M.S.E.
Section Chief: E. Brian Butler, M.D.
Philips Medical Systems/RSNA Medical Student Departmental Program Grant
Dose-Volume Assessment of Late Rectal Bleeding in Prostate Cancer Patients Treated with Definitive Intensity Modulated Radiation Therapy (IMRT)

Department of Radiation Oncology University of Texas Health Science Center – San Antonio

Chairman: Terence S. Herman, M.D.
Scientific Advisor: Marin Fuss, M.D., Ph.D.
Student: David Hiller
RSNA Medical Student Departmental Program Grant
Executive Control Function as a Measure of Cognitive Function Deficits in Patients Receiving Cranial Irradiation

Department of Radiology Northwestern University Medical Center, Chicago

Chairman: Eric J. Russell, M.D.
Scientific Advisor: F. Scott Pereles, M.D.
Student: James A. Gehl
RSNA Medical Student Departmental Program Grant
Comparison of MRI versus X-Ray Guided Renal Angioplasty in Swine

University of Vermont College of Medicine, Burlington

Special thanks to Massachusetts General Hospital department of radiology for research facilities and scientific guidance:
Chairman: James H. Thrall, M.D.
Scientific Advisor: Mannudeep K. Kalra, M.B.B.S., M.D., D.N.B.
Student: Tejas Dalal
RSNA Medical Student Departmental Program Grant
Radiation Dose Optimization for CT Scanning

Medical University of South Carolina, Charleston

Chairman: Philip Costello, M.D.
Scientific Advisor: Claudio J. Schonholz, M.D.
Student: Josh Hubbard
RSNA Medical Student Departmental Program Grant
The Effect of Transjugular Intrahepatic Porto-Systemic Shunts on Serum Serotonin Levels, and the Role of Serotonin as a Marker of Post-Procedure Complications

Educational Scholar Program Grant

W. Robert Lee, M.D., M.S.
Wake Forest University School of Medicine, Winston-Salem, N.C.
Philips Medical Systems/RSNA Educational Scholar Program Grant
Development and Validation of a Radiation Oncology Assessment System (ROAS)

World Wide Web-Based Educational Program Grant

Charles Robert Russell Hayter, M.D., F.R.C.P.
Joyce Marion Nyhof-Young, Ph.D.
Toronto Sunnybrook Regional Cancer Centre
GE Healthcare Technologies/RSNA World Wide Web-Based Educational Program Grant
Development of a Virtual Elective in Radiation Oncology

Linda Lanier, M.D. Co-investigators: Chris Siström, M.D., and Richard Rathe, M.D.

University of Florida College of Medicine, Gainesville
RSNA World Wide Web-based Educational Program Grant
Curriculum in Radiology Reporting: An interactive Web-based Educational and Assessment Program in Communication Essentials

International Radiology Education Program Grant to "Teach the Teachers" from Emerging Nations

Maurice M. Reeder, M.D.
Uniformed services University of the Health Sciences, Bethesda
RSNA International Radiology Education Program Grant to "Teach the Teachers" from Emerging Nations
"Teaching the Teachers" Initiative for Tropical Imaging Training in Africa

Barry B. Goldberg, M.D.
Thomas Jefferson University Hospital, Philadelphia
RSNA International Radiology Education Program Grant to "Teach the Teachers" from Emerging Nations
"Teaching the Teachers" Initiative for Ultrasound Training in Latin America (Caribbean, Central and South America)

Institutional Clinical Fellowship in Cardiovascular Imaging

**Department of Radiology
Stanford University Medical Center, California**
Department Chair: R. Brooke Jeffrey, M.D.
Scientific Advisor: Geoffrey D. Rubin, M.D.
2004-05 Fellow: Mark D Hiatt, M.D.
RSNA Institutional Clinical Fellowship in Cardiovascular Imaging
Cardiovascular Imaging Fellowship

**Department of Radiology
Cleveland Clinic Foundation**
Chairman: Michael T. Modic, M.D.
Scientific Advisor: Richard D. White, M.D.
2004-05 Fellows:
Brett B. Carmichael, M.D., National Naval Medical Center, Bethesda
Ali Islam, M.D., B.Sc., University of Western Ontario, London
GE Healthcare-Medical Diagnostics/RSNA Institutional Clinical Fellowship in Cardiovascular Imaging
Cardiovascular Tomography Fellowship Program



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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 **July 28 – August 30, 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.

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Dale W. Sponaugle, M.D.
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Julie Timins, M.D.
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Janice & John M. McMurray, M.D.
William S. Morrow, M.D.
Patricia & William W. Olmsted, M.D.
Louise & Perry G. Pernicano, M.D.
Gregory W. Petermann, M.D.
Philip C. Pieters, M.D.
Marvin Platt, M.D.
Jack B. Rampton, M.D.
Stanley B. Reich, M.D.
Justo Rodriguez, M.D.
Marilyn J. Siegel, M.D. & Barry A. Siegel, M.D.
Troy R. Smith Jr., M.D.
D. John Wester Jr., M.D.

BRONZE (\$1 - \$199)

John C. Baxter, M.D.
Joyce & James B. Beard, D.O.

Juanita & Harold A. Bjork, M.D.
Marjorie & Carl W. Boyer Jr., M.D.
Shalom Buchbinder, M.D.
Jacqueline & Laurence Chaise, M.D.
Jenni & Kirk W. Davis, M.D.
Colin P. Derdeyn, M.D.
Charles H. Eid, M.D.
Edward J. Farnlett, M.D.
James B. Fitzgerald, M.D.
Rose & Ezekiel Freed, M.D.
Andreas Giger, M.D.
Steven J. Goldstein, M.D.
David S. Hartman, M.D.
Francine & Jay P. Heiken, M.D.
Herbert Illiasch, M.D.
Stephen Victor Klein, M.D.
Raymond J. Kyriakos, M.D.
Barbara & Paul J. Leehey III, M.D.
Howard I. Lopata, M.D.

Jamie & Thomas R. McCauley, M.D.
Patricia J. Mergo, M.D.
Terence D. O'Connor, M.D.
Albert W. Quan, D.O.
Elizabeth & Francisco A. Quiroz, M.D.
Dolores & David L. Ritter
Clark L. Searle, M.D.
Leanne L. Seeger, M.D.
William A. Shipley, M.D.
Edith & Lloyd H. Smith, M.D.
Mary & Edward V. Staab, M.D.
Susan & Richard J. Sukov, M.D.
Carol & Frank J. Szarko, M.D.
Linda P. Thomas, M.D.
Stanford B. Trachtenberg, M.D.
Salvatore G. Viscomi, M.D.
Cissy & William F. Weller, M.D.
Gary J. Whitman, M.D.
Beverly & Steven J. Zuckerman, D.O.

Program and Grant Announcements

NEW!

BIROW 3 Registration Opens October 11

Registration begins October 11 for the third Biomedical Imaging Research Opportunities Workshop (BIROW 3), which will be held March 11–12, 2005, in Bethesda, Md.



Biomedical Imaging Research Opportunities
WORKSHOP 3

The goal of the workshop is to identify and explore new opportunities for basic science research and engineering development in biomedical imaging, as well as related diagnosis and therapy. This year's topics include:

- Cell Trafficking
- Informatics Solutions in Imaging
- Guiding Therapy by Multimodality Imaging
- Medical Imaging Technology: From Concept to Clinic

AMA PRA continuing medical education (CME) credits and medical education physics continuing education credits (MPCEC) are available. For program information or to register, go to www.birow.org.

BIROW 3 is sponsored by RSNA, Academy of Radiology Research, American Association of Physicists in Medicine, American Institute for Medical and Biological Engineering, and Biomedical Engineering Society.

Personal Financial Management Strategies Sessions

RSNA is offering two personal financial management strategy sessions on Saturday, November 27, 2004, at McCormick Place in Chicago. These sessions are prior to RSNA 2004. These seminars do not qualify for AMA category 1 credit and **there will be no sales pitch.**

Protecting Assets from Creditor Claims, Including Malpractice Claims

10:00 a.m. – 12:00 p.m.

Includes textbook written specifically for the course!

Presented by Barry Rubenstein, B.S., J.D., L.L.M., this seminar includes comprehensive illustrations to help physicians decide when and how to use asset protection techniques, as well as distinguish the advantages, disadvantages, benefits and risks of numerous strategies.

Protecting Assets From Creditor Claims \$129

Effective Real Estate Investment Strategies

1:00 p.m. – 5:00 p.m.

Includes textbook written specifically for the course!

Whether your interest is passive, low involvement investing or hands-on, fully involved investing, you will leave this course with the confidence and skills needed to identify investment real estate that meets your goals. The course, presented by J. Michael Moody, M.B.A., demonstrates that the opportunities and benefits of real estate far outweigh the effort and risk.

Effective Real Estate Investment Strategies \$159

Both Courses \$269

For more information or to register, go to rsna.org/education/shortcourses/index.html.

RSNA R&E Foundation Grant Deadlines

- Education Grants: January 10
- Research Grants: January 15

For more information, go to www.rsna.org/research/foundation or contact Scott Walter at (630) 571-7816 or swalter@rsna.org.

Radiology in Public Focus

A press release has been sent to the medical news media for the following scientific article appearing in the October issue of *Radiology* (rsna.org/radiologyjnl):

Intraoperative High-Field Magnetic Resonance Imaging: Implementation and Experience with the First 200 Patients

Intraoperative imaging with simultaneous neuronavigational guidance can be successfully integrated in the operating environment.

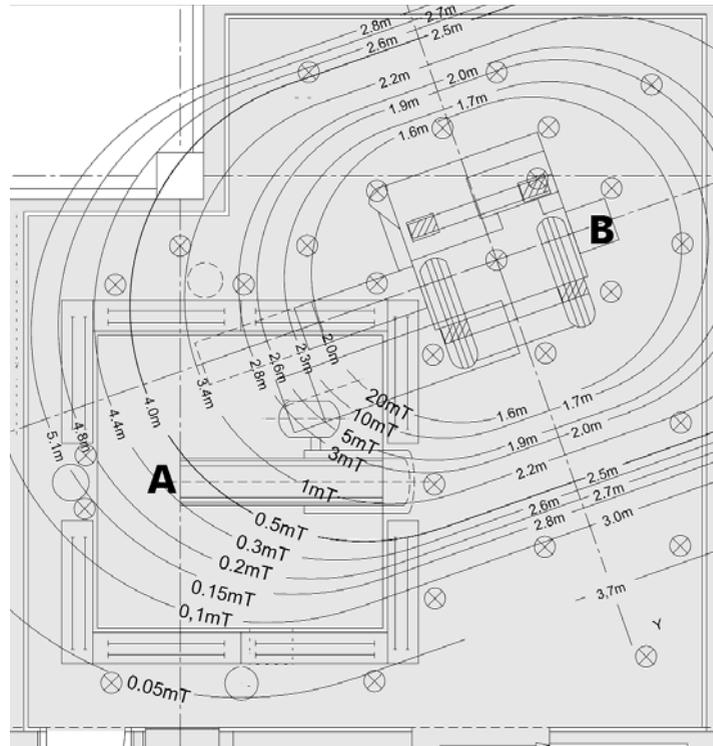
Christopher Nimsky, M.D., and colleagues from the University Erlangen-Nürnberg in Germany incorporated a 1.5 T MR scanner, equipped with a rotating operating table, in a radiofrequency-shielded operating theater. A navigation microscope placed in the 5 G zone in combination with a ceiling mounted navigation system enabled integrated microscope-based neuronavigation.

After studying 200 patients undergoing brain surgery, mainly for gliomas and pituitary tumors, the researchers found that intraoperative

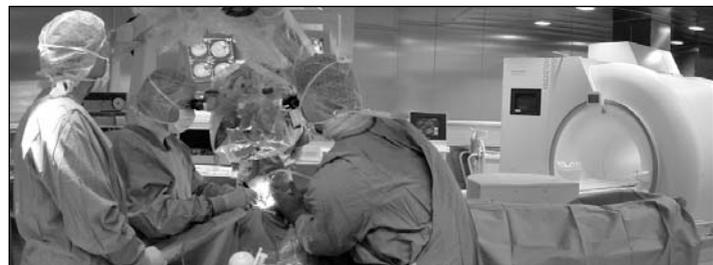
MR imaging provided valuable information about the extent of a resection, allowing an intraoperative modification of the surgical strategy.

“Careful consideration of the indications for use of this complex and expensive technology, accurate cost-benefit analyses and investigations into the long-term effects of intraoperative MR imaging, especially with respect to tumor recurrence and, in gliomas, time to progression, as well as life expectancy, will be essential in the near future,” the researchers write.

They add that intraoperative high-field MR imaging could also become an important part of vascular surgery, spinal surgery and robot-assisted surgery.



Floor plan of operating theater shows two possible operating positions: at 0.5-mT line, with full use of the microscope-based navigation system (A); and in high magnetic field, with use of fully MR-compatible instruments only (B).



Panoramic photograph shows operating theater during glioma surgery with the microscope-based navigation system.

(*Radiology* 2004;233:67-78) © 2004 RSNA. All rights reserved. Printed with permission.



RSNA press releases are available at
www.rsna.org/media.

Journal Highlights

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

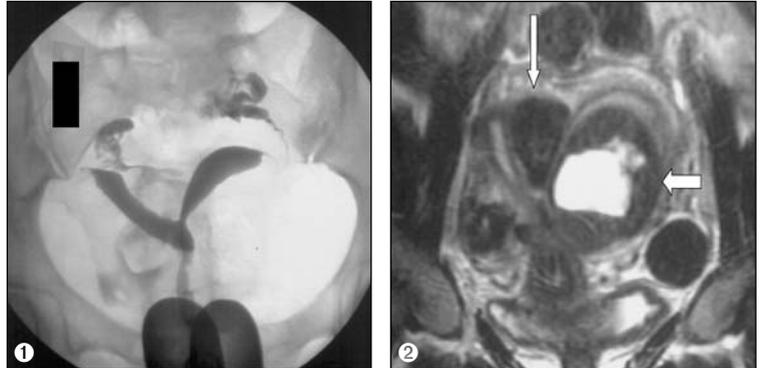
Müllerian Duct Anomalies: Imaging and Clinical Issues

Müllerian duct anomalies encompass a wide spectrum of clinical and imaging findings. While many of the anomalies will be diagnosed initially at hysterosalpingography or 2D ultrasound, further imaging with MR and potentially 3D ultrasound will often be required for a definitive diagnosis.

Radiology

In an article in the State of the Art section of the October issue of *Radiology* (rsna.org/radiologyjnl), Robert N. Troiano, M.D., from Weill Medical College of Cornell University, and Shirley M. McCarthy, M.D., Ph.D., from Yale University School of Medicine, explain why müllerian duct anomalies are clinically important, particularly in women who present with infertility. They also discuss the importance of understanding the differences between uterovaginal anomalies and reporting certain anomalies, particularly those with features of more than one class.

"MR imaging currently is the study of choice because of its high accuracy and detailed elaboration of uterovaginal and ovarian anatomy," they write. "Laparoscopy and hysteroscopy are then reserved for women in whom interven-



Septate uterus. ① HSG image shows wide divergence of opacified endometrial cavities simulating a bicornuate configuration. ② Corresponding coronal oblique fast spin-echo T2-weighted MR image (6000/120 [effective]) demonstrates insinuated leiomyoma (long arrow) within the septum, causing exaggerated separation of cavities. Note lateral wall myoma with cystic degeneration (short arrow) also causing distortion of left endometrial cavity.

(*Radiology* 2004;232:19-34) © 2004 RSNA. All rights reserved. Printed with permission.

tional therapy is being undertaken, thus reducing health care expenditures and sparing women invasive diagnostic procedures."

This article also includes "Essentials" or highlighted points to help busy readers recognize important information at a glance.

Reconsideration of Pacemakers and MR Imaging

The technological evolution of the pacemaker is challenging the dogma of prohibiting pacemakers in the MR imaging environment.

In the September-October issue of *RadioGraphics* (rsna.org/radiographics), John Loewy, M.D., from the Department of Medical Imaging at Humber River Regional Hospital in Toronto, and colleagues review:

- Changes in pacemaker technology
- Case and anecdotal reports
- Results of large prospective clinical trials

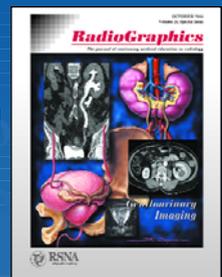
RadioGraphics

The researchers write: "Preliminary evidence from controlled trials suggests that patients with a demand pacemaker can be studied under carefully controlled conditions, especially in areas more distant from the chest such as the brain and the knee. Surely the time has come when individually tailored MR imaging examinations may be considered for pacemaker patients. ... Is it not time that the radiology community engaged in a large multicenter trial to settle this matter with scientific rigor?"

(*RadioGraphics* 2004;1257-1267)

Special October Issue

Each year, *RadioGraphics* releases a special monograph issue on an imaging subspecialty. This year, the theme is genitourinary imaging. The 2004 monograph issue



features 15 articles, some of them on hot topics such as contrast media and CT urography. The issue also features thought-provoking editorials and commentary.

The issue is also available to RSNA members and *RadioGraphics* subscribers at rsna.org/radiographics.

Working For You

Exploring Your Future in Radiology

RSNA will again sponsor the Exploring Your Future in Radiology career day program for Chicago Public High School students at the RSNA annual meeting. The program provides students with the opportunity to learn more about radiology and related career opportunities through lectures, hands-on workshops, career presentations and tours of technical exhibits. Students will also have the opportunity to compete for scholarships from RSNA.



About 40 Chicago Public High School students participate annually. This year's program will be held on Thursday, December 2.

Welcome New Attendees

First-time attendees of the annual meeting will receive a "Welcome New Attendees" kit. It contains a variety of literature designed to make RSNA 2004 a more user-friendly experience, such as maps of Chicago and McCormick Place, a list of frequently asked questions and answers, information about important educational components of the meeting, a *Pocket Guide*, an RSNA membership application, and other items.



I was hired when the new RSNA Headquarters Building was still under construction. It was an invaluable experience being able to see the inner workings of the building before occupancy in October of that same year. I was able to learn from the many contractors working on the facility about the numerous aspects of my job.

Working for you PROFILE

SERVICE TO MEMBERS:

Since the RSNA Headquarters Building is a multi-tenant facility, my areas of responsibility include servicing building tenants, RSNA staff and RSNA members as they visit the facility. My assistant and I take care of all maintenance activities, such as building or workspace requests, and write specification sheets when the facility needs work, including remodeling, maintenance and repair.

I am the liaison with the Village of Oak Brook, which means I take care of all village requirements including certifications for elevators, RPZ valves, construction, life safety,

etc. I am the building OSHA and EPA coordinator, which includes writing, monitoring and training for the life safety system, the emergency power and lighting system, evacuation procedures, indoor air quality, fire prevention, emergency response, hazard communication, etc. I also administer the building's automated external defibrillator program, which includes quarterly training of all RSNA staff and tenant rescuers.

Building security also falls under my domain. I administer and monitor the security system, which includes a key card system, building security cameras and parking deck duress stations.

WORK PHILOSOPHY:

I feel my main responsibility is to create a work environment that fosters productivity. People who do not have to worry about their workspace being comfortable have more time to think about their job, making them more productive.



I am a person who is dedicated to each individual. I know the importance of immediate response to someone's needs, and strive to that end. I also know the importance of saving money for building tenants. That is why my assistant and I perform as many jobs "in-house" as possible, saving thousands of dollars annually for RSNA and its tenants.

NAME:
Michael Zawaski
POSITION:
Facility Manager
WITH RSNA SINCE:
June 1998

If you have a colleague who would like to become an RSNA member, you can download an application at 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.

Product News

FDA APPROVAL

Mammography Diagnostic Workstation

The U.S. Food and Drug Administration (FDA) has approved Agfa's IMPAX® Mammography Diagnostic Workstation.

Designed to enhance the way mammography images are retrieved, displayed, archived and distributed, IMPAX is a multi-modality workstation that delivers "one-stop" review and results distribution for digital breast-imaging studies, while also gaining access to other general imaging exams.

IMPAX incorporates ultra-high resolution and high contrast monitors for softcopy diagnosis of breast images.

"The FDA clearance of Agfa's IMPAX Mammography Diagnostic Workstation provides mammography departments a proven digital solution to streamline workflow, maximize their return on investment and improve the delivery of patient care," said Carrie Handley, global manager for women's care at Agfa. "For the more than 32 million American women who will receive a mammogram this year, this could mean improved access, faster results and an improved patient care continuum."

FDA APPROVAL

Full-Field Digital Mammography System

The FDA has also approved MAMMOMAT® NovationDR, a full-field digital mammography system from Siemens Medical Solutions. MAMMOMAT NovationDR provides digital screening, diagnosis and stereotactic biopsy capabilities—all in one system.

MAMMOMAT NovationDR features an innovative flat panel detector based on amorphous Selenium (aSe) detector technology that enables a direct conversion of x-ray to digital information. With an image detector size of 25 x 29 cm, MAMMOMAT NovationDR also enables imaging of a larger range of patient sizes and the system features a new paddle designed for easier and more comfortable patient positioning.

"The MAMMOMAT NovationDR offers a comprehensive solution for modern mammography," said Holger Schmidt, president of the Siemens Medical Solutions Special Systems Division. "Thanks to the combination of proprietary detector technology and our unique x-ray tube, both image quality and dose exposure reduction achieve an optimum level."



NEW PRODUCTS

Ultra-Compact Cameras Released

Princeton Instruments has unveiled its new PIXIS™ line of deep cooled spectroscopy and imaging CCD cameras. These ultra-compact cameras use cutting-edge technology to deliver -100°C cooling and read noise as low as 2.5 electrons root mean squared (e-rms).

The cameras can be used for a variety of low-light applications such as Raman spectroscopy, fluorescence spectroscopy and semi-conductor research.

"PIXIS is a milestone in high performance spectroscopy and imaging technology," said Frank Mummolo, president of Princeton Instruments. "With compact single head design and USB 2.0 interface, the ease of use of this camera is unmatched in the industry."

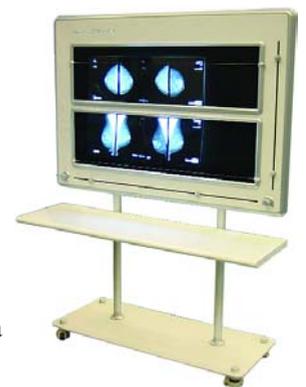


NEW PRODUCT

New Flat Panel Illuminator for Mammography

Broadwest's new LumiVue™ flat panel illuminator utilizes the latest and most effective features available in mammography viewing. Through a unique cold cathode fluorescent lamp, LumiVue provides a brightness of 8,000 cd/m² and a useful life that is several times longer than other fluorescent lamps.

LumiVue's backlight technology employs the highest daylight color temperature for improving contrast rendering and providing a uniformity greater than 90 percent.



News about RSNA 2004

Final Advance Registration for RSNA 2004

North American attendees who register by **November 12, 2004**, will receive their badge wallets in the mail prior to RSNA 2004. Badge wallets contain a name badge, course tickets and attendance vouchers.

Badge wallets will be sent to attendees from outside of North America if their registration forms are received by **October 29, 2004**. International registration forms received October 30 – November 12 require badge wallet pick-up at McCormick Place, Lakeside Center, Level 2, Hall E, Desk A.

To begin the registration process, download the advance registration information from www.rsna.org. Click on the annual meeting logo, then on Registration, Housing and Courses in the left-hand column, then on Brochure.

You can also have the information faxed to you:

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

Once you have the registration information, there are four easy ways to complete the registration process:

1 Internet

Go to www.rsna.org. Click on the annual meeting logo. Click on Registration, Housing and Course Enrollment, and then click on Internet Registration.

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 reginfo@rsna.org.

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

Onsite Registration

Those who registered in advance may wear their badge and proceed into the exhibit and education areas. Those who need to register onsite should proceed to the Lakeside Center, Level 2, Hall E.

Saturday (Nov. 27)

12:00 p.m. – 6:00 p.m.

Sunday–Monday (Nov. 28–29)

7:00 a.m. – 6:00 p.m.

Tuesday–Thursday (Nov. 30–Dec. 2)

7:00 a.m. – 5:00 p.m.

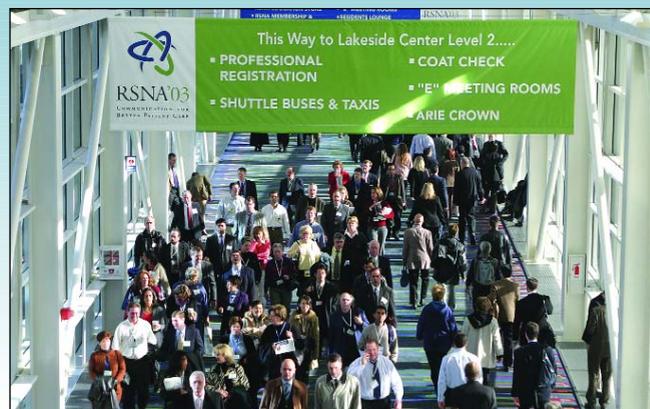
Onsite registration on Friday, December 3 will be in the Lakeside Center, Level 3, Ballroom Help Center from 7:30 a.m. to 12:00 p.m.

Housing Deadline is November 8

The deadline for housing reservations and changes through RSNA is **November 8, 2004**. After that date, you can contact the hotel directly. For more specific information, go to rsna2004.rsna.org and click on Registration, Housing, Courses in the left-hand navigation bar.

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



Important Information for RSNA 2004



ExpoCard™

Each registrant will receive an ExpoCard™ in their badge wallet. An attendee's contact information is stored electronically on the card. So in lieu of a business card, participants can request product information from technical exhibitors by allowing them to swipe their ExpoCard.

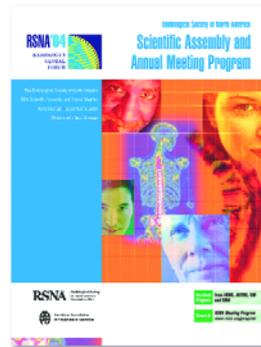


Pocket Guide

The RSNA 2004 badge wallet will include the *Pocket Guide*. This pocket-size booklet provides "must-have" information to navigate in and around McCormick Place such as:

- Room numbers for scientific sessions, refresher courses and plenary sessions
- Floor plans for McCormick Place
- Map of Chicago
- Transportation information

Copies will also be available in the registration area and at the Help Centers.



RSNA Meeting Program

The *RSNA Meeting Program* is a comprehensive guidebook offering abstracts and important information on plenary sessions, special awards and honors, scientific paper and poster presentations, refresher courses, education exhibits and *inforAD* exhibits. A copy will be mailed to RSNA members who requested it in advance of the meeting.

For members who did not request an advance copy, a ticket stub will be included in their badge wallet to pick up the *RSNA Meeting Program* at the RSNA Educa-

tion Center Store. Additional copies of the *RSNA Meeting Program* will be available to RSNA members for \$10 each. New copies are available for \$45 each.

The online *RSNA Meeting Program* is available at rsna2004.rsna.org. The online version makes it quick and easy to search and customize your schedule at RSNA 2004. For a visual tutorial on how to use the online program, see page 45.



Daily Bulletin

The *Daily Bulletin* is the official newspaper of the RSNA Scientific Assembly. Published Sunday through Thursday, the newspaper is available at various areas of McCormick Place.

The center section of the paper, Meeting Guide, includes floor plans of the exhibit and meeting areas, as well as an alphabetical listing of exhibitors with their contact information and booth numbers.



Tours & Events Brochure

The *Tours & Events* brochure has been mailed to registered spouses, to those participating in tours and events in 2002 and 2003, and by request. The brochure will also be available at the Tours and Activities Desk, located in the Help Center, Grand Concourse, Level 3. To download it, go to rsna2004.rsna.org and click on Tours & City Events in the left-hand column. The Advance registration deadline is November 12, 2004.



Important Information for RSNA 2004

Camp RSNA 2004

Onsite childcare will be available during RSNA 2004 through ACCENT on Children's Arrangements. (www.accentoca.com). Camp RSNA 2004 will be open Sunday–Friday for children ages six months to 12 years. Full-day and half-day rates are available. For more information, call (504) 524-0188 or send an e-mail to registration@accentoca.com.

Children under the age of 16 are not permitted at the RSNA Scientific Assembly. Children are allowed only in the designated childcare areas at McCormick Place. Children will be allowed to use the RSNA shuttle bus service.

International Attendees

Interpreters are available at registration and the Help Centers to answer questions for international attendees.

Earn up to 80.5 category 1 CME credits at RSNA 2004

Transportation

A free Metra Train System pass will be included in the badge wallet for use during the seven days of RSNA 2004. RSNA shuttle buses are also available to transport attendees to and from McCormick Place. For detailed information about getting to and through Chicago, as well as transportation schedules, go to rsna2004.rsna.org and click on Transportation in the left-hand column.

One-Day Badge

A one-day badge is available to view the technical exhibits area only. The badge can be purchased in advance or onsite for \$300 at the Exhibitor Registration Desk. Attendance for more than one day requires a full conference purchase at Professional Registration, Lakeside Center, Hall E, Level 2.



90th Scientific Assembly and Annual Meeting
November 28 – December 3, 2004
McCormick Place, Chicago

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 rsna.org, e-mail reginfo@rsna.org, or call (800) 381-6660 x7862.

RSNA 2004 Exhibitor News

Exhibitor Guest Vouchers

Each exhibiting company will be issued guest vouchers when their booth badges are mailed in November. These vouchers cannot be distributed to physicians or medical physicists. **It is the responsibility of the exhibitor to distribute these vouchers directly to their guests.** At the Professional Registration Desk in the Lakeside Center, Level 2, Hall E, guests may obtain a complimentary Technical Exhibits one-day badge by turning in their guest voucher plus a business card and a completed professional registration form (available onsite).

Final Exhibitor Mailing

The primary contact at each exhibiting company will receive a package in early November that will include the *Pocket Guide*, *Exhibitor Information Guide*, *RSNA Meeting Program* vouchers and pertinent updates on registration and exhibitor functions.



Exhibit Space Summary

As of September 24, 2004, total exhibit space sold was 448,250 square feet with 641 companies registered to exhibit including 110 first-time companies.

Important Exhibitor Dates for RSNA 2004

October 13	Deadline for submission to <i>Daily Bulletin</i> New Products section RSNAnet Early-Bird Deadline
October 15	Exhibitor-appointed Contractor request deadline
October 29	Exhibitor advance badge request deadline Deadline for housing changes and cancellations Deadline for Exhibitor Individual Housing Forms and Suite Requests Deadline for Function Space Requests
November 12	Deadline for Exhibitor Badge Order Form Technical Exhibit Space Assignments close
Nov. 28–Dec. 3	RSNA 90th Scientific Assembly and Annual Meeting



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

RSNA.org

Plan Your RSNA 2004 Schedule Online

Customizing your schedule for RSNA 2004 is easy through the online *RSNA Meeting Program*.

Go to *rsna2004.rsna.org* and click on Meeting Program in the left-hand column. ❶

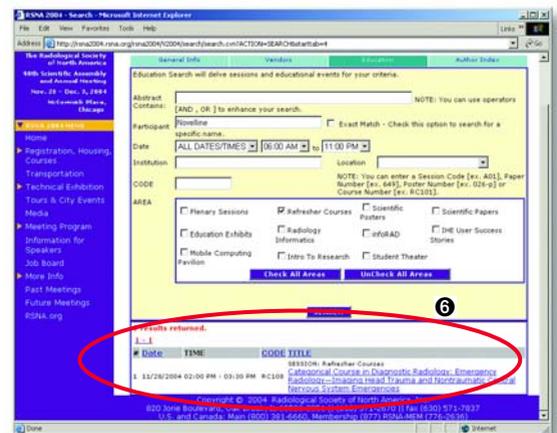
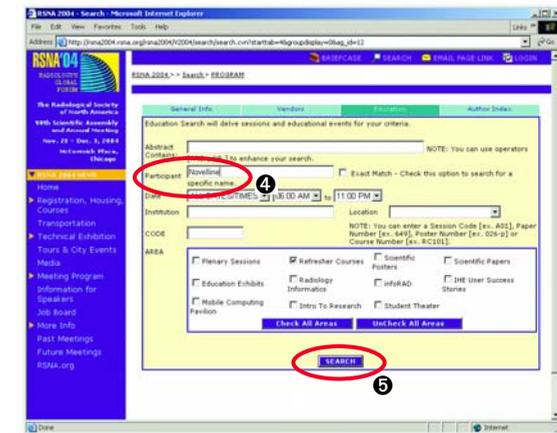
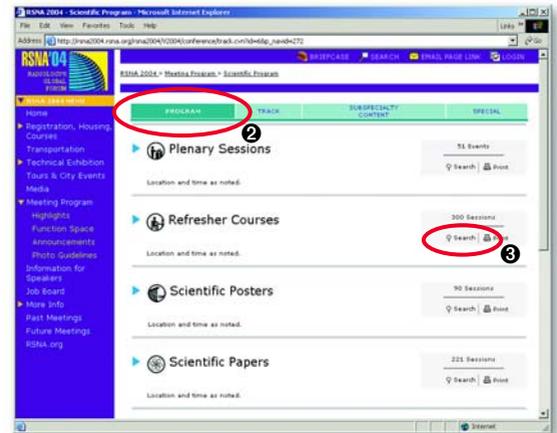
You have a number of options. You can search by program type, course track, subspecialty content or special presentation using the horizontal tabs.

For example, if you would like to search the nearly 300 available refresher courses, click on the Program tab at the top. ❷ (In many cases, the Program tab will already be active.) Then click on Search. ❸

You can search by text in the abstract, date and time of the presentation, institution, location or a presenter's name.

If you want to search for courses taught by Refresher Course Chairman Robert A. Novelline, M.D., type in Novelline under Participant ❹ and then click the purple search button. ❺

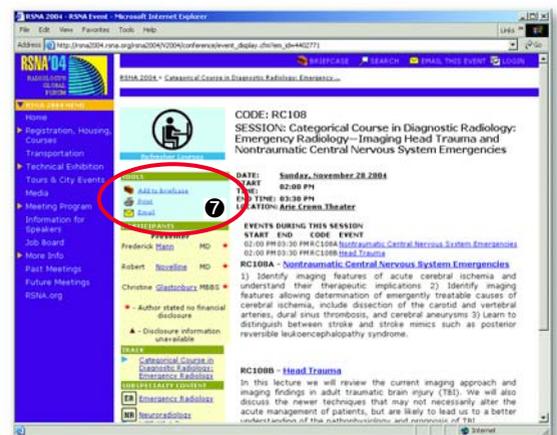
The results will appear at the bottom of your screen. By clicking on the course title ❻, you will be able to review all of the details of the course, including the abstract, subspecialty content codes, available continuing medical education credits, and much more.



Under Tools ❷, you can print the information, e-mail it to a colleague or load it into your Virtual Briefcase.

NEW!

All attendees who have pre-registered for courses will find that their pre-registered courses are already loaded in their virtual briefcase.



Chicago Restaurants Dish Up Something for Everyone at RSNA 2004

AFTER A full day of scientific presentations at RSNA 2004, meeting attendees and their families can get a taste of Chicago through its wide selection of restaurants. Additional information about Chicago and its many interesting tourist attractions is available from the Chicago Convention and Tourism Bureau Web site at www.meetinchicago.com/rsna.

An RSNA Tours & Events brochure is also available at rsna2004.rsna.org. Click on Tours and City Events in the left-hand column. Information about dining and Chicago events is also available at the Tours and Activities Desk, located in the Help Center, Lakeside Center Ballroom, Level 3, and at the Palmer House Hilton hotel.

437 RUSH

437 N. Rush; (312) 222-0101

Italian steakhouse, a block off Michigan Ave., offers steak, lobster and Italian fare in a classic room.

Expensive

AVEC

615 W. Randolph St.; (312) 377-2002

Popular enough to be able to enforce a no-reservation policy, Avec packs diners into banquettes made of cedar. For those who wish to experiment with the wine list, many interesting vintages are available by the glass or small carafe. Rustic cheeses and in-house made sausages are specialties. Big meat dishes like pork shoulder and fish stew share the menu with tapas-sized dishes like fried sardines with ham and dates stuffed with chorizo and wrapped with bacon.

Avec is loud, raucous and tasty.

Expensive

AVENUES

108 E. Superior; (312) 573-6754

This elegant, leather-accented restaurant has a view of Chicago's famous Water Tower. Avenues restaurant lifts seafood to new heights with offerings of European fish served in the French style. Some fish are boned tableside, adding an extra level of drama. Game and red meat as well as dessert also receive expert treatment.

Very Expensive

BECCO D'ORO

160 E. Huron; (312) 787-1300

Dim lighting, beautiful art and real Italian waiters add a touch of romance to this Streeterville restaurant. Five types of risotto are offered daily along with creative pastas, seafood presentations and veal. The heaping seafood salad and the unique flaming dessert parfait are highly recommended.

Expensive

BEN PAO

52 W. Illinois; (312) 222-1888

The décor of this elegant Asian restaurant is dramatic—artistically lit black slate and red accents are juxtaposed with cascading water and still pools. Vegetarians will delight in the

menu, which also features seafood, duck, beef and chicken. In addition to the classic Chinese dishes, the imaginative Asian entrees should be given equal consideration. Small starter dishes, including creative satays, are also available for those who like to taste and share. *Moderate*

BICE RESTAURANT

158 E. Ontario St.; (312) 664-1474

The Chicago sister of the well-known Manhattan Bice, home of the power lunch, is also a see-and-be-seen restaurant one block east of Michigan Ave. The art deco rooms are painted in warm Tuscan ochers, golds and oranges. Wonderful pastas compete with seafood and game in contemporary Italian presentations. Premium wines can be found in the wine-by-the-glass list as well as on the regular wine list. *Expensive*

BIGGS STEAKHOUSE, SEAFOOD & WINE CELLAR

1150 N. Dearborn St.; (312) 787-0900

Prime steaks with great side dishes are served in Bigg's Victorian mansion near Rush and Division. The building and interiors are interesting enough by themselves to recommend an evening at Biggs. The restaurant delivers big wines and classic French sauces with plump cuts of meat, fish and Maine lobster. A basement level wine cellar offers a lighter menu and a selection of cheese and chocolate as well as live entertainment. *Expensive*

BIG BOWL

6 E. Cedar; (312) 640-8888

60 E. Ohio; (312) 951-1888

A casually elegant Asian restaurant with good vibes. A large, square bar fronts the dining room; an open kitchen occupies the back. *Moderate*

BLACKBIRD

619 W. Randolph; (312) 715-0708

Trendy hot spot serves contemporary American cuisine with seasonal emphasis. *Expensive*

BOKA

1729 N. Halsted St.; (312) 337-6070

BOKA offers an American menu

under a unique fabric stretched ceiling that is more art than interior decor.

The theme here is seafood: start with the seared Maine scallops with cauliflower puree, or tartar of Atlantic salmon, or if you are an oyster fan, the raw bar makes an excellent choice for appetizers. Main courses include traditional steak, chicken and lamb, but back to the seafood: the pan-seared grouper is outstanding. *Expensive*

BRASSERIE JO

59 W. Hubbard St.; (312) 595-0800

Authentic French in every way, Brasserie Jo serves patrons wonderful French brasserie favorites such as steak frites, endive and blue cheese salad, escargot, steak béarnaise and six preparations of fish, all accompanied with wonderful wines. High ceilings and French music transport you to Chef Jean Joho's Parisian vision, where a warm baguette greets diners at their table. The staff is attentive and educated and the food is phenomenal. *Moderate*

BUTTERFIELD 8

713 N. Wells; (312) 327-0940

Dramatic lighting and 21st century décor are juxtaposed by the classic cuisine served in this luxurious restaurant with terrific service. The menu selections include veal schnitzel, steak tartar and shrimp de Jonghe. The bar is trendy, and the people watching is fabulous. Butterfield 8 is a quick cab ride from downtown hotels. *Expensive*

CALITERRA

633 N. St. Clair; (312) 274-4444

California meets Italy in this lovely restaurant with views of both the open kitchen and the city. With no outside signs, Caliterra is a hidden treasure. Activity revolves around Caliterra's woks, brick ovens and grills, where the chef combines Italian and California ingredients and cooking styles. Guests are welcome to finish the night with a visit to the piano bar. Located in the Wyndham Chicago Hotel, one block off Michigan Avenue, this versatile restaurant also serves breakfast. *Expensive*

CAPE COD ROOM

140 E. Walton; (312) 787-2200

The venerable Drake Hotel's Cape Cod Room serves fresh seafood in a comfortable, cozy setting. The décor is reminiscent of a seaside saloon.

Expensive

CAPITAL GRILLE

633 N. St. Clair; (312) 337-9400

One block from Michigan Avenue, the Capital Grille offers the best of steak house experiences. Enscenced in the dark wood and leather interior, complete with oil paintings, waiters dressed in white aprons offer robust wines, oversize steaks and side orders as large as entrees. This is a restaurant for a hearty appetite. *Expensive*

CHICAGO CHOP HOUSE

60 W. Ontario; (312) 787-7100

The 1,400 photos displayed throughout the three-level restaurant feature musicians, meat purveyors, city fathers, gangsters and every Chicago mayor. The first level is available to cigar, pipe and cigarette smokers; the second floor main dining room is cigarettes-only; the third-floor "Skybox," is nonsmoking. A pianist performs in the evening in the first-level room. *Expensive*

CHILPANCINGO

358 W. Ontario; (312) 266-9525

Filled with colorful Mexican art, this restaurant serves gourmet Mexican cuisine. *Moderate*

CHINA GRILL

230 N. Michigan; (312) 345-1000

A haven for trendy city-hoppers, the new Hard Rock Hotel gave new life to the neglected Carbide and Carbon Building, which actually looks like it was built out of carbon and carbide. Stop by for a drink at Hard Rock's Base bar or dinner at the China Grill, an Asian-influenced restaurant scheduled to open just in time for RSNA 2004. *Moderate*

CHOCOLATE BAR AT THE PENINSULA HOTEL

108 E. Superior St.; (312) 337-2888

Heaven on Earth for some and cer-

tainly not an experience to be duplicated; the Peninsula hotel offers a magnificent \$20 chocolate buffet on Friday and Saturday evenings. From 8:00 p.m.–12:00 a.m., the Chocolate Bar offers a dozen chocolate choices from strawberries (dipped in it) to truffles (made from it). Best of all, it is an all you can eat buffet; an absolutely perfect way to end the evening after dinner downtown. Steps from Michigan Avenue. *Moderate*

CITÉ

505 N. Lake Shore Dr.; (312) 644-4050
For those who want to experience the sophisticated side of Chicago, Cité is a can't-miss choice. Situated on the rooftop of Lake Point Tower, Cité offers French/Italian fare and is one of the few Chicago establishments to require jackets in both restaurant and bar. The waiters wear tuxedos, and the food is first-class and the elegant experience is unforgettable. *Very Expensive*

COCO PAZZO

300 W. Hubbard; (312) 836-0900
Tuscan cuisine served in fabric-draped studio, complete with a beautiful bar. *Expensive*

CONNIE'S PIZZA

151 E. Wacker; (312) 565-3661
2373 S. Archer Ave.; (312) 326-3443
This Windy City favorite serves serious pizza. *Inexpensive*

D. KELLY

623 W. Randolph St.; (312) 628-0755
A mostly American menu offers international delights including salmon gravlax, foie gras and beef carpaccio. Foodies agree that dessert is a must at D. Kelly. The décor consists of photographs and art by local Chicago artists, warming the exposed brick walls and maple floors. *Expensive*

D'VINE RESTAURANT & WINE BAR

1950 W. North; (773) 235-5700
Sleek wine bar serves a fusion of French, Asian and Mediterranean influenced dishes. *Expensive*

ERAWAN

729 N. Clark; (312) 642-6888
This new Gold Coast gem uses Western ingredients to artistically update classic Thai dishes. For instance, venison is featured instead of beef or chicken in an otherwise traditional Thai satay. The carefully selected wine list allows for top-notch wine and food combinations. Try the degustation menus with matching wine selections. The glasses and china are imported from Bangkok. *Very Expensive*

EVEREST

440 S. LaSalle; (312) 663-8920
Enjoy the Alsatian emphasis in the French cuisine served on the 40th floor with a dramatic city view, unless the clouds are low. This ele-

gant restaurant competes with Ambria and Charlie Trotter's for sophisticated dining. *Very Expensive*

FOGO DE CHÃO

661 N. LaSalle St.; (312) 932-9330
Fogo de Chão is a Brazilian "churrascaria"—all-you-can-eat meat carved tableside. Waiters dressed as gauchos carry long skewers of chicken, filet mignon, leg of lamb, pork loin, pork ribs, rump steak and sausages from table to table. Brazilian beef has a much grainier texture and more pronounced flavor than American beef. The fixed-price dinner also includes a 30-item salad bar, which can be ordered as a meal. Side dishes include black beans, cheese puffs, fried bananas, fried yucca, garlic mashed potatoes, polenta and rice. *Expensive*

FOLLIA

953 W. Fulton Ave.; (312) 243-2888
Food and fashion unite at this charming Italian restaurant in the market district. Chef owner Bruno Abate serves unpretentious timeless Italian risottos, pastas and entrees with everything cooked to order. Follia's windows are decorated with mannequins wearing haute couture designed by local college students. The clothing and art are available for purchase. *Moderate*

FUSE

71 E. Wacker Dr.; (312) 462-7071
The critics love Fuse. One look inside tells you why; even the architecture of the stunning interior has received raves. Offerings lean toward the rich and interesting. The signature dish of Fuse is seared foie gras served with bittersweet chocolate sauce. Where else can one find caramel cognac gelato or venison in coffee-pepper sauce? For those who want to experience a flashy, expensive and interesting city dining experience, Fuse is a great choice. *Very Expensive*

GENE & GEORGETTI

500 N. Franklin; (312) 527-3718
This classic steakhouse in the River North neighborhood is thoroughly lacking in pretension and offers the best steaks available in the city. Ungarnished steaks are served by waiters who appear to have worked at the restaurant since its inception. This is authentic Chicago—expect to hear thick Chicago accents and perhaps catch sight of a local alderman. *Expensive*

GINO'S EAST OF CHICAGO

633 N. Wells; (312) 943-1124
Considered one of the top 10 pizzerias in the nation, Gino's East provides the most authentic Chicago-pizza dining experience available. The Chicago school of pizza-making places the sauce on top, with the ingredients and cheese underneath. Gino's slices weigh in at nearly 1/2 pound, so order your size carefully. *Inexpensive*

GIOCO

1312 S. Wabash Ave.; (312) 939-3870
Gioco serves a big-portioned contemporary Italian feast in a Prohibition-era speakeasy. The simple menu is in line with a trattoria, offering tortellini, beef and octopus carpaccios, pizza, veal scaloppini, rabbit, mussels, and seafood. Conveniently close to McCormick Place and downtown hotels. *Moderate*

GRILLROOM CHOPHOUSE AND WINE BAR

33 W. Monroe; (312) 960-0000
Wet-aged Certified Angus Beef is the specialty at this Loop/Theater District steakhouse. A variety of non-beef selections including pasta, lamb and seafood are also available. The location and the flexibility of the service make this restaurant a good choice for a pre-theater dinner or drink. The Grillroom offers an amazing selection of 40 wines by the glass. *Expensive*

THE GRILL ON THE ALLEY

909 N. Michigan; (312) 255-9009
The Westin Hotel's rendition of the famous Beverly Hills Grill on the Alley serves large steaks, prime rib and seafood in a clubby leather-bound atmosphere. Simple sauces and signature salads are mainstays. Decorated with hundreds of pieces of art, the room is old fashioned with high-backed booths and professional service. A pianist plays nightly in the large lounge. *Expensive*

HACKNEY'S PRINTERS ROW

733 S. Dearborn; (312) 461-1116
This local pub is located in one of the oldest buildings in the south Loop Printers Row neighborhood. The location and neighborhood are as famous and historic as the Hackney-burger. Try the popular deep-fried onion loaf with one of Hackney's many imported tap beers, which include Harp, Bass, Stiegl Pils and Tucher Hefe Weiss. *Inexpensive*

HEAT

1507 N. Sedgwick; (312) 397-9818
The ultimate in fresh sushi and sashimi cut to order sometimes from live fish swimming in the three salt-water tanks. *Expensive*

HEAVEN ON SEVEN ON RUSH

600 N. Michigan; (312) 280-7774
Spicy Cajun and Creole dishes are served in an equally stimulating room steps from Michigan Avenue, up a steep escalator. Not fancy, but the "feed me" fixed price menus, dependent on the whims of the chef, provide an unforgettable experience. Sunday features a New Orleans Jazz Brunch. *Moderate*

HOUSE OF BLUES

329 N. Dearborn St.; (312) 923-2000
Folk art meets European theater design in Chicago's spectacular House of Blues. The House of Blues

is all about entertainment, including the House of Blues restaurant, which hosts a blues stage seven nights a week. However, the outsider art is entertainment in itself. The Cajun food offers a great selection and is a perfect fit with the décor—hot and spicy. Make advance reservations for the unforgettable Sunday Gospel Brunch. *Expensive*

JAPONAIS

600 W. Chicago Ave.; (312) 822-9600
One of Chicago's hottest new restaurants, Japonais combines industrial and chic in its huge, elegant dark wood/red brick interior in a converted industrial building. The interior is so stunning it was featured in *Interior Design* magazine. Japonais offers traditional Japanese sushi, Kobe beef carpaccio, smoked duck, chestnut-encrusted chicken stuffed with shiitake rice and, to finish, the Tokyo Tower—a huge helping of ice cream, sorbets and cookies. *Expensive*

JOE'S SEAFOOD, PRIME STEAK AND STONE CRAB

60 E. Grand; (312) 379-5637
This Miami offshoot serves Florida stone crab claws with mustard sauce and steaks in a dining room decorated with vintage black and white photographs. *Expensive*

KEVIN

9 W. Hubbard; (312) 595-0055
Kevin delivers an excellent fusion of Asian and French cuisine in a marvelous interior space. Asian influences distinguish the contemporary dining room. Shoji screens, brick walls and hardwood floors blend as beautifully as the cuisine. *Expensive*

LE COLONIAL

937 N. Rush; (312) 255-0088
Located in the heart of Chicago's Rush Street nightlife district, this French-Vietnamese masterpiece features a look back in time to colonial Vietnam. Sugar cane wrapped shrimp, sea bass and filet mignon grace this sophisticated menu. *Expensive*

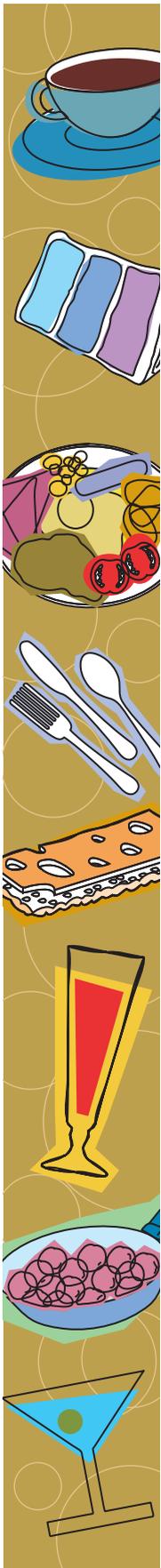
LE LAN

749 N. Clark St.; (312) 280-9100
This restaurant invokes thoughts of Vietnam, when the French colonists brought their cuisine with them and discovered that French fare complements the Asian flavors of Vietnam like a hand in a glove. Le Lan offers a casual but well thought-out space decorated in the traditional colors of Vietnam—browns, greens and black onyx. Vietnamese spring rolls, foie gras flan, smoked squab, crispy-skinned duck, Vietnamese sea bass and poached lobster are some of the dishes offered in this two-story, intimate building. *Moderate*

LES NOMADES

222 E. Ontario; (312) 649-9010
Flawless French food served in a

Continued on next page



Continued from previous page

downtown mansion. This elegant restaurant's picturesque entrance is so entrancing that it is occasionally used as the setting for movie scenes. The interior is cozy, warm and inviting. *Very Expensive*

MARCHE

833 W. Randolph; (312) 226-8399
Over-the-top décor makes this French restaurant a popular "see and be seen" spot. Be prepared for loud, techno music. *Expensive*

MCCORMICK & SCHMICK'S

41 E. Chestnut; (312) 397-9500
This West Coast import is all about fish. The menu offers what is probably the entire day's available catch in Chicago, along with the required token red meat items. Oysters are the house specialty. The dining rooms are clubby with dark wood paneling and dim lighting. Request a booth. The popular bar serves lighter fare and a late-night menu. Located one block off Michigan Avenue, behind Fourth Presbyterian Church and in the heart of Rush Street's nightlife. *Moderate/Expensive*

MORTON'S, THE STEAKHOUSE

1050 N. State; (312) 266-4820
The King of steakhouses is famous for its steak and lobster. Located in the center of Chicago's nightlife area. *Expensive*

MK, THE RESTAURANT

868 N. Franklin; (312) 482-9179
Creative contemporary dishes superbly offset by this stylish restaurant. Exposed bricks and beams reflect the building's past as a paint factory. *Expensive*

MOLIVE'

107 E. Delaware; (312) 573-6300
Enjoy this comfortable setting for a California-Mediterranean influenced menu one block away from Bloomingdale's. *Expensive*

MOTO

945 W. Fulton Market Ave.; (312) 491-0058
Absolutely unique. Chef Homaro Cantu has created a restaurant with an off-the-scale creativity quotient. A custom-designed utensil holds aromatic herbs to add the perfect scent to begin the first course of sashimi tuna, which is only the first of many unexpected twists on traditional service and presentation. Tasting menus of seven or 10 courses are offered. Each course is very small, so it is best to opt for the 10-course menu. Moto leans toward raw food, which, by chef Cantu's definition, is food that never sees temperatures above 108 degrees. Each course is presented with some inventive twist, be it a frozen icee of fennel and celery or bass cooked at the table at a very low temperature in a box built by Cantu himself. *Very Expensive*

NAHA

500 N. Clark; (312) 321-6242
This bright, minimalist restaurant is making a hit with its Mediterranean-influenced American offerings. *Expensive*

NICK'S FISHMARKET

51 S. Clark St.; (312) 621-0200
This Loop favorite has fruit reductions and Asian accents to complement the exceptional seafood and fish. The service is outstanding. *Expensive*

NINE

440 W. Randolph St.; (312) 575-9900
Nine is a steak and seafood restaurant with one of the most interesting and remarked-upon decors in Chicago. Prepare for a visual experience highlighted by the free use of stainless steel, mirrors and expensive wood. No expense was spared; even those that require a champagne and caviar bar serving beluga by the ounce will feel at home. The upstairs Ghost bar serves a must-try specialty martini, the Ghostini and plays loud techno music for those inclined to retire for a trendy nightcap after dinner. Nine is a good place to celebrity-watch, sightings of professional athletes are not uncommon. *Expensive*

NOMI

800 N. Michigan; (312) 239-4030
The most noteworthy design element in this minimalist, French restaurant is the phenomenal view of North Michigan Avenue and Lake Michigan. *Very Expensive*

NORDSTROM CAFÉ

520 N. Michigan; (312) 464-1515
This stylish cafeteria has revived many an exhausted shopper. Lunch spots in the newly designated North Bridge section of Michigan Avenue are limited; so don't forget this oasis when visiting Nordstrom or the Shops at Nordstrom. *Inexpensive*

ONE SIXTYBLUE

160 N. Loomis; (312) 850-0303
Sophisticated contemporary cuisine served to a sophisticated clientele in a setting to match. *Expensive*

OPERA

1301 S. Wabash Ave.; (312) 461-0161
"Hip-hop Asian" with clean flavors and dramatic presentations sum up Opera. This four-star restaurant is not something one can experience in a Chinese carry out-box. Interesting sauces—spring onion, five-spice salt and sweet/sour chili sauce—and thoughtful presentations make Opera a unique experience. Draped silk, quilted chair backs, exotic light fixtures and Chinese screens add an undertone of drama to dinner. Opera's South Loop building formerly warehoused film reels, which left small, romantic niches cleverly filled with tables. *Expensive*

THE PALM

323 E. Wacker; (312) 616-1000
Mammoth prime steaks, lobsters and drinks grace the tables at this popular steakhouse. House specialties include lobster, New York strip, porterhouse and filet. Hint: reserve your jumbo lobster ahead of time to guarantee availability. The traditional seafood appetizers are well worth sampling. The Palm's personality comes from having walls that are covered with portraits of patrons—the famous as well as the unknown—and cartoons. *Expensive*

PARK GRILL

11 N. Michigan Ave.; (312) 521-7275
Chicago's answer to New York's Tavern on the Green, the Park Grill is located in the heart of Chicago's new and magnificent Millennium Park. Floor to ceiling windows allow diners a great view of the ice skaters and Michigan Avenue. The menu is American and unpretentious, featuring a double-cut pork chop with port sauce and bone-in rib eye. The Park Grill is a pre-theater favorite, especially among the symphony crowd. Its central location is unbeatable. *Expensive*

PETTERINO'S

150 N. Dearborn; (312) 422-0150
Located in the southeast corner of the new Goodman Theatre building, Petterino's specializes in quality pre-theater steaks, chops, pastas and salads. The room and the food are both substantial. Dim lighting artistically blends the dark woods and red leather interior into a comfortable, recognizably 1940s Loop-style restaurant. To further celebrate the authentic Chicago style and atmosphere, order the shrimp de jonghe, an original Chicago dish. The restaurant takes its name from Arturo Petterino, the famous former Pump Room maitre d'. *Expensive*

PILI PILI

230 W. Kinzie St.; (312) 464-9988
This combination bistro-style dining room and casual café has French Provençal flair with Mediterranean influences from North Africa and Morocco. Named after the North African chili pepper, Pili.Pili's specialties include charcuterie, rustic breads, steak frites, steamed mussels and stuffed sea bass. This River North restaurant serves food all day in the café and lunch and dinner in the dining room. Wines are available by the glass, bottle or flight. The Pili.Pili pastis is included in the extensive list of French aperitifs. *Moderate*

PIZZERIA UNO

29 E. Ohio St.; (312) 321-1000
Sixty years of Chicago pizza experience culminates in one great pizza tradition split between two downtown Chicago mansions. Pizzeria Uno and

Due are across the street from each other at the intersection of Ohio and Wabash. Chicagoans and tourists alike appear to believe the pizza is worth the wait. The basement level Pizzeria Uno has a dark, bar-like environment, while Due's rooms are lighter. Express lunch is available at both restaurants. *Inexpensive*

PLUTON

873 N. Orleans St.; (312) 266-1440
This highly acclaimed new restaurant offers an interesting twist on prix fixe dining. Typically prix fixe means the diner chooses the number of courses and the chef determines the menu. At Pluton, if you decide on the tasting menu, you may choose four, five, six or 10 courses. A four or five course selection offers the choice of individual dishes. There is no limitation on your choices. A typical meal may start with Maine lobster salad with sea asparagus, pineapple-pear chutney and grapefruit sorbet to be followed by plancha-seared foie gras with lemon curd, roasted beets and micro greens with a main course of bone marrow-crusted beef tenderloin and porcini mashed with roasted shallots. *Very Expensive*

PRAIRIE RESTAURANT

500 S. Dearborn; (312) 663-1143
Prairie features everything that is great about the midwestern prairie from game and produce to Prairie School accents and Mission-style furniture. Interesting twists can be found on classic midwestern comfort foods as well as inspiring beef and game dishes. *Expensive*

RHAPSODY

65 E. Adams; (312) 786-9911
This beautiful restaurant is conveniently tucked inside Symphony Center with an outside entrance on Adams Street. The conservatory-style dining room is accentuated with towering plants and filled with lovers of food, wine and the arts. Amidst the hustle and bustle of the Loop, Rhapsody's dining room opens onto a downtown rarity, a lovely, hidden garden. *Expensive*

RL RESTAURANT RALPH LAUREN

115 E. Chicago; (312) 475-1100
Ralph Lauren designed a restaurant that is consistent with his American-style clothing and home accessories. The room is clubby, comfortable and dark. The front bar's mahogany paneling is slightly upstaged by the bookcases and Ralph Lauren-style furniture. The menu is upscale American with Italian accents. The beef is from cattle carefully bred on the actual Lauren ranch. Do not miss out on the memorable desserts. *Expensive*

ROOM 22

22 E. Hubbard St.; (312) 527-4900
Serving a contemporary American cuisine, the menu includes Prosciutto di Parma with melon and golden baby beets with feta cheese, main course choices include short rib of beef and potato pave with wild mushroom, and the creative pepper crusted yellow fin tuna with red pepper marmalade. Room 22 becomes a night club/lounge late night on Thursdays, Fridays and Saturdays with DJ entertainment.

Expensive

ROSEBUD

1500 W. Taylor; (312) 942-1117
A memorable Italian meal served in a comfortable, upscale setting.

Moderate

ROSEBUD STEAKHOUSE

192 E. Walton; (312) 397-1000
Rosebud's bone-in filet has won the hearts of Chicago steak enthusiasts. Excellent Italian preparations of chicken, lamb and seafood are also available. The clubby room with its dark wood paneled walls and red leather booths and chairs is a favorite haunt of Chicago's Mayor Daley and other local politicians. The wine list offers a selection of Italian and American wines. Located behind the Drake, Rosebud is in a quiet pocket of the elegant north Streetwork neighborhood.

Expensive

ROY'S

720 N. State; (312) 787-7599
Hawaiian fusion cuisine, which combines French and Asian cooking techniques, includes hibachi-grilled salmon, blackened tuna and barbecued baby back ribs. Expert wine and food pairings are offered. The bar and a special section of the dining room offer a view of the exhibition kitchen.

Expensive

RUMBA

351 W. Hubbard St.; (312) 222-1226
This upscale Latin fusion restaurant offers a taste of Cuba, Puerto Rico and South American cuisine. Rumba's Nuevo Latino fare is served in a room reminiscent of the Tropicana nightclub. Thursday thru Sunday late night guests can tango to live Latin music and occasionally see professional dance performances. Tropical cocktails are a favorite among the sophisticated lounge crowd. Try a "caipirinhas" or a "chocolatada." *Expensive*

RUSSIAN TEA TIME

77 E. Adams; (312) 360-0000
Not just a tea house as the name suggests, Russian Tea Time is a full-service restaurant run by natives of the former Soviet Republic of Uzbekistan. *Expensive*

SAFFRON

111 W. Hubbard St.; (312) 464-1100
For those seeking a Latin flair, former-Spiaggia chef Carlos Contereras

has created an international menu combining Latin, Moroccan and Asian influences. Cornmeal-crusted scallops, potato-crusted halibut and chorizo-potato casserole light up the menu. Saffron is dimly lit with a warm ambiance. Curtains separate the very intimate tables. Steak eaters will find comfort in the black-pepper rib eye, but the more adventurous will find plenty of interesting flavors with which to experiment. *Moderate*

SAIKO

1307 S. Wabash Ave.; (312) 922-2222
A taste of what Tokyo hipsters are likely eating in a South Loop location. If you have a taste for sushi, a good bet is the sushi tasting menu—the chef makes excellent choices. A serious sake menu allows the chance to experiment with subtle variations on the Asian liquor. For those whose appetites demand more than sushi, try the shogun rib-eye steak or herb-crusted salmon. The interior is interesting and thoroughly unlike a typical sushi restaurant mostly due to the liberal use of marble, a non-standard architectural touch for Japanese sushi restaurants. *Expensive*

SEASONS RESTAURANT

120 E. Delaware; (312) 649-2349
The Four Seasons Hotel provides luxury hotel amenities in its well-respected Seasons Restaurant. The room is elegant, but most important, the large tables are positioned far enough apart to create a sense of intimacy and space not usually found in the city. Seven stories above North Michigan Ave., chandeliers and gorgeous, fresh-cut flowers grace the oak paneled room. A variety of tasting menus complete with wine selections accompany the a la carte menu. Save room for dessert or cheese, both are an excellent decision. Seasons is known for light, healthy fare. *Very Expensive*

SHAW'S CRAB HOUSE

21 E. Hubbard; (312) 527-2722
Seasonal seafood is flown in daily from the Atlantic, the Gulf and the Pacific Coast to this popular River North spot. Many of the restaurant's fish and seafood suppliers are pictured on the walls of the Blue Crab Lounge, a New Orleans-themed oyster bar with old blues and torch recordings on the sound system. *Expensive*

SMITH & WOLLENSKY

318 N. State; (312) 670-9900
Sports and steaks are the perfect combination in Chicago. Scattered among the memorabilia and Americana art decorating the walls is a fair assortment of sports-related collectables and accents. This New York import serves extremely large steaks. The many windows and French doors provide diners with an excellent view of the Chicago River, the Wacker Drive office towers and the State Street Bridge. Lobster

cocktail and crabcakes are among the most notable appetizers. Aside from steak, the must-be-mentioned entrees include a braised pork shank and a lobster dusted with paprika and cayenne pepper. *Expensive*

SPAGO

520 N. Dearborn; (312) 527-3700
California-Asian inspired dishes served in classy venue. Decor is bright, cheerful and arty. A cigar lounge with a small fireplace can be found on the second floor. *Expensive*

SPIAGGIA

980 N. Michigan; (312) 280-2750
Sophisticated Italian creations are appropriate for this breathtaking room, filled with those desiring to see and be seen. This is an extremely popular destination with white tablecloths, large windows and first class service. *Very Expensive*

STARFISH

804 W. Randolph St.; (312) 997-2433
The sushi and maki choices are as endless as the "oohs" and "aahs" that accompany them. The vibrant green walls and red-orange ceiling are a perfect contrast for the dark floors and dim lighting. The music is urban and matches the crowd. *Expensive*

SUSHISAMBA RIO

504 N. Wells St.; (312) 595-2300
A New York transplant, SushiSamba Rio is trendy, hip and flashy. The menu is a mix of Japanese sushi and South American flavors in a stunning room where no architectural expense has been spared. *Expensive*

SWK

710 N. Wells St.; (312) 274-9500
Sophisticated, expensive and American, SWK offers such interesting starters as ostrich satay with peanut sauce, steak tartar, lobster carpaccio and short ribs in Roquefort sauce. A rich start, but it gets even better with main course choices, including sea bass and rib-eye steaks. Fireplaces warm the room and compete for attention with the live orchids that grace the interior. The ultra-sophisticated SWK is an impressive restaurant for business dining. *Very Expensive*

TASTE OF SIAM

600 S. Dearborn; (312) 939-1179
Located in a converted warehouse in the Printers Row neighborhood, this is the spot for Thai cuisine in the south Loop. The large windows and high ceilings add a touch of airiness to this long, narrow room. The menu is extensive and the food is exotic but not too challenging. The crowd is young and urban. *Inexpensive*

TOPOLOBAMPO

445 N. Clark; (312) 661-1434
Complex Mexican flavors abound in the upscale restaurant adjacent to its sister, Frontera Grill. *Expensive*

TRATTORIA NO. 10

10 N. Dearborn; (312) 984-1718
This subterranean fixture in the Loop has it all. The dark, quiet dining room is divided into intimate spaces by pillars and Italian-style archways. Pin lights add drama to the colorful room. Chicagoans visit Trattoria No. 10 for the amazing pastas, risottos and ravioli dishes. However, meat and seafood lovers will also be pleased. *Expensive*

TRU

676 N. St. Clair; (312) 202-0001
Flashy, contemporary dishes are juxtaposed against the stunning white dining room. This exciting, trendy experience is one block off Michigan Avenue. *Very Expensive*

TUSCANY

1014 W. Taylor; (312) 829-1990
Fashionable Northern Italian restaurant suitably situated on Taylor Street. *Expensive*

VERMILION

10 W. Hubbard St.; (312) 527-4060
Veering far from the traditional path, Vermilion presents a Latin-Indian fusion menu that, however unusual in combination, surprisingly works well in most cases. The Latin influence is easily seen in the tapas-style menu, where patrons order many small dishes to share, such as roasted baby eggplants or fried plantain dumplings, yucca fries and various curries. Be forewarned, small dishes means small, servings are not large. *Expensive*

WAVE

644 N. Lake Shore Dr.; (312) 255-4460
This Mediterranean restaurant specializing in seafood is appropriately situated on Lake Shore Drive. *Chicago Magazine* recommends seafood bouillabaisse. Sleek lines and vibrant colors contribute to Wave's ultimate chicness. Practically flowing into the ultra-trendy W Chicago-Lakeshore Hotel's popular lobby bar, Wave features a communal table ringed by smaller four- and six-seat tables. *Expensive*

VIVO

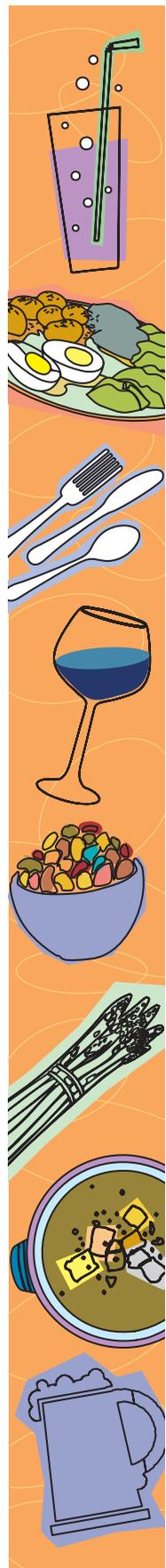
838 W. Randolph; (312) 733-3379
This chic restaurant offers creative Italian fare. *Expensive*

ZEALOUS

419 W. Superior; (312) 475-9112
This warm eggplant and olive room has 18-foot ceilings, texturized walls and a two story glassed-in wine tower that can hold 6,000 wine bottles. Zealous' kitchen brilliantly combines different foods, textures and flavors. The multiple-course degustation menus are highly recommended. *Expensive*



An expanded listing is available at www.rsna.org/publications/rsnanews/oct04/restaurants.html.



Medical Meetings November – April 2004

NOVEMBER 2-5

British Society of Interventional Radiology, BSIR Annual Meeting, Harrogate International Convention Centre, North Yorkshire, U.K. • www.bsir.org

NOVEMBER 9-10

Cancer Imaging Program at the National Cancer Institute, High-throughput Technologies for in vivo Imaging Agents, Watergate Hotel, Washington, D.C.
• <https://cms.palladianpartners.com/cms/1087848422/>

NOVEMBER 27

RSNA, Personal Financial Management Strategies Sessions, McCormick Place, Chicago
• www.rsna.org/education/shortcourses/index.html

NOVEMBER 28-DECEMBER 3

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

DECEMBER 4-7

American Medical Association, AMA Interim Meeting, Hyatt Regency, Atlanta • www.ama-assn.org

JANUARY 20-23

Radiation Therapy Oncology Group, RTOG Meeting, Sheraton Wild Horse Pass Resort & Spa, Phoenix • www.rtog.org

FEBRUARY 2-6

Mexican Society of Radiology (SMRI), Annual Meeting, Mexico City • www.smri.org.mx

FEBRUARY 27-MARCH 4

Society of Gastrointestinal Radiologists (SGR) and Society of Uroradiology (SUR), Abdominal Radiology Course 2005, Hyatt Regency Hill Country Resort, San Antonio • www.sgr.org

MARCH 4-8

European Congress of Radiology, ECR 2005, Austria Center Vienna, Austria • www.ecr.org

MARCH 11-12

Biomedical Imaging Research Opportunities Workshop 3 (BIROW 3), Hyatt Regency Bethesda, Md. • www.birrow.org

MARCH 21-25

Society of Computed Body Tomography & Magnetic Resonance (SCBT/MR), 28th Annual Meeting, Loews Miami Beach Hotel, South Beach, Fla. • www.scbtmr.org

MARCH 31-APRIL 5

Society of Interventional Radiology (SIR), 30th Annual Scientific Meeting, New Orleans • www.sirweb.org

APRIL 9-14

American College of Radiology (ACR), Annual Meeting and Chapter Leader Conference, Hilton Washington, Washington, D.C. • www.acr.org

APRIL 19-22

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

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