

## Manuel D. Cerqueira Named to Head NRC Advisory Committee on Medical Uses of Isotopes

The NRC has appointed Manuel D. Cerqueira, MD, as the new chair of the Advisory Committee on the Medical Uses of Isotopes. He has experience in both nuclear medicine and nuclear cardiology. He is currently Associate Chief of Cardiology at the Georgetown University Medical Center and Professor, Departments of Medicine and Radiology, Georgetown University School of Medicine, Washington, DC. Cerqueira succeeds Judith Stitt, MD, of the University of Wisconsin School of Medicine. The Advisory Committee on Medical Uses of Isotopes counsels NRC on policy and technical issues that arise in regulating the medical uses of radioactive material for diagnosis and therapy.

Cerqueira is a graduate of Franklin and Marshall College in Lancaster, Pa. He received his medical degree from the New York University School of Medicine and had postgraduate training in internal medicine, cardiology, and nuclear medicine at Bellevue Medical Center in New York City and at Yale-New Haven Hospital in Connecticut. He has been at Georgetown since 1994. Earlier, he taught at the University of Washington School of Medicine and held senior staff posts at the Veterans Affairs Medical Center in Seattle.

—Nuclear Regulatory Commission

## SPECT Cost Effective in Evaluating Undiagnosed Chest Pain

A recent study of patients presenting in emergency rooms with chest pain and no acute ischemic electrocardiography changes suggests that the use of SPECT can reduce medical costs without a significant risk of adverse out-

comes, according to a report in the January 2000 *Annals of Emergency Medicine*. Stephen A. Stowers, MD, and colleagues from Southpoint Cardiology Associates in Jacksonville, FL, randomly assigned 46 patients to 1 of 2 treatment groups. Patients assigned to the conventional group were treated at their physician's discretion, whereas patients assigned to the perfusion imaging-guided group underwent treatment based on SPECT imaging results. Patients with positive scans were referred for coronary angiography, and patients with negative scans were referred to exercise treadmill testing.

Median hospital costs in the conventional group were \$1,843 greater than those in the perfusion imaging-guided group, the authors reported. "These cost differences were associated with a 2.0-day difference in median total length of stay and a 1.0-day difference in ICU length of stay," they said, adding that "...the more economically efficient diagnostic strategy did not lead to worse patient outcomes." They concluded that resting SPECT perfusion imaging was "an excellent aid in the diagnostic evaluation of intermediate-risk chest pain patients without diagnostic ECG changes, because it allowed for the rapid identification of patients at lower risk of acute coronary syndromes who could safely be evaluated in an outpatient setting."

—www.auntminnie.com

## SPECT Compared with MRI FAIR in Japanese Group's Cerebral Blood Flow Study

Preliminary results from a study comparing MRI flow-sensitive alternating inversion recovery (FAIR) with SPECT in the evaluation of cerebral blood flow were reported at the 1999 RSNA meeting by imaging specialists from several Japanese institutions, including Yamanashi Medical University in Nakakoma. The results

of the study indicate that FAIR is an inferior predictor of cerebral perfusion, with poor images when compared with SPECT.

The group imaged each of 9 patients in 3 ways: using FAIR; using a dynamic, contrast-enhanced two-dimensional gradient-echo EPI sequence; and with <sup>123</sup>I N-isopropyl-p-iodoamphetamine (IMP) SPECT. The group hoped to establish a correlation between MR signal intensity and regional cerebral blood flow.

The results indicated that FAIR still needs improvements if it is to find a permanent place in clinical use. From the nuclear imaging perspective, the positive result in favor of SPECT was not a surprise. "The <sup>123</sup>I [SPECT] is nearly ideal for measuring cerebral perfusion," said Sue Abreu, MD, medical director of quality assurance and a nuclear medicine specialist at Fort Bragg Hospital in North Carolina. "This is an interesting study," she said. "FAIR is not something I would rush to use to replace doing SPECT studies, but it's always interesting to note when one technique doesn't work as well as another. Not every study should show success. It's important to publish the less successful ones as well."

—www.auntminnie.com

## Surgical Oncology Group Announces PET Study

The American College of Surgeons Oncology Group (ACOSOG) on December 10, 1999, announced the opening of a clinical study to evaluate the usefulness of PET in the staging of disease in patients with potentially operable carcinoma of the thoracic esophagus. A clinical study of esophageal carcinoma patients aims to prove that PET should be incorporated into routine, pre-operative assessment of patients who are candidates for esophagectomy.

The study will determine "whether PET scanning can detect lesions that would preclude esophagectomy in patients who are found to be surgical candidates by standard radiographic staging," the announcement said. Another

goal of the study is to determine which lesions are most easily identified using PET. Patients with T1-3, NO-1, MO squamous cell carcinoma, or adenocarcinoma of the thoracic esophagus or gastroesophageal junction and who are potential candidates for esophagectomy are eligible for the study.

Positive results might affect the Health Care Financing Administration's (HCFA's) coverage of PET procedures in esophageal cancer. In June 1998 HCFA began reimbursement for PET in cancer of the lung; in July 1999 the agency added colorectal cancer, Hodgkin's and non-Hodgkin's lymphoma, and melanoma to the reimbursement list.

—www.auntminnie.com

## DOE Set to Close Brookhaven Research Reactor

A decision by DOE to permanently shut down the High Flux Beam Reactor (HFBR) at Brookhaven National Laboratory on Long Island was announced on November 16, 1999. HFBR is a 60-megawatt research reactor that began operation in 1965 and has provided scientists with neutron beams for research in materials sciences, chemistry, physics, structural biology, and medicine. The research reactor has been closed since December 1996, when it was shut down for normal refueling and a small amount of radioactive tritium was discovered in an aquifer beneath the reactor. The source of the leak was traced to an indoor storage pool used to hold the reactor's spent fuel rods.

"This was a difficult decision for me, and I consulted with scientists, the community, members of Congress, and other elected officials," said Secretary of Energy Bill Richardson in announcing the closing. "Extremely valuable research has been done at this reactor in its 30 years of operation, but it would take years and be costly to restart. DOE has been actively upgrading the technical capabilities and user capacities of all its neutron science facilities so that they can meet the growing demand for this kind

of research." Richardson emphasized that the DOE will work to make sure that scientists who have performed research at the HFBR will continue to be supported and can perform their research at other facilities. "The Department of Energy is deeply committed to Brookhaven Lab, and the lab has a strong future," he said. "For example, the Relativistic Heavy Ion Collider... will be a world center for nuclear physics. Similarly, the new and planned upgrades to the lab's National Synchrotron Light Source will help that facility remain at the forefront of science for years to come."

In other news, DOE noted its current active development programs, including:

- The Spallation Neutron Source. This accelerator-based neutron source, under construction at the DOE's Oak Ridge National Laboratory, will be more than 10 times as powerful as the best spallation neutron source now in existence.
- Upgrades to the High Flux Isotope Reactor at the Oak Ridge National Laboratory. Improvements include larger beam tubes and shutters, a high-performance hydrogen cold source, and new and upgraded neutron scattering instrumentation. Instruments that use the cold source will be housed in a newly constructed experimental building situated away from the reactor's core to reduce background noise. These improvements will increase the reactor's research capacity from 250 to 700 users.
- Upgrades to the LANSCE neutron scattering facility at DOE's Los Alamos National Laboratory in New Mexico. The upgrade will increase the facility's power to equal that of ISIS in the United Kingdom, currently the world's most powerful spallation source. The upgrade will also provide a new suite of state-of-the-art instruments for neutron scattering research at the Manuel Lujan, Jr., Scattering Center at LANSCE. The upgrades will double that center's power and increase user capacity

from 100 to 300 researchers.

- Upgrades to the Intense Pulse Neutron Source (IPNS) at DOE's Argonne National Laboratory in Illinois. Instrumentation and the target and moderator systems will be improved and updated.

—Department of Energy

## Gail Marcus Named Principal Deputy Director of DOE Nuclear Energy Programs

Dr. Gail Marcus was recently named principal deputy director of the DOE's nuclear energy programs. She will oversee the department's nuclear energy research and development programs, isotope programs, and the management of DOE's reactor facilities. Marcus also will be responsible for the development of next-generation nuclear power plants and advanced nuclear energy technologies, including advanced radioisotope power systems and production and distribution of isotopes required for medical treatment, diagnosis, and research. Marcus joins DOE after 15 years at the Nuclear Regulatory Commission, including 4 years as a senior advisor to former Commissioner Kenneth Rogers. Marcus was recently a visiting professor of research at the Tokyo Institute of Technology laboratory for nuclear reactors. Among her other distinctions, she was the first woman in the United States to earn a doctorate in nuclear engineering.

—Department of Energy

## *D. radiodurans* Exposed: Genetic Information of World's Most Radiation-Resistant Organism Decoded

Researchers at the Institute for Genomic Research (TIGR) described  
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**ABNM** (Continued from page 15N)

examination has been in the process of centralization over the last year at the ABNM office in Los Angeles, with completion scheduled for 2001. Turn-around time for grading and analysis of each candidate's performance has already improved significantly.

ABNM examinations are based on criterion referenced testing, in the belief that candidates should be measured against the skill and knowledge represented in each test question. All questions are single-response multiple choice items. The stem and responses for each question are written carefully to be clear and precise. Many questions with high-quality images requiring interpretation and explanation are meant to simulate practice conditions.

The ABNM is currently updating "Components of

Professional Competence of Nuclear Medicine Physicians," (*J Nucl Med.* 35:1994;1234-5). A new section on medical ethics will be added later this year. Format and contents will conform to recommendations of the ABMS Task Force on Competence and will be submitted for publication in the *Journal of Nuclear Medicine*.

International efforts at coordination among medical examining boards are ongoing. The ABNM is in contact with the Canadian Board of Nuclear Medicine, the European Board of Nuclear Medicine, and the Latin American Board of Nuclear Physicians and welcomes contacts with other boards.

—Edward B. Silberstein, MD, Chair,  
American Board of Nuclear Medicine

**Y2OK!** (Continued from page 25N)

and Chair of the President's Council on Year 2000 conversion responded on January 2 to reporters' questions on Y2K by saying, "We've made it look too easy in many ways... it is important to put it in the right context as we go forward. And as I've said on numerous occasions in the past, individual companies did not spend in many cases hundreds of millions of dollars for public relations efforts. They are not susceptible to responding to hype. They actually spent that money because their systems were at risk."

Greg Mack, Information Technology manager for the American Chemical Society, who has worked extensively in nuclear medicine systems research, commented for Newsline on the Y2K effort in medicine: "Dramatic breakdowns did not occur in either medical apparatus or delivery precisely because so much planning and preparation were involved. And many of

the dollars spent on Y2K will pay future dividends in systems that are now more updated, more completely coordinated within their institutional networks and with outside sources, and more ready for unexpected events."

Where do these "non-events" leave the field of nuclear medicine? Ready to face the 21st century, whatever lies ahead. In the January 2000 Newsline SNM president Robert F. Carretta wrote, "We can know only one thing for certain: we must be prepared to deal strategically and effectively with rapid technological change and with the clinical, regulatory, and economic results that inevitably accompany such change." On January 1, a collective sigh of relief was breathed in nuclear medicine departments everywhere when it became clear that this century of change had begun not with medical meltdowns, but with fireworks, champagne, and hopes for a bright future.

**Newsbriefs** (Continued from page 28N)

the complete genetic sequence of the bacteria *Deinococcus radiodurans* in the November 19 issue of *Science*. The organism's remarkable ability to repair DNA damage from radiation has made it the object of much speculation in the search to understand the mechanisms of cellular degradation and repair.

TIGR investigator Owen White led the team that sequenced the nearly 3.3 million individual chemical base units making up *D. radiodurans*' DNA. Kenneth W. Minton and Michael J. Daly from the Uniformed Services University of the Health Sciences performed the genetic engineering research and collaborated on the sequencing project. They examined the bacterium's cellular repair genes and discovered that, although *D. radiodurans* contained the usual complement of repair genes found in other radiation-sensitive bacteria, it has an unusually large redundancy of repair functions.

*D. radiodurans* was originally isolated from colonies of

nonpathogenic bacteria growing on samples of canned meat thought to be sterilized by gamma radiation. The microbe also withstands extreme desiccation and UV-irradiation. Since its discovery in 1956, *D. radiodurans* has been found to occur naturally.

The results of the DOE-funded sequencing of *D. radiodurans* have been cited as offering possibilities as diverse as nuclear waste clean-up and cancer research. "We anticipate a terrific boost for industrial and environmental microbiology," said TIGR President Claire Fraser. "Publication of the *Deinococcus* sequence will foster more research into cellular repair and damage resistance. We foresee its use for novel industrial processes that most bacteria cannot survive."

Photos of *D. radiodurans* and a detailed description of its genome are available through TIGR's Microbial Database on the World Wide Web at ([www.tigr.org](http://www.tigr.org)).

—Department of Energy