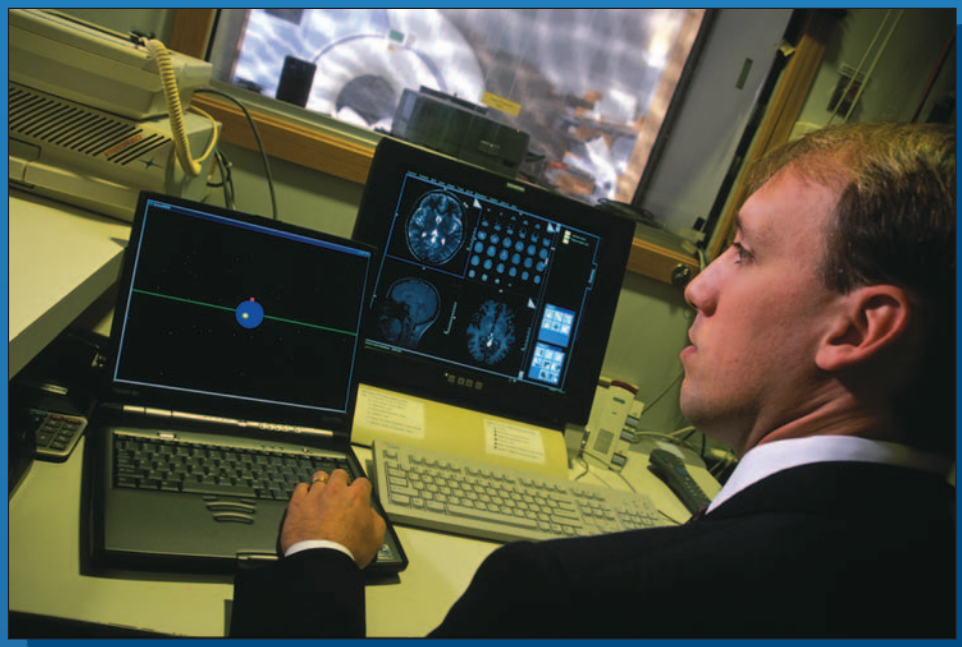
May 2003 ▪ Volume 13, Number 5

RSNA News



NSBRI Explores the Frontiers of Space Research

Also Inside:

- Radiologists Help Confirm SARS
- NIBIB Determines Strategy, Goals for Future
- Research Aims to Produce Artifact-Free Images
- Radiology Unites in Canada
- History of the RSNA—Part 23

May 2003

RSNA News

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May 2003 • Volume 13, Number 5

Published monthly by the Radiological Society of North America, Inc., at 820 Jorie Blvd., Oak Brook, IL 60523-2251. Printed in the USA.

Periodicals postage pending mailing with postage in Oak Brook, IL 60523, and additional mailing offices. POSTMASTER: Send address correction "changes" to: *RSNA News*, 820 Jorie Blvd., Oak Brook, IL 60523-2251.

Nonmember subscription rate is $20 per year; $10 of active members' dues is allocated to a subscription of *RSNA News*.

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Bryan Named ECR Honorary Member


R. Nick Bryan, M.D., Ph.D.

RSNA Immediate Past-President, **R. Nick Bryan, M.D., Ph.D.,** of Philadelphia, has been awarded honorary membership in the European Congress of Radiology. During ECR 2003 in Vienna in March, three other internationally renowned radiology leaders were also awarded honorary membership. They are **Yuji Itai, M.D.** (posthumously), of Japan, **Lilian F.L.Y. Leong, M.D.,** of Hong Kong, and **Morton A. Meyers, M.D.,** of Stony Brook, New York.

Two individuals were awarded ECR gold medals. They are **Christopher D.R. Flower, F.R.C.P., F.R.C.R.,** of Cambridge in the United Kingdom, and **Roberto Passariello, M.D.,** of Rome.

Among the lecturers at ECR 2003 were **Hedvig Hricak, M.D., Ph.D.,** RSNA Board Liaison-designate for Publications and Communications, who gave the Marie Curie Honorary Lecture; and **Pablo R. Ros, M.D., M.P.H.,** immediate past-chairman of the RSNA Committee on International Relations and Education, who gave the Felix Hart Honorary Lecture.

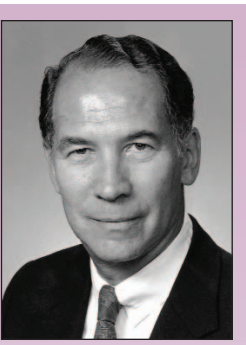
Proto Appointed to NLM Subcommittee

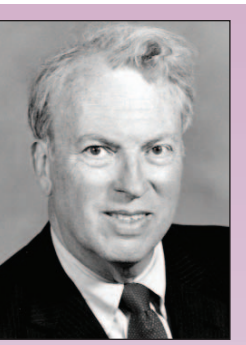
Radiology Editor **Anthony V. Proto, M.D.,** has been appointed to the National Library of Medicine's (NLM) Subcommittee on Biomedical Imaging and Bioengineering. In order to ensure that NLM is collecting, organizing and preserving and providing access to literature that supports the mission of the new National Institute on Biomedical Imaging and Bioengineering, the subcommittee will provide advice and recommendations on the following questions:

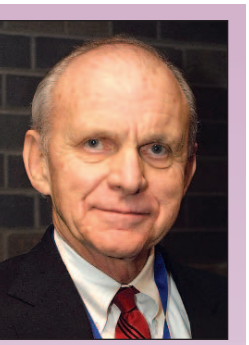

Anthony V. Proto, M.D.

- Where is the important literature of biomedical imaging and bioengineering published?
- Does NLM collect it?
- Does NLM index the important literature?
- Is the Medical Subject Headings vocabulary adequate to describe it? What steps should NLM take to ensure that the vocabulary stays current with the field?

The subcommittee chair is **Morris F. Collen, M.D.,** immediate-past chairman of the NLM Literature Selection Technical Review Committee.


Samuel Hellman, M.D.


Otha Linton


James E. Youker, M.D.

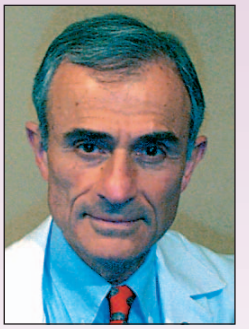
Gold Medals Awarded

The American College of Radiology presented three gold medals this month at its 80th Annual Meeting in Washington, D.C. The ACR gold medal is in recognition of distinguished and extraordinary service to the college and to the radiology profession. The awardees are: **Samuel Hellman, M.D., Otha Linton,** and **James E. Youker, M.D.**

Also this month, the American Roentgen Ray Society presented three gold medals at its annual meeting in California. The recipients are **Walter E. Berdon, M.D., A. Everette James Jr., M.D., Sc.M., J.D.,** and **David C. Levin, M.D.**


Walter E. Berdon, M.D.


A. Everette James Jr., M.D., Sc.M., J.D.


David C. Levin, M.D.

In Memoriam

Alexander M. Finlay Jr., M.D.

Retired radiologist **Alexander M. Finlay Jr., M.D.,** of Denton, Texas, died in December at the age of 83.

After serving four years in the U.S. Navy during World War II, Dr. Finlay earned his medical degree at the University of Texas Medical School in Galveston. He spent one year as an intern and another year in general practice before beginning a radiology residency at the Veterans Hospital in Dallas.

Dr. Finley served as mayor of Denton from 1970 until 1972. He retired as chief of radiology at Kaiser Permanente in Dallas in 1986, but performed locum tenens services until 2001.

He had been an RSNA member since 1958.

Radiology Resident Earns AMA Award

Scott Preusen, M.D., J.D.

Scott Preusen, M.D., J.D., a diagnostic radiology resident at Loyola University in Chicago, is the recipient of a 2003 AMA Foundation Leadership Award. Each year, the AMA Foundation recognizes medical students, residents, fellows and young physicians who have exhibited outstanding leadership abilities in organized medicine or community affairs. Dr. Preusen will complete his residency in July 2004.

Anderson Takes National VA Position

Charles M. Anderson, M.D., Ph.D.

Charles M. Anderson, M.D., Ph.D., an associate professor of radiology at the University of California, San Francisco, and chief of MRI and PACS at the Veterans Affairs Medical Center in San Francisco, has been appointed national director of radiology and chief consultant for diagnostic services for the Veterans Health Administration in Washington, D.C.

Dr. Anderson will be based in San Francisco.

Lang Elected to CSE Board

Diane Berneath Lang, RSNA Assistant Director of Publications: Editorial Services and an RSNA employee since 1984, has been elected to the board of directors of the Council of Science Editors (CSE).

The council promotes excellence in the communication of scientific information among the scientific, scientific publishing and information science communities.

RSNA News 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.

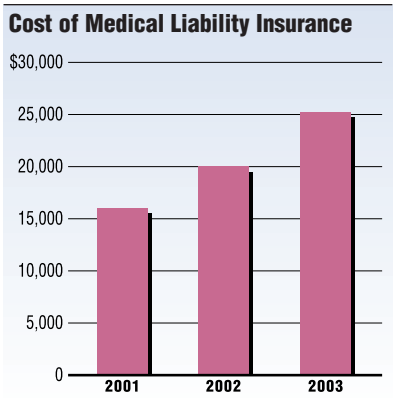
Cost of Medical Liability Insurance Jumps in 2002

As Congress works to pass medical liability reform, a new survey conducted by the American Medical Association, in cooperation with RSNA and the American College of Radiology, finds that the cost of professional medical liability insurance jumped 25 percent last year.

Radiologists responded that, on average, they paid $20,000 in medical liability insurance premiums in 2002. That compares to $16,000 in 2001. Among those who have received a bill for professional liability coverage in 2003, the average premium was $25,200.

In addition, nearly half of the radiologists who responded said they have changed the way they practice because of medical liability issues. These changes include referring complex cases and stopping or starting certain services.

For information on the results of the AMA's national professional medical liability survey, go to *www.ama-assn.org/ama/pub/article/1616-7494.html.*



ARDMS Clarifies Educational Requirement

The American Registry of Diagnostic Medical Sonographers (ARDMS) has expanded the definition of one of its educational prerequisites to make it easier for those seeking ARDMS ultrasound/vascular credentials to show they have completed a two-year allied health education program.

"Adding a further option for demonstrating completion of ultrasound education demonstrates ARDMS' flexibility in responding to some of the new, content-intensive, compressed-curricular formats now available to sonography students," says Kari E. Boyce, Ph.D., chair of the ARDMS Board of Directors.

New Guidance Proposed for Financial Conflicts of Interest in Research

Health and Human Services Secretary Tommy G. Thompson has proposed a guidance for protecting research volunteers from possible harm caused by financial conflicts of interest in the research.

The draft guidance, "Financial Relationships and Interests in Research Involving Human Subjects: Guidance for Human Subject Protection," presents a single HHS-wide reference point for decision-making that would apply to all human subject research conducted or supported by HHS and its agencies, including the National Institutes of Health and the Centers for Disease Control and Prevention. It would also apply to all human subject research regulated by the Food and Drug Administration.

"Protecting research volunteers is of paramount importance," says Thompson. "This guidance would give institutions, institutional review boards, researchers and other responsible parties a clearer framework for identifying and managing potential conflicts of interest as early as possible."

The proposed guidelines were published in the March 31 Federal Register with a 60-day comment period. They are also available at *www.fda.gov/ohrms/dockets/GUIDANCES/DGUIDES.htm.*

Written comments may be submitted to the Dockets Management Branch (HFA-305), Food and Drug Administration, 5630 Fishers Ln, Room 1061, Rockville, MD 20852. Electronic comments may be sent to *www.fda.gov/dockets/ecomments.*

Konica and Minolta Merge

Konica Corporation, the parent company of Konica Medical Imaging, will merge with Minolta, Co., Ltd., on August 1, 2003. By expanding resources and combining the strong imaging technologies of both companies, the new corporate group is expected to be a global market leader. The new corporate slogan will be, "The Essentials of Imaging."

AHRA Hosts Two Certification Exams in 2003

The American Healthcare Radiology Administrators will offer two Certified Radiology Administrator (CRA) exams in 2003. The first test will be on May 17 at six national testing centers. A second opportunity will be available on August 9 at national testing centers and at the AHRA annual meeting in Anaheim, Calif.

The CRA exam is the first and only program of its kind in the industry. The program works to raise the business acumen of imaging administrators, provide a standardized evaluation of an imaging administrator's competence, enhance the status of imaging administration in the healthcare community and ensure appropriate recognition of expertise as identified by the certification.

Of the 236 radiology administrators who took the inaugural exam in 2002, 204 (86.44 percent) passed and now may be recognized with CRA credentials.

For more information, go to *www.ahraonline.org.*

ICRU Gray Medal Nominations

The International Commission on Radiation Units and Measurements (ICRU) is seeking nominations for the 12th recipient of the ICRU Gray Medal. The medal is awarded for outstanding contributions to basic or applied radiation science of interest to the ICRU.

Preference will be given to individuals who have made major contributions to medically oriented imaging science. Nominations for the medal may be made by any person or organization by August 1, 2003.

For more information, go to *www.aapm.org/announcements/gray_ medal.pdf.*

In August, the 10th and 11th Gray Medals will be presented to Michael Fry, M.D., at the International Congress of Radiation Research in Brisbane, Australia, and to Martin Berger, Ph.D., at the 45th Annual Meeting of the American Association of Physicists in Medicine in San Diego.

RSNA Board of Directors Report

One of RSNA's strengths is its ability to respond to the changing needs of its members and the entire imaging profession.

A year ago, the RSNA Board of Directors unveiled a three-year strategic plan that will guide the Society as it helps to enhance and secure the field of radiology. A vision, a mission statement and the Society's core values were defined. Board members promised to review, refresh and revise the plan on a regular basis.

In March, the Board approved the 2003–2006 Strategic Plan, which renews the Society's mission, further defines the necessary goals and objectives and aligns the goals more closely with the cabinet responsibilities of Board members.

David H. Hussey, M.D.
Chairman, 2003 RSNA Board of Directors

RSNA 2003

One of seven primary goals of the Society is to maintain the preeminence of the annual meeting as a scientific and educational forum. The Society also wants to make the meeting as user friendly as possible for the attendees.

RSNA staff members and the dozens of radiology professionals, who volunteer their time and expertise to the Society, have made a number of recommendations to enhance and improve a program that is already unparalleled in scientific content, educational value and access to state-of-the-art technology.

Among the changes the Board has approved for 2003:

- Lengthening the lunch period to give attendees an opportunity to spend more time viewing exhibits, visiting with colleagues or walking to their next course.
- Expanding scientific paper presentations by one minute to give presenters seven minutes to convey their information and three minutes to answer questions from attendees.
- Increasing the number of digital scientific sessions—scientific paper sessions made available as narrated PowerPoint demonstrations.
- Increasing the number of interactive sessions. Audience participation will be an integral part of the new case-based review series.
- Encouraging more refresher course presenters to make their handouts available on the Internet prior to the meeting.
- Improving the transportation between McCormick Place and downtown Chicago hotels. One way that will be done is through a new shuttle bus company.

Additional information on some of the enhancements for RSNA 2003 will be included in upcoming issues of *RSNA News*.

Scientific Program

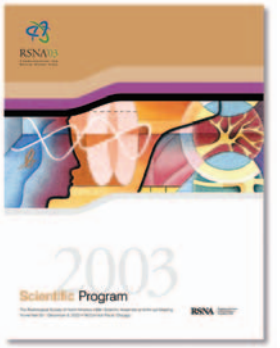
One big change for this year involves the distribution of the *RSNA 2003 Scientific Program*.

All RSNA members are entitled to one free copy of the *Scientific Program* as a benefit of membership. Instead of automatically mailing that free copy of the program, the RSNA Board has approved pre-meeting distribution by request only. A letter explaining this new policy will be mailed soon.

Members have three options:
1. Request the *Scientific Program* be mailed in advance of the annual meeting.
2. Request to pick up the program at the meeting.
3. Do nothing and not receive a copy of the program.

The deadline to request the *Scientific Program* in advance of the meeting will be September 1, 2003.

The *Scientific Program* content will continue to be available online before, during and after the meeting. This makes it easy for attendees to customize a schedule that will give them maximum benefits from the meeting. They will be able to perform comprehensive searches, design a detailed schedule and download the information to their computer or personal digital assistant. A step-by-step tutorial on how to create a customized meeting schedule will be included in a later issue of *RSNA News*.



RadioGraphics

The Board is pleased to announce a new three-year contract for William W. Olmsted, M.D., as RSNA's Education Editor and editor of *RadioGraphics*. Since 1990, Dr. Olmsted has been instrumental in guiding *RadioGraphics* as the bimonthly peer-reviewed journal presents the best and most notable education exhibits showcased at the Society's annual meeting. The Board appreciates Dr. Olmsted's dedication and looks forward to his continued success.

William W. Olmsted, M.D.

RSNA Research & Education Foundation

Another RSNA Strategic Plan goal is to support high-quality research in radiologic science and disseminate the results to the profession. The Board has authorized a donation of $200,000 to the RSNA Research & Education Foundation to supplement the funds available for awarding grants in 2003.

In addition, RSNA and the Foundation will continue to be sponsoring members of the Academy of Radiology Research (ARR) for 2003 and 2004.

RSNA will be the host institution for the second Biomedical Imaging Research Opportunities Workshop (BIROW) to be held in March 2004. The goal of BIROW is to identify and explore opportunities for basic science engineering and research in biomedical imaging. Other BIROW partners include ARR, the American Association of Physicists in Medicine, the Biomedical Engineering Society and the American Institute for Medical and Biological Engineering.

Communications

RSNA is deeply committed to increasing the general public's awareness about radiology. Several activities are under way to accomplish that goal.

In June, RSNA will sponsor a media briefing in New York to offer information about the latest advances in diagnosis and treatment using image-guided interventions. The media briefing is designed to educate medical reporters, who will then inform the public about radiology through stories appearing in newspapers and magazines and on television and radio.

RSNA has also formed a Public Information Advisors Network—a committee of physician volunteers from all radiology subspecialties. Committee members will review press releases and news features for scientific accuracy and will participate, when needed, in media interviews on their subspecialty topic.

RSNA's radiology exhibit at Disney's Epcot® closed in September 2002 after a successful three-year run. The Board is developing ways to incorporate various aspects of the exhibit into other communications efforts. While that will be an ongoing process, the Board has approved converting the introductory videos, which provide an overview of radiology, into a digital format that can be featured on *RadiologyInfo*™ (*www.RadiologyInfo.org*), the RSNA/ACR patient education Web site.

Other Board Action

- The Board has also ratified an affiliation agreement with three academic societies that have missions congruent with RSNA—the Association of University Radiologists, the Society of Chairmen of Academic Radiology Departments and the Association of Program Directors in Radiology. The overall goal is to increase collaboration among the organizations in achieving common goals.
- In order to develop a closer relationship with Mexico, the Board has approved a plan allowing the journals for two radiologic organizations, Sociedad Mexicana de Radiologia e Imagen (SMRI) and Federacion Mexicana de Radiologia e Imagen (FMRI), to translate into Spanish multiple abstracts from *Radiology* and *RadioGraphics*.

David H. Hussey, M.D.
Chairman
2003 RSNA Board of Directors

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

Radiologists Help Confirm SARS

Radiologists are playing a role in the identification of severe acute respiratory syndrome (SARS)—a deadly respiratory virus that has claimed more than 200 lives since it was first discovered a few months ago in China.

The U.S. Centers for Disease Control and Prevention (CDC) and the World Health Organization (WHO) have received about 4,000 reports of SARS cases in 27 countries including China, Canada, United States, Philippines, Singapore, Thailand, Vietnam, Australia and Belgium.

The cause of the illness is a new pathogen, a member of the coronavirus family never before seen in humans.

Early manifestations in SARS patients have included influenza-like symptoms such as fever, myalgias, headache, sore throat, dry cough, shortness of breath or difficulty breathing. In some cases, these symptoms are followed by hypoxia, pneumonia and occasionally acute respiratory distress requiring mechanical ventilation and occasionally death.

Laboratory findings may include thrombocytopenia and leukopenia. Some close contacts, including healthcare workers, have developed similar illnesses.

In Hong Kong, where many cases have been identified, the Chinese University of Hong Kong has posted on its Web site detailed radiologic findings of SARS.

The Web site (*www.droid.cuhk.edu.hk*) includes an image gallery, a recommended imaging protocol and infection control guidelines. It will be continually updated during the crisis. Because the information is presented as a popup window, those who cannot initially access the information are being asked to click on scrolling text along the top of the Web page.

SARS in Canada

Outside of Asia, Canada is reporting the largest number of probable and suspected SARS cases. The majority of them are in the Toronto region.

Throughout the entire province of Ontario, every hospital has had to adopt a No Visitors policy, except for patients whose death may be imminent. Extreme caution is taken with those visitors, including a symptom clearance evaluation when they arrive.

Patrice Bret, M.D., a professor of radiology at the University of Toronto and the radiologist-in-chief at University Health Network (UHN)—which includes Toronto General Hospital, Toronto Western and Princess Margaret Hospitals—and Mount Sinai Hospital, says, "SARS has pretty much shut down all of our outpatient practice. We have had to cancel every elective imaging test."

> *There has not been an outbreak in the community. . . .If they contain the hospitals long enough, then it will go away.*
>
> **—Patrice Bret, M.D.**

All teaching has been cancelled. All meetings have been cancelled. All business is conducted by telephone conference call, according to Dr. Bret.

In the hospitals for which he is responsible, Dr. Bret says they usually see 2,000 patients per day. Now, there are fewer than 300 per day. "In the radiology department it is a desert. There is a skeleton staff with only a few technologists," he says. "They've tried to reduce traffic to the bare minimum. I had to pick one hospital location and this is the only location where I can work."

Dr. Bret says his radiology department has had minimal involvement with the SARS patients, "We provide general imaging support because some of the patients are mechanically ventilated, but for the most part, the diagnosis has been called by the epidemiology and clinical teams."

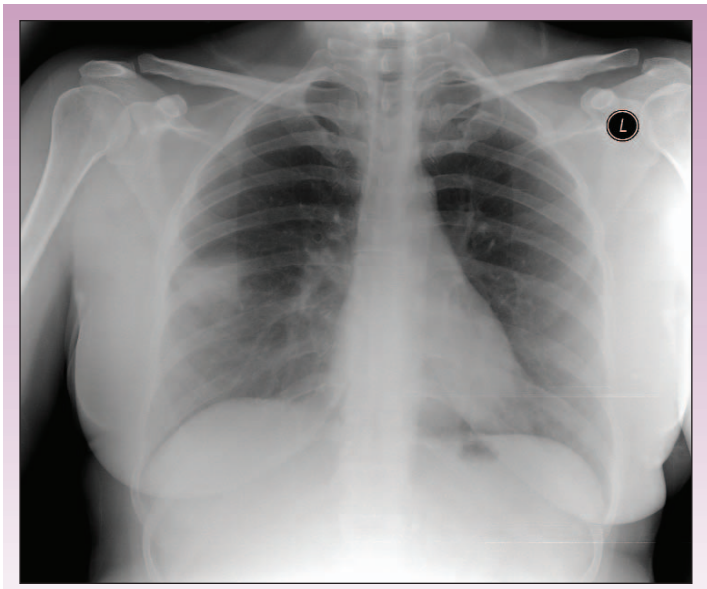
Once a patient is suspected of having SARS, Dr. Bret says they are put in a special isolation room where there is negative pressure and isolation precautions are taken.

Tae Bong Chung, M.D., a chest radiologist at UHN says, "We perform chest radiography using portable equipment in patients with SARS because they are in isolation." As a precaution, radiologists are required to wear gowns, gloves and goggles if there is any contact with patients.

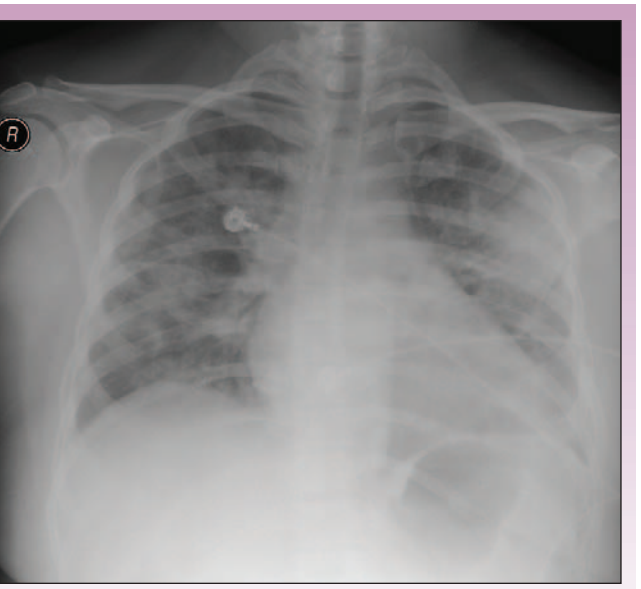
"We've found different imaging patterns. Some are focal airspace disease that looks like lobar pneumonia, some can have multifocal airspace disease and others have a more diffuse ARDS [acute respiratory distress syndrome] appearance," says Dr. Chung.

In Vancouver, three SARS cases had been confirmed by early April.

"The initial chest radiographs in the first two patients showed hazy bilateral increased opacification—ground-glass opacities—and minimal consolidation," says Nestor L. Müller, M.D., Ph.D., professor and chairman of the Depart-



Chest radiograph from a 40-year-old female with suspected SARS showing a focal right mid lung consolidation.



Chest radiograph from a 38-year-old female with suspected SARS showing bilateral airspace disease.

Photos courtesy of Dr. Chung.

ment of Radiology at the University of British Columbia. "High-resolution CT showed diffuse bilateral ground-glass attenuation and mild airspace consolidation."

A third patient presented with unilateral consolidation. "In all patients the radiographic findings progressed rapidly over 24 to 48 hours to extensive bilateral airspace consolidation," says Dr. Müller.

He adds that the radiographic and high-resolution CT findings in these patients are consistent with an interstitial and airspace pneumonia, which rapidly progresses to a picture of adult respiratory distress syndrome.

One of the things Dr. Bret says is extremely important to note is that all of the SARS cases in Toronto have been traced back to a cluster of family members who took a trip to Hong Kong and subsequently the family members and healthcare workers whom they have infected. "There has not been an outbreak in the community. Nobody has been contaminated on the subway. People can continue to live their lives. If they contain the hospitals long enough, then it will go away."

The biggest challenge in the battle against SARS is the risk from unrecognized patients. "There have been no cases of someone getting SARS from someone who was already diagnosed," says Dr. Bret. "All of the cases have come from contact with an unrecognized SARS case."

Suspected SARS Cases

So, how do you recognize the disease before you have contaminated everyone around you? The CDC is providing the following SARS case definition:

Respiratory illness of unknown etiology with onset since February 1, 2003, and the following criteria:

- Measured temperature > 100.5° F (>38° C).

AND

- One or more clinical findings of respiratory illness, such as cough, shortness of breath, difficulty breathing, hypoxia or radiographic findings of either pneumonia or acute respiratory distress syndrome.

AND

- Travel within 10 days of onset of symptoms to an area with documented or suspected community transmission of SARS.

OR

- Close contact within 10 days of onset of symptoms with either a person with a respiratory illness who traveled to a SARS area or a person known to be a suspected SARS case.

"The incubation period may be extended to 14 days," says Dr. Bret. "It appears a patient is contagious from one day prior to becoming symptomatic until possibly two weeks after they have become asymptomatic. How long they are contagious is not known. The Toronto patients who are being discharged from the Hospital are placed in quarantine at home for two weeks."

Because of this, the entire hospital population in downtown Toronto and the province of Ontario is using strict precautionary measures. "Everyone in the hospital must wear masks at all times," says Dr. Bret. "Every interaction with a patient is done using goggles, masks, gowns and gloves."

Each day as they enter the building, staff must have their temperature checked and they must sign documentation that they have not worked in any other facility and that they don't have symptoms. In addition, everyone must wash their hands when they arrive, every time they move to a different

Continued on next page

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area of the hospital, and again before they leave the facility.

Diagnosis/Evaluation

The CDC recommends initial diagnostic testing should include chest radiograph, pulse oximetry, blood cultures, sputum Gram's stain and culture, and testing for viral respiratory pathogens, notably influenza A and B and respiratory syncytial virus.

The CDC says chest radiographs might be normal during the febrile prodrome and throughout the course of illness. However, in a substantial proportion of patients, the respiratory phase is characterized by early focal interstitial infiltrates progressing to more generalized, patchy, interstitial infiltrates. Some chest radiographs from patients in the late stages of SARS also have shown areas of consolidation.

Clinicians are being asked to save any available clinical specimens for additional testing until a specific diagnosis is made.

SARS Treatment

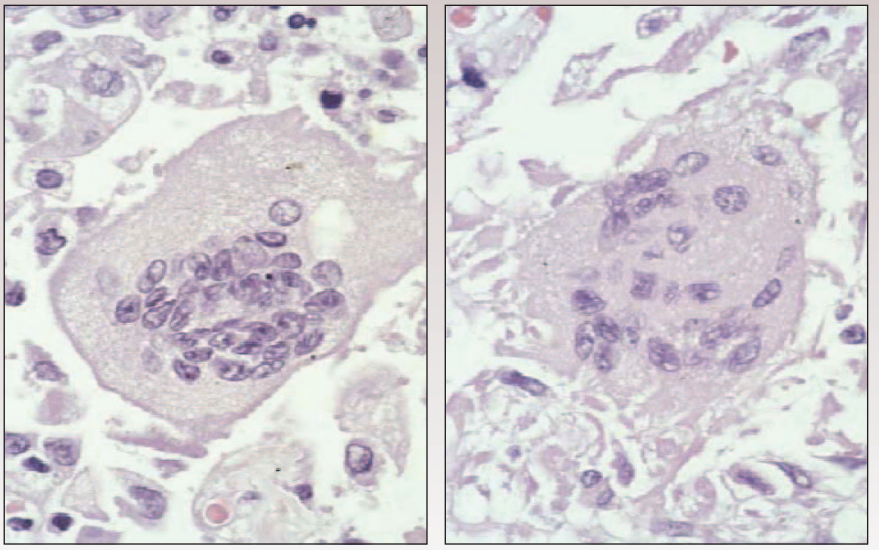
The CDC reports that treatment regimens have included several antibiotics to presumptively treat known bacterial agents of atypical pneumonia. In several locations, therapy also has included antiviral agents such as oseltamivir or ribavirin. Steroids have also been administered orally or intravenously to patients in combination with ribavirin and other antimicrobials. At present, the most efficacious treatment regimen, if any, is unknown.

"I've never seen anything like this in my career," says Dr. Bret. □

More Information on SARS

- CDC
  www.cdc.gov/ncidod/sars/
- WHO
  www.who.int/csr/sars/en

Multinucleated syncytial giant cells in lung of SARS patient



Courtesy of James M. Hughes, M.D., director of the National Center for Infectious Diseases at the Centers for Disease Control and Prevention. This information was presented during the "Preventing the Spread of SARS" Webcast, which is available at *www.cdc.gov/ncidod/sars/webcast/broadcast040403.htm*.

SARS Cases as Reported by WHO

(as of 4/21/03)

COUNTRY	CUMULATIVE NUMBER OF CASE(S)	NUMBER OF DEATHS
Australia	3	0
Brazil	2	0
Canada	132	12
China	1,959	86
China, Hong Kong Special Administrative Region	1,402	94
China, Taiwan	29	0
France	5	0
Germany	6	0
India	1	0
Indonesia	1	0
Italy	3	0
Japan	5	0
Kuwait	1	0
Malaysia	6	1
Mongolia	3	0
Philippines	2	1
Republic of Ireland	1	0
Romania	1	0
Singapore	178	16
South Africa	1	0
Spain	1	0
Sweden	3	0
Switzerland	1	0
Thailand	7	2
United Kingdom	6	0
United States	39	0
Vietnam	63	5
Total	**3,861**	**217**

NIBIB Determines Strategy, Goals for Future

Armed with its new budget appropriation, the National Institute of Biomedical Imaging and Bioengineering (NIBIB) is in the midst of reorganization. NIBIB is trying to determine how to make the best use of those funds while establishing its credentials as a major player within NIH.

Although the fiscal year began last October, Congress waited until February to approve an omnibus appropriations bill that includes $280 million for NIBIB—a substantial increase from the $112 million in the last fiscal year and the $121 million originally proposed by the Bush Administration for the current budget year.

The $280 million includes $150 million in existing research grants and uncommitted funds transferred from other institutes.

The transfer was guided by a nine-member task force that reviewed nearly 3,000 individual research grants. The task force included three appointees from the Academy of Radiology Research (ARR): Stanley Baum, M.D., N. Reed Dunnick, M.D., and Etta D. Pisano, M.D. NIH and the American Institute for Medical and Biological Engineering (AIMBE) appointed the remaining six members. Among them was King C.P. Li, M.D., M.B.A., chairman of the Imaging Sciences Program at NIH.

The fiscal year 2003 appropriation will allow NIBIB to enhance emerging programs in tissue engineering, advanced biomaterials, sensors, novel drug and gene delivery systems and devices, cell and molecular processes and optical technologies. The fiscal year 2004 Congressional Justification includes $3 million for the startup of an intramural program. President Bush has proposed only a $2 million increase for NIBIB in fiscal year 2004, which starts October 1, 2003.

Ed Nagy
ARR Executive Director

William Heetderks, Ph.D.
NIBIB Associate Director for Science Programs

ARR Executive Director Ed Nagy says convincing Congress to expand that increase is the highest priority this year.

"NIBIB has a compelling story to tell," Nagy explains. "Imaging is integral to both healthcare delivery and advanced biomedical research. Its central role is clear in the roadmap that Director Elias Zerhouni has laid out for NIH."

Dr. Zerhouni's fiscal year 2004 NIH budget request outlines a three-pronged roadmap. The medical leg of the roadmap is called New Pathways to Discovery. The other two are Multidisciplinary Research Teams of the Future and Reengineering the Clinical Research Enterprise.

New Pathways emphasizes the analysis and identification of the human cell—all of the genes and their common variants, all of the regulatory signals that control gene expression and all of the proteins those genes encode.

In his roadmap, Dr. Zerhouni explicitly endorses the importance of molecular imaging technologies for their unique ability to allow researchers to view complex structures such as protein assemblies, which carry out most cellular functions. In addition, the NIH director endorses tissue engineering—one of NIBIB's key exploration areas—because of its ability to regenerate cells in two- and three-dimensional matrices for use in transplantation therapies.

Dr. Zerhouni's highlighting of molecular imaging and tissue engineering looks like a page out of the NIBIB playbook. The institute recently issued requests for applications in those areas. In the first area, NIBIB looks to

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support research leading to the discovery or development of cross-cutting technologies for cellular and molecular imaging and/or spectroscopy systems and methods that can be applied to research on multiple biological or disease processes.

In the area of tissue engineering, NIBIB sees its role as coming up with the engineering design principles that will undergird the large-scale production of safe, reproducible tissues that are clinically appropriate. This means emphasizing research such as the development of bioengineering strategies to promote vascularization of tissue constructs and improved monitoring devices to assess tissue function from the site of production to the transplant clinic and methodologies—such as imaging—to noninvasively track the fate of and allow for the functional assessment of implanted tissue.

Imaging is integral to both healthcare delivery and advanced biomedical research. Its central role is clear in the [NIH] roadmap.

—Ed Nagy

The tissue engineering, molecular cell biology and optical initiatives which are unfolding at NIBIB fall under the purview of the new associate director for science programs, William Heetderks, Ph.D., who spent the last 16 years at the National Institute for Neurological Disorders and Stroke. Dr. Heetderks reports directly to NIBIB Director Roderic I. Pettigrew, M.D., Ph.D.

Because of the pending reorganization, Dr. Heetderks was unable to say whether the divisions of biomedical imaging and bioengineering, both of which still lack permanent directors, would remain intact. Nor was he able make any commitment on the initiation of an intramural research program.

"Intramural programs typically account for about 10 percent of an institute's budget," explains Dr. Heetderks. "We would expect to develop over time a program of that magnitude."

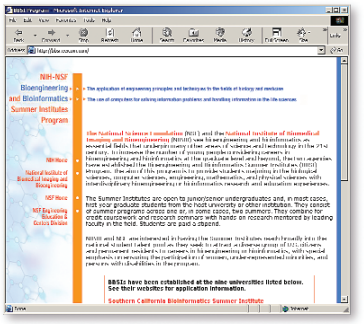
Right now, however, the institute is clearly emphasizing the training of Ph.D.s, radiology residents and other investigators in the fine art of research, and then convincing them of the importance of a radiology research career. Dr. Heetderks notes that NIBIB wants to provide opportunities for radiology residents to "deeply immerse" themselves over a period of years. But he adds, "Right now, there is only limited opportunity for sustained research." □

RSNA: PROGRAM & GRANT ANNOUNCEMENTS

NEW!

NSF/NIBIB Bioengineering and Bioinformatics Summer Institutes

Information and links for the nine grantee institutions for the NSF/NIBIB Bioengineering and Bioinformatics Summer Institutes (BBSI) program is available at *bbsi.eeicom.com.* The BBSI Program is a joint effort between the National Science Foundation and the National Institute for Biomedical Imaging and Bioengineering to support 10-week summer biomedical research experiences for undergraduate (rising juniors and seniors) and early graduate (first two years of graduate school) students with quantitative science majors. The first institutes are scheduled to begin in the summer of 2003.



BECON 2003 Symposium to Focus on Team Science

The Bioengineering Consortium (BECON) of the National Institutes of Health (NIH) has scheduled its sixth annual Symposium for June 23-24, 2003, at the Natcher Conference Center in Bethesda, Md. The Symposium, "Catalyzing Team Science," is aimed at examining the forces that encourage and discourage team approaches to biomedical research and exploring ways in which NIH, academia and others can stimulate and reward team efforts.

A preliminary agenda, along with program and registration information, are available at *www.becon.nih.gov/symposium2003.htm.*

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Research Aims to Produce Artifact-Free Images

With a $6.9 million grant from the National Institute of Biomedical Imaging and Bioengineering, radiologists and research scientists at the Penn State College of Medicine in Hershey are leading a multi-institutional study of ultra-high field MR imaging designed to produce more precise images of the human body than are possible with fields of 3 T or lower.

"We are using ultra-high field MRI of 7 Tesla and higher and are looking at ways to get rid of the magnetic field homogeneity artifacts and radiofrequency artifacts that can occur at ultra-high fields," says Timothy J. Mosher, M.D., chief of MRI and radiology research at Penn State and a co-investigator in the study. "Our ultimate goal is to try to remove these artifacts so we can obtain improved image quality with ultra-high field scanners."

Timothy J. Mosher, M.D.
Chief of MRI and Radiology Research
Penn State University

Michael B. Smith, Ph.D.
Chief of NMR Research
Penn State University

Static and RF Artifacts

The principal investigator, Michael B. Smith, Ph.D., professor of radiology and chief of NMR research at Penn State, and colleagues Qing Yang, Ph.D., Christopher Collins, Ph.D., and Dr. Mosher received the five-year grant last October, but they have been conducting research into ultra-high field MR imaging for more than 10 years. "There are two major areas of our research," he says. "One involves looking at the static field in homogeneity. We are basically trying to correct the artifacts that can occur around the paranasal sinuses and other oxygen-containing structures. So far, we've developed the initial phase of a technique to reduce those artifacts."

The other area of research involves the radiofrequency (RF) artifacts. "We are approaching this by developing mathematical models that represent the type of behavior that occurs inside the body when it is exposed to RF energy," Dr. Mosher says. "We are looking at how the RF energy is deposited within the body. We initially developed adult male and female computer models and are trying to extend that research to see what happens in children, pregnant women and fetuses. We hope to use this knowledge to develop unique ways of building RF coils and tools for achieving more uniformity of RF fields within the body."

The researchers have done some preliminary testing of the models with images obtained at 7 T and higher. Working with scientists at the University of Minnesota's Center for MR Research, Dr. Smith and his colleagues are assessing human images at 7 T, and along with researchers at the University of Florida, they are developing 14 T applications to microimaging.

"Ultimately, we should be able to use this technology to obtain higher resolution images," Dr. Mosher says. "The biggest application, I think, will be in functional MR imaging where the high magnetic field strength really increases the contrast to noise for better localization of functional MR imaging data. For example, we should be able to look at specific areas of gray matter, rather than seeing just the coarse localization that we obtain with lower field scanners. The higher quality images we obtain may eventually have additional clinical applications, such as in ultra-high field orthopedic imaging."

Long-Term Objective

"The long-term objective is to understand and develop engineering solutions to the difficult problems of MR imaging at high-field strengths," says Dr. Smith. "The distortion of the static magnetic field that occurs at higher and higher magnetic field strengths is caused by the concentration of magnetic flux in regions that contain oxygen, such as the sinus cavities and the audi-

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tory canals. The second type of distortion is from the wave behavior of the FM radiofrequencies we use in MRI."

The researchers have been using the National Library of Medicine's Visible Man software and have assigned to segmented voxels of the Visible Man ranked parameters of conductivity, a dielectric constant and magnetic permeability, Dr. Smith explains. "We are able to mathematically model what we expect to happen at different field strengths, both for the static field and RF field. Using these models, we have been able to design procedures for the static field that correct the distortion."

Our ultimate goal is … improved image quality with ultra-high field scanners.

—Timothy J. Mosher, M.D.

However, RF distortion is a more difficult challenge, he says. "The RF wave is a traveling wave of energy across the human head rather than a static wave. The signal is constantly changing. Sometimes it may be high and sometimes low. What we normally see in high-field images is a bright spot in the center of the head. We are trying to eliminate this distortion by controlling the way the wave propagates across the human head."

So far, Dr. Smith and his colleagues have been able to demonstrate what the RF wave looks like and how it behaves in field strengths up to 7 T. "We have been able to take images at 7 Tesla and show that our calculations are exactly the same as what we found experimentally. So we have a high degree of confidence that we are beginning to understand RF wave behavior," he says.

The biggest obstacle to the research, he says, is the amount of computational time required. "Even on the fastest PC, we are finding that some of our calculations run three, four or five days. Some of the calculations we would like to do might run as long as 200 days of continual computing. To deal with this, we are getting 20 or 30 processors to share the load and streamline the time."

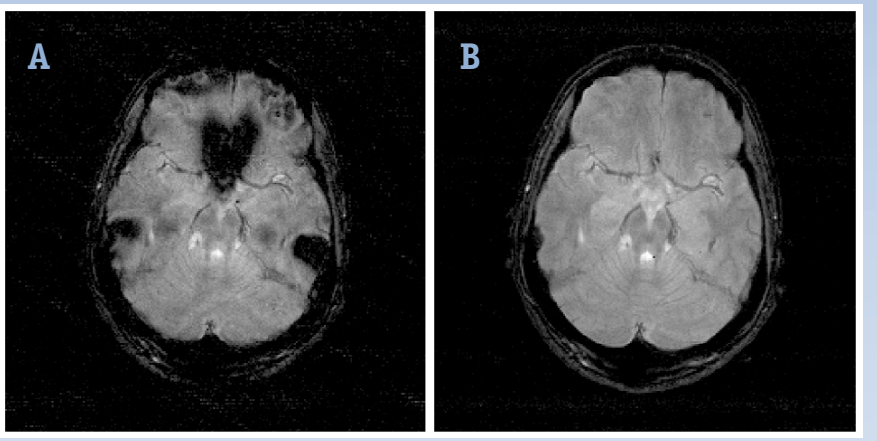

Figure 1: In conventional heavily T2*-weighted images like that shown in figure 1A, distortion of the static magnetic field uniformity caused by air-containing structures such as the paranasal sinus and mastoid air cells produces signal loss artifact in the adjacent brain. Researchers at Penn State University are developing novel techniques for obtaining artifact-free images such as that shown in figure 1B.

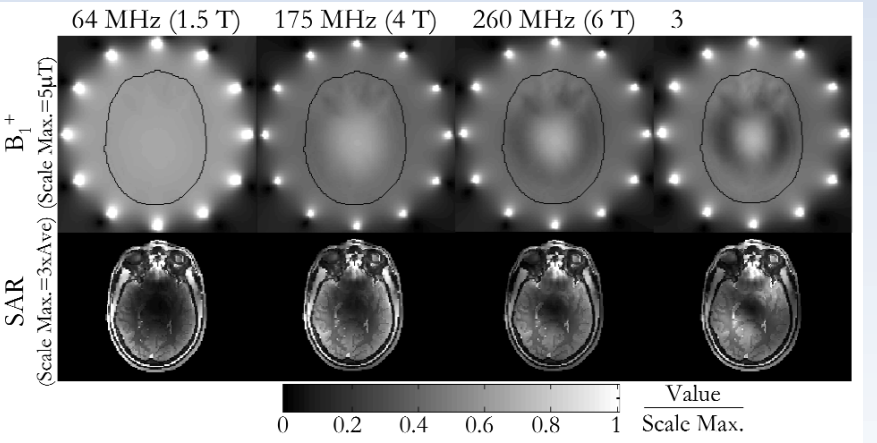

Figure 2: While the radiofrequency (RF) field within the human head is relatively uniform at 1.5 T, the RF penetration at higher field strengths becomes increasingly more complex and non-uniform leading to image artifact and localized heating. Investigators are using mathematical models of phantoms and human tissue to study RF wave behavior and local SAR at ultra-high magnetic field.

Fine-Tuning

Both investigators believe their research goals can be accomplished in the next five years. "Solving the problem of artifacts at ultra-high field strengths is the first step, then we will do some fine-tuning," Dr. Smith says. "One of the difficulties I see in the correction of static artifacts we have already established is that it corrects about 90 percent of the artifacts, but there are subtleties that are not corrected. The future of our research will be about obtaining perfect images."

Both investigators also believe in the value of the technology. "The Holy Grail of MR imaging is a higher signal-to-noise ratio," Dr. Smith says. "The artifacts at ultra-high field strengths are simply obstacles to reaching that goal. If we are to realize the benefits of higher signal-to-noise at high fields, then we have to overcome these obstacles to create a better future for diagnostic medicine." □

Radiology Unites in Canada

An historic transition is taking place in Canada thanks to four years of lobbying and public outreach by a revitalized Canadian Association of Radiologists (CAR). On April 1, the provinces received $1.5 billion in federal money to upgrade the nation's aging stock of imaging equipment. The outlay is part of a three-year, $15 billion healthcare budget that includes $1.5 billion for access to care and teleradiology in rural and remote areas.

A few years ago, the medical imaging picture in Canada was ominous. Normand Laberge, CAR's chief executive officer, says the equipment was so out of date that many radiologists were leaving Canada for the United States or were moving from rural areas to better-equipped urban centers. The provincial governments, which controlled the medical purse strings, were focusing on cost reductions and zero deficit spending rather than on purchasing new imaging equipment.

Canadian radiology, both at the national and provincial levels, was politically naïve and fragmented. Fewer than half of Canada's radiologists belonged to CAR and the profession was not being heard. Something had to be done. Under the leadership of CAR President (1997-1999) Brian C. Lentle, M.D., a management company was hired to do an operational review.

"It was clear the organization was simply run down and was not functioning effectively," recalls Dr. Lentle, 2003 RSNA President-elect. "Through the operational review, we changed the way in which the organization works. It was determined that we needed new staff leadership, so we hired Normand, who has done everything expected of him."

Normand Laberge
CAR Chief Executive Officer

Brian C. Lentle, M.D.
1997-1999 CAR President

When he took the helm of CAR, Laberge, a lawyer and former CEO of the Canadian Bar Association, began lobbying in Ottawa. "We submitted the idea that the central government should target funding for specific projects.

For the first time in its history, radiology in Canada has united. That unity of voice … totally changed the face of our relationship with government and the public.

—Normand Laberge

They agreed with us and in the budget year 2000, they gave the provinces a $1 billion medical imaging fund to buy equipment."

But the plan went awry because the rules did not limit provinces to medical imaging equipment. Some of the cash was used to buy such items as lawn tractors, delivery trucks, bed lifters and floor scrubbers.

CAR blamed the provinces for mismanagement of the $1 billion fund and cited a study showing that more than half the diagnostic imaging units in Canada required immediate replacement. That led to a published report by the Kirby senate committee, which concluded that medical imaging was indeed key to the future of healthcare because it improved diagnosis and treatment and reduced healthcare costs.

The House of Commons then created a Royal Commission led by Roy J. Romanow, which recommended in November 2002 that "the federal government initiate a long-term program to assist provinces and territories in financing both the acquisition and ongoing operation of healthcare technology. Such a program should incorporate clear accountability mechanisms on the part of the provinces and territories on their use of these targeted federal funds."

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But the battle wasn't over yet. After release of the Romanow report, the minister of health announced that she would conduct a special meeting in February 2003 with the first ministers of each province to decide which parts of Romanow to implement. CAR had two months to increase momentum toward ensuring that medical imaging remained paramount.

"We decided on a major strategy—probably the biggest CAR ever undertook—where we bought publicity in the major newspapers and radio, and for the first time we were asking patients to come forward," says Laberge. "We set up an 800 phone line for patients to tell their stories. We needed to illustrate the suffering of those waiting for an imaging procedure and put faces on those statistics."

The plan worked. Thousands of Canadians called and made appearances on broadcast stations from coast to coast. At the February prime ministers' conference, it was agreed that $1.5 billion should be targeted to medical imaging in Canada. Furthermore, an advisory committee, with Laberge as a member, was established to make sure the money is spent appropriately.

Simultaneously, CAR's new leadership was working hard to unify radiology and give the association added credibility. Quebec was the first province to unify followed by Alberta. To date, only a few local organizations have not joined. In four years, CAR membership has risen from 46 percent to 86 percent of the nation's 2,000 radiologists.

"What has made the difference is the fact that for the first time in its history, radiology in Canada has united. That unity of voice, which also involves industry, totally changed the face of our relationship with government and the public," says Laberge. "Speaking as one voice, even if we are only 2,000 radiologists and a couple of companies, made a big difference. We had more power than the [Canadian] medical profession as a whole, and there are 60,000 physicians in Canada."

David B. Fraser, M.D.
1986 CAR President

Dr. Lentle, retired chairman of the department of radiology at the University of British Columbia, says the situation is enormously more promising than it was four or five years ago. "There had been a growing sense of disillusionment with CAR simply because people saw it as a club for a minority of academic radiologists, not as something that was going to do very much for them," says Dr. Lentle, who adds that Canadian radiology is not out of the woods yet.

For one thing, the future of the medical imaging budget in a publicly funded health system is uncertain. "Clearly there has to be a capital budget that is realistic," he says. "This is not rocket science. If you don't have a replacement cycle for your equipment—which is somewhere around 10 years—you're going to get into trouble."

"We must recognize that the future of radiology depends as much on research and academic activities as it does on lobbying," says Dr. Lentle. "You don't secure the future of the specialty in the political back rooms. It will be done by the people using the equipment and the opportunities they are given to demonstrate radiology's effectiveness and utility."

Former RSNA president and former CAR president David B. Fraser, M.D., agrees that this new federal commitment is a major improvement, not only for radiology, but also for primary care and other specialties that will benefit from improved medical imaging. "But the major message has come from the Canadian public," says Dr. Fraser, professor emeritus in the Department of Diagnostic Radiology at Dalhousie University in Halifax. "In my view, the pressure from the public has indicated that they want better healthcare. They're fed up with long wait lists. They're fed up with the fact that they can't get access to high technology care."

Dr. Fraser says radiology has rallied in the face of formidable odds, noting that Canadian radiologists don't have the benefit of separate organizations such as RSNA to handle research and education while the American College of Radiology concentrates on lobbying activities. In that light, he says, the turnaround accomplished by the new regime at CAR is even more remarkable. □

NSBRI Explores the Frontiers of Space Research

The National Space Biomedical Research Institute (NSBRI) is helping to pave the way for human exploration of space with research projects aimed at developing solutions to the health-related problems and the physical and psychological challenges of long-duration space travel. Among nearly 100 research projects now under way are several promising efforts on the effects of radiation and new developments in advanced radiologic technology.

The Houston-based NSBRI was established in 1997 through a NASA competition. The program involves more than 269 investigators from 75 universities and institutions in 22 states. NSBRI is governed by a consortium of 12 leading institutions.

"The partnership between NSBRI and NASA is very strong," says NSBRI Director Jeffrey P. Sutton, M.D., Ph.D. "I think that the NSBRI provides excellent engagement of the academic community and resources at large, as well as an outstanding clinical presence to work with NASA's expertise in engineering and operations to provide the very best research and medical care capabilities to ensure the health and safety of the astronauts."

The NSBRI research program focuses on an integrated research plan utilizing theme-based teams. Projects are under investigation in 11 research areas:

- Bone Loss
- Cardiovascular Alterations
- Human Performance Factors, Sleep and Chronobiology
- Immunology, Infection and Hematology
- Muscle Alterations and Atrophy
- Neurobehavioral and Psychosocial Factors
- Neurovestibular Adaptation
- Nutrition, Physical Fitness and Rehabilitation
- Radiation Effects
- Smart Medical Systems
- Technology Development

Jeffrey P. Sutton, M.D., Ph.D.
NSBRI Director

Marcelo E. Vazquez, M.D., Ph.D.
NSBRI Radiation Effects Team

The work of the Radiation Effects Team and the Technology Development Team is perhaps of greatest interest to the radiologic community.

"The NSBRI has a strong, diverse Radiation Effects Team that works collaboratively and productively with NASA scientists and engineers," says Dr. Sutton. "We are proud of the fact that Brookhaven National Laboratory is a member of our consortium of academic institutions, and that the cooperation among the different NSBRI projects adds value to the institute and also to NASA's radiation research program."

John Dicello, Ph.D., of Johns Hopkins University School of Medicine in Baltimore, is the Radiation Effects Team Leader. His research focuses on the risk of carcinogenesis.

Dr. Dicello says one of the first considerations is that particles in space are very ionizing. "You might imagine them like a hot poker," he says. "And when they go through a cell, they do a lot more damage than ordinary protons that are background radiation on Earth or in use in therapy."

"So the first issue was, with these types of particles at the doses we're talking about, could we modify and reduce the risk of cancer?" he asks. "Our initial results indicate that, yes, that can be done."

Dr. Dicello says his project called

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for rats to be exposed to particles that are produced on Earth but that are similar to the ones in space. "We have examined them with and without tamoxifen after they were exposed. We're able to see a reduction in the number of cancers as a result of administering tamoxifen," he says. "So that's very encouraging."

The research applied to very energetic, highly ionized particles. "Basically, at least in the preliminary studies, we're seeing a positive result in terms of our hypothesis," Dr. Dicello says. "So that's exciting."

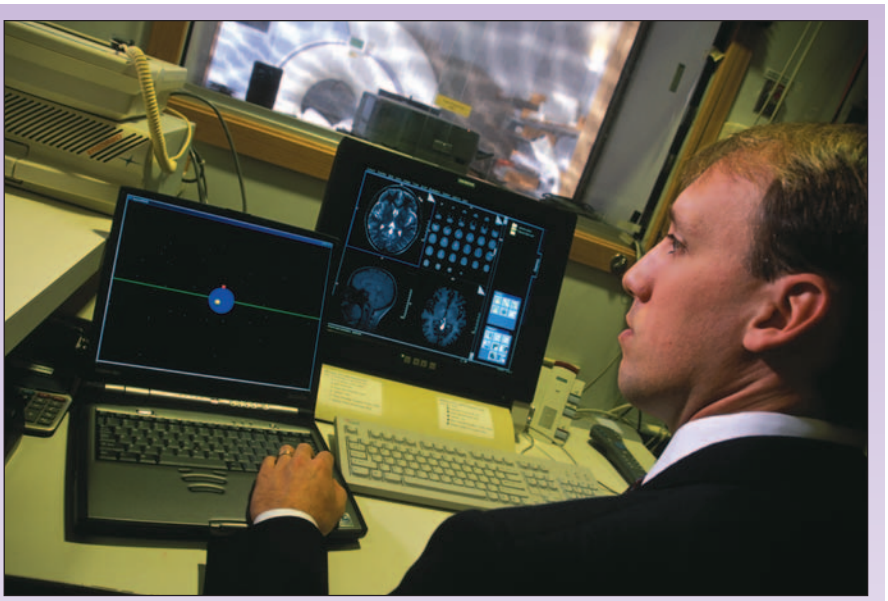
Marcelo E. Vazquez, M.D., Ph.D., of Brookhaven National Laboratory in Upton, New York, is the associate team leader for the Radiation Effects Team. "Mainly, my research interest is to understand the effect of space radiation on brain function and structure," he says.

Dr. Vazquez is working on two projects for NSBRI. One is dedicated to studying the effects of space radiation on neurons and neural stem cells. Established human neural cell lines are exposed to different types of radiation—heavy ions, protons and gamma rays—to examine the cellular and molecular effects and look at possible countermeasures to modify brain cell response to radiation.

"Research from the cell study indicates that a dose of heavy ions and protons can produce cell death in very low doses, compared with regular radiation like gamma rays," Dr. Vazquez says.

His other proposal is dedicated to characterizing the behavioral changes induced by a low dose of heavy particles. The proposal calls for irradiating mice with heavy ions, protons and gamma rays. The animals would then undergo behavioral testing month by month to detect locomotor activity changes and alterations on memory and learning.

Ann Kennedy, Ph.D., from the University of Pennsylvania School of



Near-infrared spectroscopy and functional MR imaging are being used to validate an imaging cap that will allow remote assessment of brain function. A simulated space-docking task will be used to assess performance during high-level tasks.

Photos courtesy of the NSBRI

NSBRI Consortium Members

- Baylor College of Medicine (lead institute)
- Brookhaven National Laboratory
- Harvard Medical School
- The Johns Hopkins University School of Medicine and Applied Physics Laboratory
- Massachusetts Institute of Technology
- Morehouse School of Medicine
- Mount Sinai School of Medicine
- Rice University
- Texas A&M University
- University of Arkansas for Medical Sciences
- University of Pennsylvania Health System
- University of Washington

The Advanced Multiple Projection Dual Energy X-ray Absorptiometry (AMPDXA) Scanning System being readied for use in initial clinical trials is larger and heavier than the proposed NSBRI prototype, which is estimated to weigh 100 pounds. The device, a project of the NSBRI Technology Development Team, will provide 3-D images and analysis of bone and muscle structure.

Medicine, is also an associate team leader. Her research focuses on dietary countermeasures for space radiation biological effects.

Dr. Sutton says coordinated efforts and collaborations between teams allow NSBRI to achieve solutions that might not be obtainable with a single team. "One of the strengths of the NSBRI is that we have an integrated, multidisciplinary team approach to conducting research that provides a unique enabling role for NASA biomedical research," he says.

The NSBRI Radiation Effects Team interacts with other teams, including the Nutrition, Physical Fitness and Rehabilitation Team and the Infection, Immunology and Hematology Team. "In this way, we are able to look at cross-cutting research efforts to investigate risks and provide solutions, such as altering diet, to potentially harmful effects of space radiation on biological tissue," Dr. Sutton says.

"There are interesting synergies in research efforts between the Radiation Effects Team and the Infection, Immunology and Hematology Team with respect to the potential protective role of gamma globulin exchange as a means of reducing the risk of radiation to biological tissues," he continues.

We welcome involvement and collaborations with the academic community at large.

—Jeffrey P. Sutton, M.D., Ph.D.

"The National Space Biomedical Research Institute seeks to engage excellent investigators from across the country who are interested in working on important problems on the frontier of space life sciences and space radiation research. We welcome involvement and collaborations with the academic community at large," Dr. Sutton says.

For more information on NSBRI, go to *www.nsbri.org*. □

NASA Mission Specialist Laurel B. Clark, M.D., was a member of NSBRI's User Panel, an advisory group comprising former and current astronauts and flight surgeons that ensures the NSBRI research program is focused on astronaut health and safety. Dr. Clark was among the seven astronauts who lost their lives when the Space Shuttle Columbia disintegrated on re-entry into Earth's atmosphere in February.

History of the RSNA—Part 23

New Beginnings

In 1989, RSNA was 75 years old. That year's scientific assembly was to be a celebration of the Society's endurance and radiology's growth.

RSNA's Fourth Executive Director

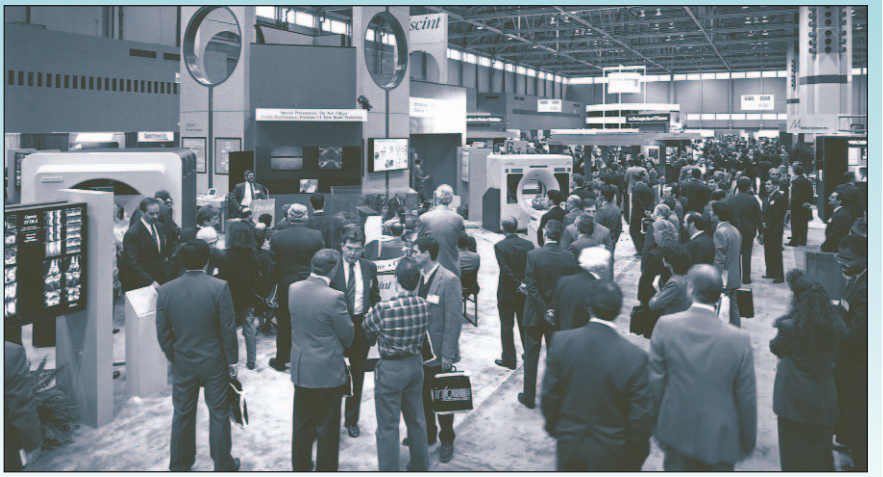
Earlier that year, the Board of Directors had selected Delmar J. Stauffer to be the fourth executive director for the Society. Stauffer had been a science teacher before beginning a career in association management. He worked with the American Medical Association, the American Dental Association and the Chicago Dental Society.[1] Stauffer enthusiastically accepted the challenge of managing RSNA and once compared his becoming the Society's executive director to jumping onto a speeding train.[2] In addition, Merle Hedland was named the Society's new director of scientific meetings, replacing the retiring George Schuyler.

At that same time, William J. Tuddenham, M.D., announced his retirement as editor of *RadioGraphics*—a journal he had created. William W. Olmsted, M.D., from the George Washington University Medical Center in Washington, D.C., was selected to be the new *RadioGraphics* editor.

A Move Down the Street

RSNA had grown so much over the past decade that the Society headquarters had to be moved to more spacious facilities a few blocks away in Oak Brook, Ill.

Meanwhile, the scientific assembly had become so large that the 1989 meeting occupied a portion of the newly constructed North Building at McCormick Place as well as the original Lakeside Center. The two buildings were connected by a walkway dubbed the "spine" by RSNA staff. The walkway went over half of Lake Shore Drive and under the other half. This design resulted in a series of short escalators that would create bottlenecks for the next 10 meetings as it slowed attendees moving from one building to another to view exhibits or to hear lectures.



The RSNA '91 Technical Exhibition was held in the North Building of McCormick Place as well as in the Lakeside Center. The use of both exhibit halls allowed creation of wider aisles, which reduced congestion on the exhibit floors.

Many RSNA members began voicing concerns that the scientific assembly had become too large and that they were overwhelmed by the extensive scientific program.

RSNA Program Committee Chairman Derek C. Harwood-Nash, M.B., Ch.B., recognized that the scientific assembly had to display innovations in radiology while also being accessible and valuable to the practicing radiologist, radiation oncologist and medical physicist worldwide. Through his leadership, RSNA produced *Walk through the Week* brochures that outlined a customized scientific assembly based on subspecialty topics. The first brochure was unveiled at the 1989 meeting and focused on interventional radiology. Plans were made to expand the idea to include neuroradiology, musculoskeletal radiology, gastrointestinal radiology and magnetic resonance imaging for subsequent annual meetings.[3]

The expanding scientific assembly was detailed by Robert E. Campbell, M.D., during his 1989 presidential address. Dr. Campbell noted that in 1974, during the last meeting held at the Palmer House hotel, technical exhibits occupied 43,000 square feet. In 1989, they occupied 305,000 square feet. The largest technical exhibitor took up 640 square feet in 1974; in 1989, the largest exhibitor occupied 15,000 square feet. He also noted that the scientific exhibits had increased from 80 in 50 small rooms at the Palmer House to 400 in 60,000 square feet at McCormick Place. Refresher courses had more than doubled from 72 to 185 and the number of scientific papers had increased substantially from 83 to 1,422.

"The future of your Society is bright. The horizons for growth and progress appear unlimited," said Dr. Campbell.[4]

Introducing *info*RAD

Dr. Campbell's words seemed especially prescient in 1990. By that year, the RSNA Scientific Assembly was the largest annual medical meeting in the world. The centerpiece of the meeting was the introduction of a concept and demonstration area for the display and hands-on use of computer-based education, research and practice-management programs and databases. This new area was initially envisioned by RSNA Electronic Communications Committee Chairman Edward V. Staab, M.D., and was called *info*RAD for "informatics in radiology."

The 1990 meeting was also notable because it featured an "Introduction to Research" course for second-year residents. The brainchild of RSNA Refresher Course Committee Chairman C. Douglas Maynard, M.D., the course was co-sponsored by RSNA, the American Roentgen Ray Society and the Association of University Radiologists. The course dealt with topics such as basic principles of clinical research, rules and regulations governing animal and human research, the state of imaging technology and chemistry research, and how to write a grant proposal. In addition, the RSNA Research and Education Fund began a Research Resident Program, which was designed to provide second- and third-year residents an opportunity to explore research careers in academic radiology by offering them $25,000 to spend a year of their training in research.

RSNA News was launched in 1991 as an eight-page, two-color newsletter.

RSNA also began publishing a meeting newspaper called the *Daily Bulletin,* which informed attendees of important events and was distributed in major hotels, on the buses and on newsstands in McCormick Place.

During his 1990 presidential address, E. Robert Heitzman, M.D., acknowledged emerging challenges for the medical field. Healthcare practices, such as radiology, were being affected by increasingly stringent reimbursement policies and greater government intervention. Dr. Heitzman reminded physicians that "medicine is caring for patients and their needs. [It] remains the most fulfilling and ennobling of all professions." He added, "RSNA must influence change in an era of monumental evolution. Radiology, due to its dependence on technology, is clearly being placed in the forefront of this evolution."[5]

More Staff Changes

Once settled in their new Oak Brook headquarters, RSNA employees and volunteers handled more projects in 1991. As well as assisting the Society of Cardiovascular and Interventional Radiology with the publishing of its *Journal of Vascular and Interventional Radiology,* RSNA helped the Society for Magnetic Resonance Imaging launch its new *Journal of Magnetic Resonance Imaging.*

Also in 1991, Donald A. Stewart left RSNA to serve as managing editor of the *American Journal of Neuroradiology.* Manager of RSNA publications, Roberta E. Arnold, M.A., M.H.P.E., replaced him as the Society's director of publications.

Later that year, RSNA started another publication—a quarterly newsletter called *RSNA News,* which was to inform Society members of RSNA business and plans. RSNA had never had a regular publication devoted solely to communicating with its members about the Society. "It is hoped that *RSNA News* will not only better identify and explain the workings of the Society, but also provide a forum for member comment and reflect the spirit of volunteerism that is essential to the success of all RSNA activities," RSNA President Carl J. Zylak, M.D., wrote in the inaugural issue.[6] □

References

1. Maynard CD. Delmar J. Stauffer, 1939–2000. *RSNA News* 2000; 10(4):3.
2. Stauffer DJ. Personal communication, 1991.
Relevant, innovative annual meeting constant goal of RSNA Program Committee. *RSNA News* 2001; 11(4):8.
4. Campbell RE. Radiological Society of North America, Inc., 1965–1989: quarter century of rapid growth and progress. *Radiology* 1990; 175:1–7.
5. Dr. Heitzman reviews progress and challenges. *RSNA Daily Bulletin* 1990; Sunday:1,12.
6. Zylak CJ. Need for a newsletter. *RSNA News* 1991; 1(1):1.

The entire *History of the RSNA* series, to date, is available on our Web site at *www.rsna.org/about/history/index.html.*

Robert E. Campbell, M.D.
1989 RSNA President

E. Robert Heitzman, M.D.
1990 RSNA President

Carl J. Zylak, M.D.
1991 RSNA President

Working For You

Category 1 CME credit is available during scientific poster sessions when the author is present for discussion.

NEW

Easier Schedule at RSNA 2003

In response to members' suggestions, an additional 30 minutes will be added to the lunch period at the RSNA Scientific Assembly and Annual Meeting. Beginning this year, attendees will have 90 minutes to eat lunch, attend scientific poster sessions, visit the exhibits and socialize with colleagues.

For those attending the Essentials of Radiology refresher course series on Tuesday, December 2 and Wednesday, December 3, the lunch period will be 60 minutes.

A copy of the RSNA 2003 tentative program grid was included in the April issue of *RSNA News.*

Technical Exhibition Closes at 5 p.m.

The hours of operation have been modified for the RSNA 2003 Technical Exhibition. Instead of the traditional closing at 6 p.m. Sunday through Wednesday, the technical exhibition will close at 5 p.m. Hours will remain 10 a.m. to 2 p.m. on Thursday.

The shuttle bus schedule will be adapted accordingly.

Radiation Biology Essentials

RSNA members and residents can take advantage of an updated Web study tool on the Education Portal of *RSNA Link.* Radiation Biology Essentials: Questions and Answers *(www.rsna.org/education/residents)* presents essential radiation biology topics with board-type questions and answers. Developed by Eric J. Hall, D.Sc., new information has been added about the radiation effects on the developing embryo and fetus.

InteractED Adds New Cases, Refresher Courses

More than 300 peer-reviewed programs are available for study online through InteractED *(www.rsna.org/education/interactive/index.html)*— a free benefit of RSNA membership.

The latest additions are:

Chest Case of the Day
Coordinator:
Sanjeev Bhalla, M.D.

Gastrointestinal Case of the Day
Coordinator:
Perry Pickhardt, M.D.

Genitourinary Case of the Day
Coordinator:
Nancy S. Curry, M.D.

RSP 910
MRI of Pains and Strains: Muscle and Tendon Injury
Speaker:
William E. Palmer, M.D.

RSP 911
MRI of Osseous Injuries in Sports Medicine
Speaker:
Andrew H. Haims, M.D.

RSP 912
MRI Arthrography
Speaker: Lee D. Katz, M.D.

Working For You

JANET COOPER

SERVICE TO MEMBERS:

The Convention Operations area of the RSNA Meetings Department is responsible for the overall operations and logistics of the RSNA Scientific Assembly and Annual Meeting. Because the RSNA meeting is the largest annual medical meeting in the world, careful planning and efficient, effective interaction with all RSNA departments are critical.

Convention Operations manages meeting room sets and coordinates services including audiovisual, food and beverages, electrical, transportation, security, emergency preparedness, display signs and childcare. Convention Operations also coordinates the activities of temporary, contractor and facility personnel, and organizes and manages the association service areas which include layouts, floor plans and furnishings.

WORK PHILOSOPHY:

I have a strong work ethic and an intense commitment to excellence. I will do whatever it takes to get the job done and be a team player. I am very detail-oriented and organized, which are important skills in the meeting planning industry. I strive to be a life-long learner, to learn as much as I can about the profession from all of those around me and to share this knowledge with my peers. In my department, we work hard all year long in organizing and planning the Scientific Assembly—but we always find the time to have fun.

WORKING FOR YOU PROFILE

NAME:
Janet Cooper

POSITION:
Managing Director, Convention Operations

WITH RSNA SINCE:
July 14, 1994

If you have a colleague who would like to become an RSNA member, you can download an application at *www.rsna.org/about/membership/memberapps.html*, or contact the RSNA Membership and Subscription Department at (630) 571-7873 or *membersh@ rsna.org.*

Continued from page 10

Strategies for Running a Successful Radiology Practice

RSNA is sponsoring a course for current and future academic chairs and leaders of private practice groups, July 11-13, 2003, in Oak Brook, Ill. During this 2½-day course, you will learn about issues relevant to future leaders in radiology, enabling you to navigate the obstacles each leader will face. Attend sessions on financial, quality control, billing, compliance and legal issues as well as general strategies. Didactic morning lectures are followed by split interactive breakout sessions for academic or private practice strategic planning in the afternoon on Friday and Saturday.

Register Online!

Register online at *www.rsna.org/education/shortcourses.*

Registration is $695 for RSNA members, $275 for RSNA members-in-training and $795 for non-members. For more information, contact the RSNA Education Center at (630) 368-3747 or *ed-ctr@rsna.org.*

Radiation Oncologist Calls RSNA Grant Program "Life Altering"

Thomas A. Buchholz, M.D. (left), recipient of an RSNA Research Fellowship and RSNA Research Seed Grant, is shown with James D. Cox, M.D., head of the Division of Radiation Oncology at the M.D. Anderson Cancer Center in Houston.

Anyone considering a career in academic radiation oncology might want to talk with Thomas A. Buchholz, M.D. He'll give you quite a pep talk.

"This is one of the most exciting times in radiation oncology and by choosing a career path in academic oncology, you can literally be part of an important era in the history of medicine," he says.

Dr. Buchholz is an associate professor in the Department of Radiation Oncology at the University of Texas M.D. Anderson Cancer Center in Houston. He's also an associate member of the graduate school of biomedical sciences at the University of Texas Houston Science Center.

Dr. Buchholz received his M.D. from Tufts University School of Medicine in Boston. He later served as an active duty Major in the United States Air Force for four years.

Dr. Buchholz is a 1992-1993 RSNA Research Fellow and a 1999-2000 RSNA/Philips Research Seed Grant recipient.

"The fellowship had a significant impact on my career. At that time, I had finished my residency training at the University of Washington Medical Center in Seattle and had an interest in academic radiation oncology. The fellowship gave me the time I needed for a focused period of research," he says.

Through the fellowship, I was introduced to principles of how to properly conduct research.
— Thomas A. Buchholz, M.D.

During his fellowship, Dr. Buchholz performed a pilot animal study to test concomitant boron neutron capture therapy (BNCT) during in vivo fast neutron radiation of a rat glioma. He presented the results of his research at RSNA 1993 and they were later published in *Radiology*.[1] "Through the fellowship, I was introduced to principles of how to properly conduct research," he says.

While he has subsequently elected to pursue a career with a greater emphasis on clinical radiation oncology, he feels that this period of laboratory study was important. "These experiences have allowed me to participate in a number of diverse translational research projects. The majority of these projects are done in collaboration with basic scientists who have a shared interest. My fellowship training provided me with a sufficient background and interest in basic sciences to serve as an effective collaborator," Dr. Buchholz says.

In some instances he brings clinical questions to basic science laboratories and utilizes the skills and resources available in these laboratories to pursue new lines of study. For example, as the recipient of an RSNA Research Seed Grant, Dr. Buchholz was the principal investigator of a study of cellular radiosensitivity associated with a germline mutation in BRCA1 or BRCA2 that was subsequently published in *The International Journal of Cancer*.[2]

In other instances, Dr. Buchholz has helped basic scientists move their hypotheses derived from laboratory studies into the clinic. For example,

working with Khandan Keyomarsi, Ph.D., their research team showed the abnormalities in cyclin E, a regulator of the cell cycle, can affect survival rates among breast cancer patients.

This study, published late last year in *The New England Journal of Medicine*,[3] showed all of the 102 patients with stage I breast cancer and low levels of cyclin E were alive five years after the diagnosis, whereas all 12 patients with high levels of low-molecular-weight cyclin E died of breast cancer within that five-year period. A prospective validation study is under way. "My colleague, Dr. Keyomarsi, is also working to understand the biochemistry of cyclin E and seeking novel strategies for turning off this switch," he says.

Respect from his Peers

Today, Dr. Buchholz is giving back to RSNA. Since 1999, he has been an invited refresher course speaker on the molecular biology of breast cancer. "During my professional lifetime, this field will change dramatically. This is such a dynamic time to be a radiation oncologist," he says.

His peers and his students have great respect for him. Dr. Buchholz received the Faculty Scholar Award from M.D. Anderson in 2002. He also received the Excellence in Teaching Award, which is given annually by the residents in Radiation Oncology, and the Teacher of the Year Award from the Association of Residents in Radiation Oncology. He's listed in "Best Doctors in America" in 2002.

James D. Cox, M.D., head of the Division of Radiation Oncology at M.D. Anderson, says Dr. Buchholz is widely recognized inside and outside of their institution.

"He has become one of the young stars of this institution. He's busy clinically. He's one of the leading researchers in translational research relating to breast cancer. He is a respected speaker at RSNA and other conferences. He's also a leader in terms of his teaching and administratively with ever increasing responsibilities as a member of task forces within M.D. Anderson," says Dr. Cox.

He adds that Dr. Buchholz's career is blossoming. "RSNA can be very, very proud of him as we are." □

References:
1. *Radiology* 1994; 191:863-867
2. *Intl J Cancer* 2002; 97:557-561
3. *N Engl J Med* 2002; 347:1566-1575

For more information about grants from the RSNA Research & Education Foundation, contact Scott Walter at (630) 571-7816 or at *walter@rsna.org.*

June 15 is the deadline for applications for RSNA Education Grants. For more information, or for an application, go to *www.rsna.org/research/foundation/application.html.*

JOURNALS

Radiology in Public Focus

A press release has been sent to the medical news media for the following scientific article appearing in the May issue of *Radiology (radiology.rsnajnls.org):*

"Dynamic Imaging of Distal Airways in Humans Using Hyperpolarized 3He MRI: Feasibility"

Dynamic hyperpolarized 3He MR imaging of the human airways can provide information currently not available with other techniques.

Angela C. Tooker, Mitchell Albert, Ph.D., and colleagues from the Department of Radiology at Brigham and Women's Hospital in Boston used a fast gradient-echo pulse sequence during inhalation on six adult volunteers.

The result was dynamic images showing differential contrast of both distal airways and lung periphery, with distal airway visualization up to the 7th generation. This is unlike static hyperpolarized 3He MR images, in which only the lung periphery is seen.

The researchers write, "Our approach can easily be applied in a clinical setting to image the airways and lung periphery. … In the future, dynamic hyperpolarized 3He imaging of the airways may play a role in the investigation of the distinctive nature of pulmonary airway narrowing and expansion in asthmatic lungs. Hyperpolarized 3He dynamic airway imaging might provide a quantitative assessment of the degree of airway closure and the subsequent number of non-ventilated alveolar regions."
(*Radiology* 2003; 227:575-579)

RSNA press releases are available at *www2.rsna.org/pr/pr1.cfm.*

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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 between **February 27, 2003** and **March 27, 2003.**

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Canadians can now join the RSNA President's Circle by donating at least $1,500 to the Foundation in Canadian dollars. For more information contact Rita Lietz at (630) 590-7742 or *lietz@rsna.org.*

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News about RSNA 2003

Advance Registration and Housing Brochure

The Advance Registration and Housing brochure is available this year in electronic format only.

The brochure is posted on *RSNA Link (www.rsna.org)* as a portable document format (PDF) file.

It is also available by fax-on-demand by calling (847) 940-2146. Enter your fax number and a document number—1300 for the entire brochure or 1375 for the registration form only.

NEW

Onsite Registration Moves to Lakeside Center

Advance registration for RSNA 2003 is under way. Admittance to the scientific assembly is free with advance registration for RSNA members and members of the American Association of Physicists in Medicine. Onsite, the fee for this registration category is $100.

Onsite registration will now be located in the Lakeside Center, Hall E. This new location puts attendees closer to the scientific posters, education exhibits, the *info*RAD area and the Arie Crown Theater where all of the plenary sessions are held. In addition, the Lakeside Center houses the Education Center Store, the Residents Lounge, the Membership/Publications Booth and the Research & Education Pavilion.

Refresher Course Enrollment

General registration for RSNA 2003 opens May 27. Enrollment for refresher courses begins June 23. In mid to late June, a printed copy of the Refresher Course Enrollment brochure will be mailed. An electronic version will also be available by download or fax.

CME Update: Earn up to 80.5 hours of category 1 CME credit at RSNA 2003!

Onsite registration at RSNA 2003 will be located in the Lakeside Center across from the entrance to the Arie Crown Theater.

Registration Made Easy

Once you download the advance registration information from *RSNA Link (www.rsna.org)* or have it faxed to you, there are four easy ways to complete the registration process:

Online (24 hours a day)
www.rsna.org/register/
Enter your membership identification number found on the mailing label of your access instructions or on the cover of *RSNA News*. The entire process takes only a few minutes. If you request hotel reservations, a hotel room deposit will be charged to your credit card.

Fax (24 hours a day)
(800) 521-6017
(847) 940-2386 outside the United States and Canada

Phone (Monday – Friday, 8:00 a.m. – 5:00 p.m. CT)
(800) 650-7018
(847) 940-2155 outside the United States and Canada

RSNA'03
COMMUNICATION FOR BETTER PATIENT CARE
November 30 – December 5
McCormick Place, Chicago

Please be ready to provide the following information:

- Registration information (name, organization, phone, etc.)
- Fax and e-mail address, if available
- Arrival and departure dates
- Preferred hotels
- Type of hotel room preferred (single, double, etc.)
- Special preferences (smoking, special needs, etc.)
- Credit card information (for hotel deposit)

Mail
ExpoExchange/RSNA 2003
108 Wilmot Rd., Ste. 400
Deerfield, IL 60015-0823

Keep a copy of your completed registration form for your records.

News about RSNA 2003

Registration Fees

BY 10/31	ONSITE	
$0	$100	RSNA Member, AAPM Member
$0	$0	Member Presenter
$0	$0	RSNA Member-in-Training and RSNA Student Member
$0	$0	Non-Member Refresher Course Instructor, Paper Presenter, Poster Presenter, Education or Electronic (*info*RAD) Demonstrator
$110	$210	Non-Member Resident/Trainee
$110	$210	Radiology Support Personnel
$520	$620	Non-member Radiologist, Physicist or Physician
$520	$620	Hospital Executive, Research and Development Personnel, Medical Service Organization, Healthcare Consultant, Industry Personnel
$300	$300	One-day registration to view only the Technical Exhibits area.

For more information about registration at RSNA 2003, visit *www.rsna.org,* call (630) 571-7862 or e-mail *reginfo@rsna.org.*

Mark your Calendar

We would like to extend an invitation to attend the 23rd International Congress of Radiology (ICR) to be held in Montreal from June 25 to 29, 2004 at the Palais des Congrès de Montréal.

About 3,000 attendees are expected from around the world. Along with taking a glimpse into new approaches and new applications of medical imaging technology, this event will allow you to keep track of any changes that we may have to confront in the ever-evolving world of radiology. The goal of the meeting is to represent the international context in which radiology is both done and managed. Fifteen concurrent tracks as well as five symposia will be held. For more information please visit our Web site at *www.icr2004.com.*

We hope you will join us and participate actively in our 2004 meeting, hosted by the friendly and cosmopolitan city of Montreal, Canada. ☐ ☐ ☐

NEW

Residents Housing Available

In response to increasing requests for more affordable accommodations, RSNA has added Hostelling International–Chicago to its block of hotels for the annual meeting. This new property is located in the heart of the Loop, just two blocks from Michigan Avenue.

The new Chicago hostel offers dormitory-style rooms with six to 12 beds per room. Accommodations are separate for men and women. Rest rooms and shower facilities are plentiful. For more information, see the *Advance Registration and Housing* brochure.

Benefits of the RSNA Housing Block

There are 65 hotels participating in the RSNA block this year. A few of the benefits of reserving your room through the RSNA housing bureau include:

- Maximum customer service provided by RSNA staff should a housing dispute arise
- Complimentary shuttle and Metra service to and from McCormick Place
- Helps RSNA negotiate the lowest possible hotel rates for all attendees

Important Dates for RSNA 2003

May 27	General registration and housing opens
June 23	Course enrollment opens
Oct. 10	Registration deadline for Non-North American participants to have badge wallet mailed
Oct. 31	Final advance registration deadline
Nov. 30–Dec. 5	RSNA 89th Scientific Assembly and Annual Meeting

RSNA 2003 Exhibitor News

Advertising at RSNA 2003

Many opportunities exist for promoting your exhibit at RSNA 2003—the world's largest annual medical meeting. For more information, see *www.rsna.org/advertising/index.html* or contact:

Jim Drew
Director of Advertising
(630) 571-7819
jdrew@rsna.org

Judy Kapicak
Advertising Manager
(630) 571-7818
jkapicak@rsna.org

June Exhibitor Planning Meeting

Booth assignments will be released June 24 at the Exhibitor Planning Meeting and Luncheon. All exhibitors for RSNA 2003 are invited to attend at Rosewood Restaurant and Banquets near Chicago's O'Hare International Airport. The meeting is from 10 a.m. until 2 p.m.

Important Exhibitor Dates for RSNA 2003

June 24	Exhibitor Planning/Booth Assignment Meeting
July 3	Exhibitor Service Kit available online only
July 9	Block Housing Deadline Date
July 31	Deadline for reduction/cancellation (for full refund)
	Deadline for Product Information Form inclusion in RSNA *Buyer's Guide*
Aug. 4	Hotel assignments are mailed to Block Housing Exhibitors
Aug. 15	Deadline for final payment
Oct. 31	Exhibitor Badge deadline
Nov. 30–Dec. 5	RSNA 89th Scientific Assembly and Annual Meeting

State-of-the-art technologies are the hallmark of the RSNA Technical Exhibition. In 2002, more than 24,000 radiology professionals viewed the technical exhibits.

NEW

Technical Exhibit Hours

Sun., Nov. 30–Wed., Dec. 3	10:00 a.m.–5:00 p.m.
Thurs., Dec. 4	10:00 a.m.–2:00 p.m.

For more information, contact RSNA Technical Exhibits at (630) 571-7851 or e-mail: *exhibits@rsna.org.* For up-to-date information about technical exhibits at RSNA 2003, go to *www.rsna.org/rsna/te/index.html.*

www.rsna.org

Exhibitor Prospectus

The RSNA 2003 *Exhibitor Prospectus* is available as a series of portable document format (PDF) files in the "Technical Exhibitors" area of *RSNA Link* at *www.rsna.org/rsna/te/prospectus.*

The prospectus provides exhibitors with important information about exhibit space, advertising opportunities, schedules, RSNA services, rules and regulations, floor plans and *Buyer's Guide* submission forms.

2002 *RSNA Annual Report*

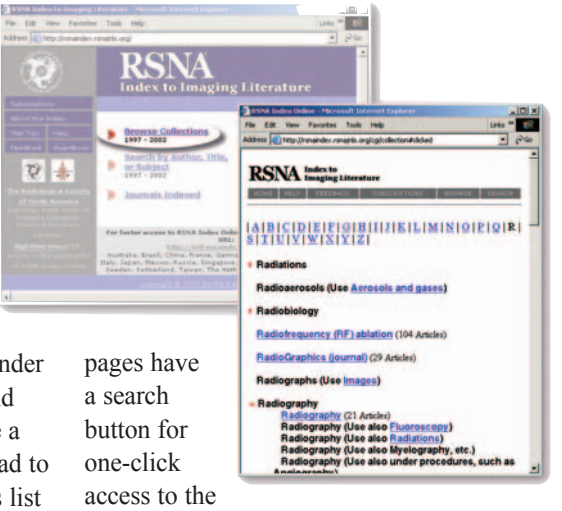
The 2002 *RSNA Annual Report* is now available for download as a PDF document in the "About RSNA" section of *RSNA Link* at *www.rsna.org/about/annualreport.html.* The 2000 and 2001 annual reports are also available.

OTHER WEB NEWS

Future Research Directions Report Released

The summary report for the "NIBIB Workshop on Future Research Directions" has been released. It is available at *www.nibib1.nih.gov/events/futuresworkshopreport.pdf.*

To Search or Not to Search



Do you prefer to browse rather than to use a search engine? If so, you'll find the "Browse" button for the *RSNA Index to Imaging Literature (rsnaindex.rsnajnls.org)* an easy way to explore topics in radiology.

Listings are in alphabetical order. At first glance, you might wonder why some topics are hyperlinked and others are not. Unlinked topics have a black arrowhead. Click the arrowhead to open a hidden list of subtopics. This list can point to dozens or hundreds of abstracts at MEDLINE or articles, editorials and other materials in *Radiology* or *RadioGraphics.* For example, try "G" and "Gastrointestinal tract" or "R" and "Radiography."

You can close the expanded list of subtopics by clicking on the arrowhead. If you need a more targeted search, the top and bottom of the alphabetized pages have a search button for one-click access to the main search page. There, you can search the *RSNA Index* database by author or by words in the title, a range of years of publication, or both.

Access to *RSNA Index to Imaging Literature* is open to all. Of course, you need to be an RSNA member or subscriber in order to access RSNA journal materials listed in the index.

PDA Downloads from RSNA Journals

Do you have a Palm, Handspring or other personal digital assistant (PDA) that uses the Palm operating system? If so, you can download tables of contents, abstracts and some full-text material from the current RSNA journal issues.

An easy way to access this new service is to go to *Radiology Online (radiology.rsnajnls.org)* or *RadioGraphics Online (radiographics.rsnajnls.org)* and follow the "PDA Linkup" link. A brief introduction will take you to a PDA software installation page. Each journal has a separate software package.

Support for PocketPCs is under development.

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CME Credit Repository
www.rsna.org/cme

RSNA Index to Imaging Literature
rsnaindex.rsnajnls.org

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Medical Meetings
June – August 2003

JUNE 1–4
10th Congress of the World Federation for Ultrasound in Medicine and Biology (WFUMB), Montreal Convention Center, Quebec • (800) 638-5352 or *www.aium.org*

JUNE 1–4
American Board of Radiology (ABR), Oral Exams for Diagnostic Radiology, Radiologic Physics, Radiation Oncology, Louisville, Ky. • *www.theabr.org*

JUNE 2–6
European Society of Pediatric Radiology (ESPR), Annual Meeting, Magazzini del Cotone-Porto Antico, Genoa, Italy • *www.espr2003genoa.org*

JUNE 6–7
Advanced Course in Grant Writing, RSNA Department of Research, RSNA Headquarters, Oak Brook, Ill. • (630) 368-3758 or *dor@rsna.org*

JUNE 7–10
Society for Computer Applications in Radiology (SCAR), 20th Symposium for Computer Applications in Radiology, Hynes Convention Center, Boston Sheraton Hotel, Boston • (703) 757-0054

JUNE 14–16
Canadian Association of Medical Radiation Technologists (CAMRT), Annual General Conference, Winnipeg, Manitoba • *www.camrt.ca*

JUNE 15–17
UK Radiological Congress, Birmingham, UK • *www.ukrc.org.uk*

JUNE 15–19
American Medical Association (AMA), Annual Meeting, Hyatt Regency, Chicago • (312) 464-5000

JUNE 17–20
European Society of Gastrointestinal and Abdominal Radiology (ESGAR), 14th Annual Meeting and Postgraduate Course, Budapest, Hungary • *www.esgar.org*

JUNE 21-25
Society of Nuclear Medicine (SNM), 50th Annual Meeting, Ernest N. Morial Convention Center, New Orleans • *www.snm.org*

JUNE 23–24
BECON 2003 Symposium on Catalyzing Team Science, Natcher Conference Center, National Institutes of Health, Bethesda, Md. • *www.becon1.nih.gov/symposium2003.htm*

JUNE 25–28
Computer Assisted Radiology and Surgery (CARS), 17th International Congress and Exhibition, London QEII Conference Centre, London • *www.cars-int.de*

JUNE 26–28
National Congress of the Swiss Society of Radiology (SSR), Lucerne • *www.sgr-ssr.ch/*

JUNE 26–29
Clinical Magnetic Resonance Society (CMRS), 2003 Annual Meeting, Disney's Yacht and Beach Club Resorts, Lake Buena Vista, Fla. • *www.cmrs.com*

JUNE 26–29
Radiation Therapy Oncology Group (RTOG), Semi-Annual Meeting, Delta Centre-Ville, Montreal, Quebec • *www.rtog.org*

JULY 11-13
Strategies for Running a Successful Radiology Practice, RSNA Headquarters, Oak Brook, Ill. • (630) 368-3747 or *www.rsna.org/education/shortcourses*

JULY 16-19
Asian Oceanian Congress of Radiology (AOCR), Raffles City Convention Centre, Singapore • *www.aocr2003.org*

DELAYED

JULY 27-31
Society of Computed Body Tomography and Magnetic Resonance (SCBT/MR), Summer Practicum, Grove Park Inn Resort, Asheville, N.C. • *www.scbtmr.org*

AUGUST 10-14
International Symposium of Radiopharmaceutical Chemistry (ISRC), Sheraton on the Park, Sydney, Australia • *www.tourhosts.com.au/isrc2003*

AUGUST 10-14
American Association of Physicists in Medicine (AAPM), San Diego Convention Center, San Diego • *www.aapm.org*

AUGUST 10-14
American Healthcare Radiology Administrators (AHRA), 31st Annual Meeting and Exposition, Anaheim Convention Center, Anaheim, Calif. • *www.ahra.com*

AUGUST 17-22
Radiation Research Society (RRS), 50th Annual Meeting, in conjunction with 12th International Congress of Radiation Research (ICRR), Brisbane, Australia • *www.icrr2003.org*

AUGUST 24-29
World Congress on Medical Physics and Biomedical Engineering, WC 2003, Sydney Convention & Exhibition Centre, Sydney, Australia • *www.wc2003.org*

NOVEMBER 30–DECEMBER 5
RSNA 2003, 89th Scientific Assembly and Annual Meeting, McCormick Place, Chicago • *www.rsna.org*