The officers of the Society of Nuclear Medicine and the staffs of the Society and *The Journal of Nuclear Medicine* extend their sympathy and support to those most affected by the recent national tragedies. Our profound respect and thanks go out to our colleagues in nuclear medicine and throughout the medical sciences who gave and are giving so freely of their time and skills to help those injured in body and spirit.
PUBLIC AFFAIRS UPDATE

Reductions in PET APC Rates

On Friday, August 24, the Centers for Medicare and Medicaid Services (CMS) published in the Federal Register the proposed changes to the Hospital Outpatient Prospective Payment System (HOPPS) and payment rates for calendar year 2002. The cardiac nuclear medicine Ambulatory Payment Classification (APC) was reduced, cardiac PET was increased significantly, tumor PET underwent major cuts, and the rest of nuclear medicine saw mild increases. Even a cursory review of the published frequency and cost data raises many questions about the basis on which these changes were made.

The proposed payments for PET are especially problematic. Without explanation, CMS moved all the PET codes that previously were assigned to APC 981 (Level XII New Technology) to APC 976 (Level VII New Technology). The shift reduces the proposed 2002 payment rate for most PET procedures from $2,165.36 to $841.94. The Society of Nuclear Medicine (SNM) and the American College of Nuclear Physicians (ACNP) are working with the other members of the Nuclear Medicine APC Task Force (NMAPC TF) to resolve this extraordinary and unexpected reduction in payments.

In other news:

NRC Part 35: Before leaving for the August recess, the Senate passed its version of the appropriations bill. In it, they prohibited the Nuclear Regulatory Commission (NRC) from spending any funds in federal year 2002 to implement the new Part 35 regulations. Because the bill differed from the earlier House version, a conference committee met in September to work out the differences. During the Congressional recess, SNM and ACNP government relations representatives worked with House and Senate committee members and staffers to help them understand the importance of Part 35 to the practice of nuclear medicine and why SNM and ACNP members object to the overregulation of diagnostic nuclear medicine. On September 13, Gary Dillehay, MD, president elect, ACNP, received a letter from John D. Graham, Office of Management and Budget Administrator, in response to these efforts and to previous correspondence. In part, the letter read:

I share your concerns that the benefits of regulating medical uses of byproduct materials may not justify the costs of the Part 35 requirements. Because the NRC is exempt from the regulatory analysis and the rule review provisions of Executive Order 12866, the NRC has not carried out a regulatory analysis of benefits and costs of Part 35. As a result, I am writing to NRC Chairman Richard Meserve to encourage the NRC to undertake a full evaluation of the benefits and costs of the various requirements of Part 35.

In the attached letter to the NRC, Graham stated: After careful review of the NRC’s amendments, we have concluded that they will yield important reductions in burdens relative to the existing Part 35 reporting and record-keeping requirements. We are therefore approving the information collection request for the amendments to Part 35.

Because of this approval and despite Graham’s reservations, unless Congress acts, new Part 35 will go into effect 6 months after publication in the Federal Register.

CARE Act Update: The CARE Act (HR 1011) now has 28 cosponsors in the House. We are working with Senator Edward Kennedy (D-MA) to develop a Senate version of the bill. In related technologist licensure news, a bill licensing nuclear medicine technologists has been introduced in the New York Senate (S5654). New York technologists have been asked to contact their state senators urging them to pass the bill and send it to the state assembly.

Gamma Camera PET Coverage Coding Clarified: In an August 21 conference call with Dr. Mitch Burken and Shana Olson of the CMS Coverage and Analysis Group, coding for PET procedures performed with qualified gamma cameras on or after July 1 was clarified. Effective July 1, the following G codes are the only codes that may be used for gamma camera PET:

- G0125 PET imaging regional or whole body; single pulmonary nodule;
- G0211 PET imaging whole body; initial lung (replaces G0126);
- G0215 PET imaging whole body; restaging, colorectal cancer (replaces G0163);
- G0218 PET imaging whole body; restaging, melanoma (replaces G0165);
- G0221 PET imaging; initial staging; lymphoma (replaces G0164); and
Medical Response to National Tragedies

Emergency medical response was swift and well organized in New York, NY, and in Washington, DC, after the events on the morning of September 11. The value of regular, thorough, and realistic disaster drills was evident, as teams of emergency physicians, imaging specialists, trauma surgeons, and others stood in scrubs outside hospital entrances waiting for arriving ambulances. As the extent of injuries and the cost in human lives became evident, the medical resources of the federal government were marshaled.

Immediately after the attacks, Health and Human Services (HHS) Secretary Tommy Thompson activated the National Disaster Medical System, the first time the system had been activated on a nationwide basis. His action placed 80 disaster medical teams across the country at the ready for deployment. He also authorized the first emergency use of the National Pharmaceutical Stockpile, providing for delivery of supplies to support medical personnel caring for victims. Under the program, CDC released one of the eight “12-hour push packages” that are maintained in prepackaged caches in secure storage facilities around the country. The packages are designed to be deliverable to any area of the continental United States within 12 hours of deployment. Each push package contains several truckloads of pharmaceuticals, intravenous supplies, airway supplies, emergency medication, bandages, and other materials.

The next morning, Thompson began the day by greeting HHS employees as they came to work and then delivered a morning address to all 63,000 department employees nationwide, pledges that HHS would “go out of its way to make sure those who need help get it promptly and with the compassion that epitomizes the public servants of this great department.”

HHS response activities included:
• Coordinating emergency medical relief assistance to affected areas through the Office of Emergency Preparedness;
• Coordinating the deployment of health officers in the Public Health Service Commissioned Corps as needed in emergencies;
• Providing technical assistance and medical supplies for state and local health departments through the Centers for Disease Control and Prevention;
• Offering grief and mental health assistance through the Substance Abuse and Mental Health Services Administration;
• Overseeing blood quality and availability through the Food and Drug Administration and in cooperation with the American Red Cross;
• Assuring uninterrupted services and reimbursement through the Centers for Medicare and Medicaid Services (CMS); and
• Maintaining the level of normal services provided by other HHS operating divisions.

On Wednesday, September 12, CMS issued a statement urging medical facilities and personnel to “Make it your first responsibility, as in any emergency, to care for the patient, and provide the emergency or urgent service or treatment first. We will work with you to ensure that you receive payment for these covered services.”

At press time for Newsline, the extent of injuries and the level to which the resources of the U.S. medical community will be called upon remains unclear. Clearly, the toll will be staggering. Already, medical personnel from all branches of the Armed Forces have been organized to provide assistance.

During the difficult months ahead, all members of the medical community—both at the sites of the disasters and on a national level—can take pride in the efficiency, quality, and selfless performance of duty shown in the initial response.

• G0222 PET imaging whole body; restaging; lymphoma (replaces G0164).

CMS is developing a new Program Memorandum for PET reimbursement effective January 1, 2002. There will be new PET codes for the new year.

UB92 Hospital Reporting Forms and Case Sample Reports: The NMAPC TF, which includes representatives from SNM and ACNP, has compiled a series of case sample reports that contain appropriately completed UB92 hospital reporting forms. Sample reports include case studies of: ventilation perfusion lung, whole-body and SPECT tumor, dual-isotope myocardial perfusion, myocardial perfusion with pharmacologic stress, parathyroid imaging,

(Continued on page 20N)
Unexpected Shortfalls of Two Nuclear Medicine Pharmaceuticals

Through an unfortunate confluence of manufacturing, scheduling, and regulatory occurrences, two pharmaceuticals widely used in nuclear medicine practice became temporarily unavailable for distribution in August. During the first week of that month, Bracco Diagnostics Inc. (Princeton, NJ) mailed separate letters to customers, notifying them that shortages of Kinevac (sincalide for injection) and Choletec (kit for preparation of $^{99m}$Tc-mebrofenin) were imminent.

In one letter, Marion Meeks, PhD, Director, Medical Affairs and Professional Services at Bracco, told customers that Kinevac would be out of stock and unavailable for approximately 1 year. “This back-order situation is the result of issues encountered during a change in manufacturers,” wrote Meeks. “Bracco is committed to resolving this situation as soon as possible.”

The letter also noted that a rationing program would be used to distribute the remaining inventory of Kinevac during the month of August. Customers who purchased Kinevac directly from Bracco were allowed to place one order for a maximum of two boxes of Kinevac. Radiopharmacies with average monthly orders larger than two boxes per month of Kinevac over the past 12 months were allowed to order their average monthly purchase volume. Fulfillment of these orders was to be based on product availability, with all orders to be placed before September 1.

In the second letter, dated August 7, Adrian Trevisan, Product Manager, Nuclear Medicine at Bracco, informed customers of “further delays in the transfer of manufacturing” for the Choletec kits. Trevisan wrote, “We will continue our rationing program until product on hand is exhausted. At that point, the product will go on backorder.” According to the letter, the backorder occurred because of “an unexpected business interruption” at one of the raw material providers.

The Nuclear Medicine Community Reacts

Reaction among nuclear medicine practitioners was one of dismay, as e-mails and phone calls about rationing, shortfalls, and possible alternative pharmaceuticals circulated among practitioners and Society of Nuclear Medicine (SNM) officers and staff. On August 10, Edward B. Silberstein, MD, Chair of the SNM Committee on Radiopharmaceuticals, talked with Bracco representatives and issued a statement on behalf of the committee. “The good news is that this radiopharmaceutical shortfall was not a direct business decision to cut production of materials with a low profit margin,” said Silberstein.

The bad news, of course, was that shortages would cause inconveniences to practitioners and could affect the quality of patient care in some facilities. The experience of Terence Beven, MD, Director of Nuclear Medicine at Our Lady of the Lake Regional Medical Center, Baton Rouge, LA, is typical of many nuclear medicine specialists who received the letters from Bracco. “At the time we received this news we had about a 1-month supply of Kinevac,” he noted in mid September. “Since that time we have obtained about a 1-year supply from a number of different sources. Not being able to meet the demand for these procedures would have an adverse impact on our credibility as nuclear medicine physicians and cause a loss of interest in the specialty in the eyes of referring physicians, particularly those specialists who have learned to depend on these procedures as a significant part of their patient management.”

Different Reasons for Shortfalls

With the two announcements coming within a span of 8 days, the immediate assumption in the nuclear medicine community was that the shortfalls were related. In fact, although both pharmaceuticals were in the middle of a trans-

(Continued on page 19N)
transfer of manufacturing from Bristol-Myers Squibb, two separate sets of ensuing events led to the interruptions in production. Kevin Brooks, Bracco’s Senior Director, Nuclear Medicine, told Newsline that Bracco instituted careful and detailed planning measures more than 4 years ago to ensure continued availability of Kinevac and Choletec during the transfer.

In the case of Kinevac, the standing New Drug Application (NDA) was more than 20 years old and required an update to some of the manufacturing and testing processes to reflect 2001 Food and Drug Administration (FDA) standards. Brooks reported, “We unfortunately experienced costly delays, some of which were unexpected and outside our control, that have created the current Kinevac product shortage.” The company is currently working toward completing the technology transfer and submitting the supplemental NDA. “We have notified and are working with the FDA regarding the Kinevac situation,” says Brooks.

The delay in the transfer of Choletec manufacturing came as a more abrupt surprise to Bracco. A new raw material source and a backup source had been identified. According to Brooks, Bracco investigated both sources with due diligence procedures and put the first-choice source through a pilot program to ensure production capabilities. In April 2001, however, the primary raw material supplier abruptly shut down synthesis operations, which were unrelated to the nuclear medicine product category. The secondary supplier, now the only source of mebrofenin, was still in development. Batch stability and other data are currently being compiled for FDA Current Good Manufacturing Practices (cGMP) approval, which will not be forthcoming until at least spring 2002. If approval is granted at that time, Choletec would be available again in the third quarter of 2002.

The Impact of Shortages

During the past year, the nuclear medicine community has dealt with a similar unexpected shortage of $^{57}$Co B12. In the summer of 2000, the major supplier of $^{57}$Co announced on a Friday that production of the 270-day half-life isotope would cease the following Monday. Many practitioners were able to stretch their supplies and, as Silberstein notes, “We’re lucky $^{57}$Co has a long half-life.” A new supplier is now producing radiolabeled B12, and the FDA has approved the supplemental NDA. Bracco anticipates that the product, Rubratope, will be available for sale in October 2001.

Silberstein cautions against blaming pharmaceutical companies directly for such shortfalls. “Because the manufacturers were caught by surprise from their own suppliers, whom they thought they knew well in several instances, we can’t blame them,” he says.

Bracco has assured the nuclear medicine community that both Kinevac and Choletec will return to the market as soon as possible, given the constraints of manufacturing difficulties and FDA regulations. Disofenin (Hepatolite) remains on the market for hepatobiliary imaging, but it, too, has been reported to be in short supply.

In the interim, some nuclear medicine physicians worry about the effects on practice, patient care, and perceptions of the field. Even the search for temporary substitutes may be damaging. “It may be possible to derive other procedures to substitute for Kinevac, such as a standardized fatty meal, and to find other compounds capable of doing what the present biliary scanning agents do to delineate the dynamics of hepatobiliary function,” says Beven. “But it would take substantial time to document the reliability of such agents, and, by the time they are available, other alternatives would be so firmly incorporated into the practice patterns of referring physicians that the new radionuclide procedures would be of no interest to them.”

The need for speed is clear. “The SNM Committee on Radiopharmaceuticals is urging radiopharmaceutical manufacturers to have a secondary source of drug available—but that is clearly not always practical,” said Silberstein. “We are also contacting the FDA to indicate the urgent need for these materials as quickly as possible.”

Newsline will keep readers updated on these and any other shortfalls in radiopharmaceuticals and related products. The Committee on Radiopharmaceuticals will continue to post news, updates, and action items on the SNM Web site at www.snm.org. The SNM Ambulatory Payment Classification Task Force regularly updates reimbursement information on the site. On September 13, a revised chart of radiopharmaceuticals and drugs eligible for continued separate Medicare payment was posted.
labeled white blood cell infection, and PET for colorectal cancer.

In his introduction to the case studies, NMAPC TF Chair Ken McKusick, MD, reported that, for the past year, payments for hospital outpatient studies for Medicare patients have been covered under HOPPS. All nuclear medicine procedures have been grouped into one of six APCs. Except in the case of PET studies, additional separate reimbursements are made for radiopharmaceuticals.

Sometime in the next 2 years, the costs of radiopharmaceuticals are scheduled to be included in the APC payment for each procedure. CMS will calculate the cost of radiopharmaceuticals for each nuclear medicine procedure on the basis of its current experience (or data), based on hospital reporting. The specific Health Care Financing Administration (HCFA) Common Procedure Coding System numbers and descriptors, which identify the radiopharmaceuticals, and the submitted drug codes will be matched up with the specific Current Procedural Terminology codes. CMS will calculate the presumed projected median drug costs for performing each nuclear medicine procedure. “The accuracy of the data (as well as current payments to your hospital) rests with correct coding in the hospitals,” says McKusick. “Just to put this into perspective, several years back HCFA told the Nuclear Medicine APC Task Force that they had calculated the average cost for radiopharmaceuticals at $7.50 per procedure. Faulty data in, faulty data out. We don’t want that to happen again.”

To assist nuclear medicine professionals, facility coding personnel, and others in ensuring correct billing by hospitals, the NMAPC TF compiled the series of case sample reports with appropriately completed hospital-reporting forms (UB92) and specific teaching points. “We have only a short window for developing the data with which CMS will formulate future reimbursement for outpatient nuclear medicine procedures,” says McKusick. “We trust that these case reports and the auxiliary material presented will be useful and that nuclear medicine personnel and others will discuss these with their own hospital billing staffs.”

The NMAPC TF case sample reports and UB92 hospital reporting forms are available as a downloadable PDF at www.snm.org.

PET for Alzheimer’s: Medicare coverage of PET for the diagnosis of Alzheimer’s disease/dementia was advanced a step in late August with the announcement by CMS that the Agency for Health Research and Quality had selected the Center for Clinical Health Policy Research at Duke University (Durham, NC) as the evidence-based practice center for technology assessment of this application. CMS expects to receive the finished assessment by the end of October and then present the issue to the Medicare Coverage Advisory Committee.

—William Uffelman
SNM General Counsel
Director of Public Affairs
SNM President Alan Maurer, MD, has formed a committee to conduct a national search for a successor to Executive Director Bill Bertera, who on September 10 announced his upcoming resignation. The search committee, which will be chaired by Dr. Maurer, includes Michael Gelfand, MD, Mickey Clarke, CNMT, Henry Royal, PhD, and Francis Keech, CNMT. The committee represents the present and future leadership of both SNM and the SNM Technologist Section.

Bertera, who has been with SNM for 3 years, has been named Executive Director of the Water Environment Federation, a Washington-based 501[c]3 organization with a staff of 116, a $20 million budget, 76 separate association members, and 40,000 individual members.

The search committee will begin interviewing search firms and intends to place qualified candidates before the full Board of Directors no later than the MidWinter meeting in February 2002. In announcing the search, Dr. Maurer noted that the timing of a change in chief executives, although always stressful, is happening at a good point in the SNM year. He noted that the fiscal year ends in September, that the Society is projected to finish the year in the black with strong reserves, the budget for next year is complete, and the staff will be led during the transition by Virginia Pappas, currently Deputy Executive Director.

Pappas has been with the Society more than 20 years, is a Certified Association Executive, has strong executive and political skills, and will lead a highly professional and well-trained staff during the search. Questions about the search can be directed to Dr. Maurer through SNM headquarters.

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Keep in Mind…

In the September issue of Newsline (J Nucl Med. 42[9]:11N), Alan Maurer, MD, president of the Society of Nuclear Medicine (SNM), discussed a proposal to consider a name change for the Society. Now is the time for such a change, he noted, because of an apparently widespread misunderstanding of the nature of nuclear medicine (by both the public and medical communities) and because of the increasingly important roles nuclear medicine plays in molecular imaging and research on the human genome. An ideal name for the Society would make evident the importance of nuclear medicine in these emerging fields.

Dr. Maurer opened the dialogue suggesting the name “Society of Nuclear and Molecular Medicine.” He and others recognize that changing the name of the Society is a big step and one that will call for input from as many members as possible. At the meeting, the House of Delegates voted to publicize a request for members of the Society to submit new names. “The appropriate name for any organization is the one which correctly portrays its function and activity,” says Mathew L. Thakur, PhD (Thomas Jefferson University Hospital, Philadelphia, PA), who was among the first to submit a suggested new name. “More than 40 years ago, the founders correctly called our organization the Society of Nuclear Medicine, the modality in which radionuclide probes are used for functional imaging. Although most nuclear medicine procedures today are functional imaging, the era of radionuclide molecular imaging has already begun and will be the practice of tomorrow. The time is therefore right for us to change the name to one that will correctly reflect the function and activity of our organization.”

Please write or type your suggested name on a piece of paper, along with your name, title, and return address, and send to:

Virginia Pappas
Society of Nuclear Medicine
1850 Samuel Morse Drive
Reston, VA 20190-5316

The deadline for receipt of submitted names is December 15, 2001. A summary of the submitted names will be prepared for the Board of Directors, who will choose five finalists. At the MidWinter meeting, these will be submitted to the House of Delegates. According to SNM bylaws, no name change can occur until the name is formally proposed and the bylaws changed.

The member submitting the final approved new name will be featured in a future Newsline article and will receive additional recognition as approved by the House of Delegates and the Board of Directors. In the event of duplicate submissions, the suggestion with the earliest postmark will be recognized.
The 2001 Loevinger–Berman Award for Excellence in Medical Internal Radiation Dosimetry (MIRD) was presented to Keith F. Eckerman, PhD, by Stephen R. Thomas, PhD, vice chair of the MIRD Committee, at the annual business meeting of the Society of Nuclear Medicine (SNM) in Toronto. At the June 23 ceremony, Eckerman was recognized for his work in the development of dosimetric models for internal emitters.

The award was established in 1999 by the SNM Awards Committee in honor of Robert Loevinger and Mones Berman, who formulated MIRD schema for internal dose calculations. The objective of this award is to recognize excellence pertaining to the field of internal radiation dosimetry as it relates to nuclear medicine through: (a) research and/or development, (b) significant publication contributions, or (c) advancement of the understanding of internal dosimetry in relation to risk and therapeutic efficacy. Previous award winners were Roger J. Cloutier (1999) and Dandamundi V. Rao (2000).

Dr. Eckerman’s distinguished career in research on dosimetry of internal emitters began in 1970 with work as an environmental scientist on the Radium Dial Painters Project at the Argonne National Laboratory outside Chicago, IL. An earlier academic year at Oak Ridge Associated Universities (Oak Ridge, TN) brought him in contact with Roger Cloutier (while making a $^{14}$C target for experiments on a tandem accelerator), who influenced him to leave nuclear physics. He pursued a PhD in radiologic physics, which he received from the Environmental Health Engineering Program at Northwestern University (Evanston, IL) in 1972.

Dr. Eckerman served as Senior Radiological Physicist with the U.S. Nuclear Regulatory Commission from 1974 to 1978 and in 1979 became Group Leader, Dosimetry Research Group at Oak Ridge National Laboratory (ORNL), a title he has held for more than 2 decades.

Dr. Eckerman has been active on international committees, with work of special note on the International Commission on Radiological Protection (ICRP). He is a member of Committee 2 on Secondary Limits. Since 1982, he has chaired the ICRP Task Group on Dose Calculations (the first standing task group of the ICRP). He also has been a member of the National Council on Radiation Protection since 1990.

The impact of Dr. Eckerman’s work within the field of dosimetric models for internal emitters has been truly far reaching. A principal focus of his research at ORNL has been directed toward age and gender influences on dose from intakes of radionuclides (of enhanced interest since the Chernobyl nuclear accident). In collaboration with members of his group, he has developed an entire series of anthropomorphic phantoms incorporating age-specific anatomy and the associated absorbed fractions as a function of energy. Within the ICRP and MIRD, his contributions have led to publication of comprehensive radionuclide decay scheme books relevant to medical applications and health physics. Currently, he is investigating inhalation models and electron absorbed fractions in the airways. Finally, as radioimmunotherapy develops with new radioagents, his research in the modeling of skeletal and marrow compartments allowing improved estimates of radiation dose to the marrow is of continuing importance.

“Dr. Eckerman has recognized the importance to the national and international nuclear medicine communities of maintaining accessible centers for providing dose calculations for internal emitters. Through his leadership within the ICRP and other commitments, including collaboration with the MIRD Committee, he has succeeded in preserving the facility for such calculations,” said Dr. Thomas. “On behalf of the MIRD Committee and the Society of Nuclear Medicine, it was a pleasure and an honor to present the 2001 Loevinger–Berman Award to Dr. Eckerman.”

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Call for Nominations

The MIRD Committee is seeking suggestions for potential nominees for the Loevinger–Berman Award. Anyone who wishes to make recommendations to the committee should list reasons why the nominee is deserving of the award and include a curriculum vitae and references to some relevant publications by the nominee. All recommendations will be carefully considered by the committee.

Nominations should be sent with supporting material to Evelyn E. Watson, Chair, MIRD Committee, 104 New Bedford Lane, Oak Ridge, TN 37830.

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Keith F. Eckerman, PhD
In Memoriam: Richard Lambrecht, PhD
1943–2001

Richard Merle Lambrecht, PhD, an internationally known radiopharmaceutical chemist with multiple talents and skills, died peacefully on July 21 in Wayland, MA, after courageously fighting pancreatic cancer for 25 months. His highly productive and creative research career spanned more than 3 decades, during which he held prestigious positions in the United States, Saudi Arabia, and Australia and collaborated with leading institutions in Germany, Japan, and Belgium. It was during one of his collaborative research trips to Japan that he was diagnosed with pancreatic cancer in June 1999.

Richard received his doctorate in physical chemistry in 1969 from the University of Nebraska and joined Dr. Alfred Wolf’s group as a research associate in the Department of Chemistry at the Brookhaven National Laboratory (BNL) in Upton, NY. One year later he was promoted to the position of Associate Scientist. Only a few individuals have achieved this position so quickly after earning their doctorates.

Using the variable energy cyclotron at BNL as the primary research tool, Dr. Lambrecht studied the excitation functions of several nuclear reactions that contributed to the production of a variety of α-, γ-, and positron-emitting radionuclides of diagnostic and therapeutic importance. While at BNL, he published 115 of his 238 research articles in peer-reviewed journals and received three of his four prestigious awards for significant innovation in transforming research into useful technology. These awards were for substantial work on: (a) a radiopharmaceutical development system (1984), (b) an ocular radioactivity monitor (1985), and (c) the use of 211At for therapy. During his tenure at BNL, he was issued 10 of his 16 patents, published five of his six books, and was a three-time visiting scholar at the Institute of Nuclear Medicine in Heidelberg, Germany. He reached the rank of Scientist at BNL in 1974.

In 1985, he was chosen as the chairperson and principal scientist of the Radionuclide and Cyclotron Operations Department at King Faisal Specialist Hospital and Research Center in Riyadh, Saudi Arabia. In 1990, he became the director of Biomedical and Health Programs at the Australian Nuclear Science and Technology Organisation (ANSTO) in Sydney. During 1991 and 1992, he also served as the director of the National Medical Cyclotron in Australia.

He left ANSTO in April of 1994 but kept close ties with the institution and frequently visited Australia as a professor in the Department of Chemistry at the University of Wollongong.

He spent the latter part of 1994 working in Japan as a foreign visiting professor at the Takashi Radiation Chemistry Research Establishment of the Atomic Energy Research Institute (Takashi, Japan). This encounter led to a long-lasting association with eminent Japanese scientists who valued his research undertakings and frequently invited him to lecture.

Beginning in 1995, he worked as a visiting professor at the PET Center at Eberhard-Karls University in Tübingen, Germany. While in Germany he initiated a collaborative research program between the Eberhard-Karls Cyclotron, the PET Center at the Catholique University in Belgium, and the Atomic Energy Research Institute in Japan. This program was supported by the International Atomic Energy Agency (IAEA).

He was a member of several professional societies, including the Society of Nuclear Medicine (SNM), the American Chemical Society (ACS), and the New York Academy of Sciences, and was a founding member of the Institute of Clinical PET and the Protein Society. At various times during his career, he served on the editorial boards of seven journals and was a fellow and chartered chemist of the Royal Society of Chemistry, the Royal Australian Institute of Chemistry, and the Australian College of Biomedical Scientists. He was president of the Radiopharmaceutical Science Council of SNM (1982–1983) and its secretary/treasurer in 1980 and 1981. He had been a consultant to IAEA since 1971.

His contributions to biomedical science were appreciated by several institutions at home and abroad. He received an honorary doctorate of science degree from the University of Wollongong in 1997 and the Maurice R. Chamberlain Award of the New Haven, CT, section of ACS in 1987 for improvement in the quality of life through chemistry.

Throughout his career, Richard remained creative, productive, and focused on applications of radionuclides

(Continued on page 30N)
SNM Announces Education Initiatives

The Society of Nuclear Medicine (SNM) announced on September 4 that it is developing two new initiatives designed to increase awareness of PET and basic molecular science among nuclear medicine professionals and referring physicians. Under the Clinical PET and Basic Science/Emerging Technologies initiatives, SNM will create high-quality, professional instructional materials and programs in patient care, patient outcomes, research, and socioeconomic issues.

According to SNM President Alan Maurer, MD, “SNM’s goal is to be the premiere international provider of multidisciplinary education for those involved with nuclear medicine. Basic science and an understanding of the emerging technologies are fundamental to the future of nuclear and molecular medicine. PET is one of the fastest growing areas of our field, and one with significant potential to impact patient care. As a part of these initiatives, we will be seeking partnerships with a wide range of organizations with complementary goals.”

The Clinical PET initiative will focus on three areas—oncology, cardiovascular disease, and neurology—and will also address quality assurance, image reconstruction, attenuation correction processing, and instrument performance characteristics.

The Basic Science/Emerging Technologies component will cover the basic science necessary to understand modern molecular imaging, the role of imaging in drug discovery, and unique advances that nuclear imaging can make in modern molecular medicine.

Dr. Maurer reports that SNM is planning to work with industry leaders in developing these educational activities. In early September, SNM Executive Director William Bertera sent out a letter to industry and manufacturing representatives announcing the opportunity for partnerships on the two educational initiatives. Bertera noted that SNM’s approach “will be to develop a comprehensive education plan that targets multiple as well as multidisciplinary audiences.”

Initial response to these initiatives has been positive. SNM hopes to announce specific activities at the Mid-Winter meeting in Scottsdale, AZ, in February.

For more information, contact Brenda Johnson, SNM Director of Education, at (703) 708-9000 or bjohnson@snm.org.

In Memoriam

(Continued from page 28N)

for diagnosis and therapy. In Saudi Arabia and Australia, his creativity reached new heights. He initiated research projects, increased research staff and funding, invited distinguished scientists for teaching, and encouraged his young scientists and sent them abroad to leading institutions where they could acquire new techniques to apply to research projects at home.

During my numerous conversations with him during his illness, it was clear that his approach to combating his disease was scientific and methodic. Throughout the period, he was realistic but had a positive attitude. Perhaps because of this approach, he maintained a very high quality of life for more than 2 years after the diagnosis of his disease. From the beginning, he wanted to volunteer for an experimental radionuclide therapy trial, a subject he knew well. However, because no trial was suitable for his disease, he opted to join an experimental chemotherapeutic protocol. During the entire course of treatment, he took constant notes about the status of his disease and was open about it to the extent that he described his history in an abstract presented at the annual meeting of SNM in Toronto in June 2001 (J Nucl Med. 2001;42[suppl]:263P). It takes courage to share such personal information with others. In a letter to me about Richard, Henry N. Wagner, Jr., MD, wrote, “He showed us how one should respond to terminal illness.”

By any standards, Richard was a unique scientist, a good friend, and a nice man. At the age of 58, he was too young to die. On behalf of all of us, those who knew him and those who did not, in the nuclear medicine community and beyond, I extend my deepest sympathies to his wife, Fatma Yurt, his sons, Curtis, Lars, and Luke, his grandchildren, Isabelle, Abigail, and Erik, and his sister, Helen.

—Mathew L. Thakur, PhD
Professor of Radiology
Director of Nuclear Medicine Research & Radiopharmaceutical Research
Thomas Jefferson University Hospital
Philadelphia, Pennsylvania
The Society of Nuclear Medicine (SNM) reports that demand is high for the new Basic Science of Nuclear Medicine module, published with support from the SNM Education and Research Foundation (ERF). Prepared under the direction of Frederick H. Fahey, DSc, and Beth Harkness, MA, this basic science CD-ROM offers up to 22 hours of Category I AMA credit toward the program requirements mandated by the Nuclear Regulatory Commission for residency education in nuclear medicine and up to 22 hours VOICE credit. The training module covers the basic sciences associated with nuclear medicine, including radiation science, radiation detection and instrumentation, gamma camera operation, PET and SPECT, radiochemistry and radiopharmacy, radiation biology, and radiation safety. In addition, the module introduces new and developing aspects in the field.

The module differs from traditional textbook approaches in several ways, says Fahey: “The 22 presentations on the CD are image rather than text based, so that we may have as many as 50 illustrations, some animated and all with sound, to illustrate different aspects of each presentation.” Second, he notes, the CD provides easy access to the material most interesting to the viewer. Each presentation is cross-referenced by both title and keywords and can be accessed randomly to bring up material of interest.

“Finally, this approach differs in its timeliness,” he says. “Although many aspects of basic science in nuclear medicine are not new, there is always new information to present in instrumentation, radiochemistry, and radiobiology. The cases were recorded last February and the CD was available in June. Many textbooks reach publication several years after the initial text is written.”

Several challenges faced Fahey and Harkness as they organized the module, including coordinating the 22 presentations and their multiple parts so that subject matter did not overlap and so that the project was completed on schedule. “The biggest challenge was in understanding the opportunities and limitations to this new approach to presenting educational material,” says Fahey. “On the one hand, all of the presenters had to consider how to organize their material in a manner that may have differed from the traditional methods they had used before. On the other hand, there were also cases in which the creativity of our presenters exceeded the capabilities of the presentation software.”

In nuclear medicine, as in any other endeavor, progress depends on identifying specific needs and then mustering the resources and organizational skills to fill them. “It became clear to both the SNM Academic Council and the ERF that basic educational materials in nuclear medicine might not be readily available to all technologists and resident physicians who are studying to become nuclear medicine practitioners,” says Conrad Nagle, MD, a past-president of the ERF. “The ERF decided to fund the development of the CD-ROM as a donation to ensure that students could have easy and inexpensive access to this material.”

With the support of the ERF, the SNM sent a copy of the module to every radiology and nuclear medicine residency program and technologist training program in the United States—a total of more than 500 copies. Support for the teaching module is part of the mission of the ERF to “advance excellence in health care through support of education and research in nuclear medicine.” To accomplish this goal, the ERF also invests in people and ideas by funding fellowships, scholarships, grants, and awards. The group also recognizes outstanding achievement through the Cassen Prize, the Marc Tetalman Award, and the Technologist Award. Suggestions have already been received for possible donations to underdeveloped countries, where basic instruction in science and medicine is often difficult to obtain.

“The Education and Research Foundation is delighted with the outcome of its grant to the SNM to produce a quality basic science CD that can become a widely available and valuable educational resource,” says Ken McKusick, MD, president of the ERF. “The directors and faculty deserve acclaim for this program. Personally, I recommend that everyone in the field of nuclear medicine buy the CD and spend some time reading through the chapters. It is a refreshing way to brush up on some basic underlying concepts in our field and maybe even to learn something new. We hope that the Basic Science CD receives wide publicity and that it becomes available to students in all pertinent training programs.”

The cost of this instructional CD-ROM is $19.95. To order online, visit the SNM Service Center at servicecenter.snm.org or call (800) 513-6853; from outside the United States call (703) 326-1186.
SNM Issues Two New Volumes in Nuclear Cardiology Self-Study Series

At its June meeting in Toronto, the Society of Nuclear Medicine (SNM) previewed two new volumes in the Nuclear Cardiology Self-Study series, prepared under the editorship of Elias H. Botvinick, MD, Professor of Medicine and Radiology and Co-Director of the Adult Cardiac Noninvasive Laboratory at the University of California at San Francisco. “These books are designed to be the most thorough and clinically oriented teaching texts in the field, combining in a unique format the major aspects of cardiology and nuclear medicine that form the field of nuclear cardiology,” said Dr. Botvinick. “They were written for physicians, nurse practitioners, nurses, technologists, and technicians, regardless of their specialty of origin or professional training, who want to do the best nuclear cardiology.”

Dr. Botvinick began work on the series in the early 1990s after a request from the SNM. The last volume in the Self-Study series had been published in 1977, and he soon realized that a major effort would be needed to provide adequate instructional information on a field that had grown exponentially in the intervening decade. He gave up several publishing projects to devote himself to the preparation of eight topics in the series. The task, from concept to publication, will take the better part of a decade. “I gathered a group of world-class coauthors and contributors and put my heart and soul into these books,” he says. “I tried to make them genuine and thorough teaching texts in nuclear cardiology, with clinical impact and input from both cardiology and nuclear medicine, as no texts had attempted before.”

It was Dr. Botvinick’s sense of mission that drove the project from the beginning. He recalls that, in the early 1990s, nuclear cardiology was growing, but it did so under real threats of competition, especially from stress echocardiography. Although much of the research had been performed by cardiologists and nuclear physicians, the clinical field was for the most part limited to practicing radiologists and a relative handful of trained nuclear physicians. Cardiologists were largely excluded from the clinical practice of nuclear cardiology; many vendors would not even sell to them. “Yet, it was clear to me then that the only hope for the field lay in the active interest and involvement of the practicing cardiologist,” he says. “Trained as both a cardiologist and nuclear physician and practicing as both, I had built my academic career around these methods and I believed that I was able to see them—as well as the competition—from both viewpoints. I believed then, as now, that the skilled application of the methods lies in the combination of specialized principles from both fields.”

His goal in the series was to bring nuclear cardiology to life, an effort apparent in the hundreds of illustrations in the two new volumes. Of special interest and utility are the numerous illustrated case questions and answers and the in-depth and exhaustive annotated bibliographies. “The SNM is grateful to Dr. Botvinick for his extraordinary work in coordinating the writing and preparation of these volumes,” says Melissa McKenna, SNM Director of Publications. “These are valuable and useful additions to the field and have already received praise from clinicians and nuclear medicine specialists.”

Topic 5: Myocardial Perfusion Scintigraphy—Technical Aspects (218 pages) includes chapters on coronary blood flow; technical aspects of gated SPECT myocardial perfusion scintigraphy (MPS); stress testing protocols, imaging protocols; image acquisition; image processing and quantitation; common planar and SPECT image artifacts; FDG imaging with conventional cameras; and state-of-the-art technology. The book has a list price of $119 and is available to SNM members for $85.

(Continued on page 38N)
Report Suggests PET Market to Grow Rapidly

According to a report issued in late July by Frost & Sullivan (San Jose, CA), a market research consultant, the use of clinical PET is growing rapidly. The report predicts that the PET market will grow to more than $880 million/year by 2007. “The PET market was incredible in 2000, generating more than $200 million in revenues,” said Frost & Sullivan medical imaging analyst Monali Patel. “The surge is attributable to favorable reimbursement for a number of PET applications set by CMS [Centers for Medicare and Medicaid Services] and growing awareness of the clinical utility PET offers.” The company’s indicators suggest that maximum utilization of PET units will lead to installed-base sites purchasing additional new units long before replacements are needed, meaning the market will grow in both breadth and depth.

The report also predicts that the gamma camera market will grow to $426 million by 2007, but that this market may be “on the verge of saturation” because of recent adverse CMS decisions. Frost & Sullivan believes the gamma camera market will grow mainly through the development of new applications of existing technologies, usage of newer pharmaceuticals, and the improvement of product specifications. For more information on the report, see www.frost.com/prod/corpnews.nsf.

Neurophysiologic Component of fMRI Signal

The underlying relationship between neurophysiology and the oxygen levels that correspond to different activities in the brain, as measured and imaged by functional MRI (fMRI), has remained elusive. Although numerous fMRI studies have focused on differences in the way the brain responds to various activities and conditions, the connection between these activities and conditions and the neuronal changes that underlie blood flow has been difficult to identify. In an article published on 12 July in Nature (2001;412:150–157), Logothetis et al., from the Max Planck Institute for Biological Cybernetics in Tübingen, Germany, presented the results of simultaneous intracortical recordings of neural signals and fMRI responses. The authors compared local field potentials (LFPs) and single- and multiunit spiking activity with highly spatiotemporally resolved blood-oxygen-level-dependent (BOLD) fMRI responses from the visual cortex of monkeys. The largest magnitude of changes was observed in LFPs, which, at recording sites characterized by transient responses, were the only signals that significantly correlated with the hemodynamic response. The results indicate that fMRI detects areas of the brain that process information arising from a stimulus, rather than neurons that fire to respond directly to that stimulus. In a commentary (Nature, 2001;412:128–130), M.E. Raichle discussed the significance of this finding, which has implications for other areas of functional imaging.

UC Davis Reactor to Produce $^{125}$I

On August 20, U.S. Secretary of Energy Spencer Abraham announced the signing of a contract with the University of California at Davis (UC Davis) to provide Department of Energy (DOE) technology and source material for commercial medical production of $^{125}$I for brachytherapy in prostate cancer. “With the help of isotopes such as $^{125}$I, prostate cancer has become one of the most treatable forms of cancer today,” said Secretary Abraham. “This initiative with UC Davis will make an important medical isotope commercially available here in the United States and help save lives.” The contract will lay the groundwork for UC Davis’s first major entry in the commercial isotope production, positioning the university to become a major domestic supplier of $^{125}$I.

“We are proud to be recognized by the DOE as the sole U.S. source of the $^{125}$I isotope that is so effective in treating cancer, especially prostate cancer,” said Barry M. Klein, Vice Chancellor for research at UC Davis. Under the terms of the agreement, the DOE is transferring the exclusive rights to a technology used to separate the $^{125}$I from other isotopes. The DOE is providing source material from its stable isotope inventory at the Oak Ridge Reservation (Oak Ridge, TN) under a lease arrangement for 5 years, with options to renew.

The $^{125}$I will be produced by the UC Davis McClellan Nuclear Radiation Center near Sacramento, CA. The center owns and operates a robot-controlled, 2-MW research reactor, originally built in 1990 by the U.S. Air Force to detect hidden defects in aircraft. In addition to medical isotope production, the reactor supports the university’s nuclear engineering program, geology, research, and industrial applications. The facility is operated by Science Applications International Corporation, a San Diego-based engineering company.

FFTF Review Complete; Evaluation of Hanford Continues

The final report of a 90-day review of options for restart or shutdown of the Fast Flux Test Facility (FFTF), a thermal, liquid-cooled nuclear facility located at the DOE’s Hanford Reservation near Richland, WA, was accepted in late July. Within days, the DOE announced that it would begin a 60-day review of one proposal to use the FFTF as a commercial production facility for medical isotopes in the treatment of cancer and in research, as well as for other industrial uses. The initial review and report on options for reactor restart or shutdown was commissioned in April, directing the DOE to thoroughly review all relevant factors affecting the January 2001 decision to permanently
deactivate the FFTF.

Based on the review of all options and the submitted expressions of commercial interest, the review team concluded that only one proposal provided new information worthy of further consideration for the potential commercial use of the facility and several other surplus Hanford facilities. A working group that includes DOE real property and procurement specialists and legal counsel will be tasked to evaluate, by the end of September, the viability of the submittal to use the facility for the commercial production of medical and other industrial isotopes, as well as options for disposition of the property. Based on that evaluation and considerations of the submittal under the National Environmental Policy Act, the DOE will then decide whether to pursue disposition of the FFTF for commercial use or move ahead with facility deactivation. The reactor has been shut down since 1992, and its nuclear fuel has been removed. The reactor currently is maintained in a safe standby condition.

GE Acquires Coincidence Technologies, SA

On August 27, GE Medical Systems (Waukesha, WI) announced that it had signed an agreement to acquire Coincidence Technologies, SA (Liege, Belgium). Coincidence Technologies designs, develops, and manufactures state-of-the-art synthesis and handling units for PET radiopharmaceuticals. The company experienced strong growth during the past 2 years as a result of the success of its FDG Synthesizer product. The Coincidence Synthesizer unit has shown above-average yields of FDG (>60%) at a number of cyclotron installation sites worldwide. The higher yields have allowed cyclotron users to produce more FDG per production run.

Conference to Celebrate 50 Years of Brain Research at NIH

The National Institute of Mental Health and the National Institute of Neurological Disorders and Stroke have announced a symposium celebrating 50 years of brain research at the National Institutes of Health (NIH). The symposium is scheduled for October 9 and 10 at the Natcher Conference Center on the NIH Main Campus in Bethesda, MD. Leading scientists and patient voluntary organizations will present and discuss advances in research and treatments for brain disorders. Details on the program, registration information, and directions for participating in a Web cast of the event can be found on the Internet at www.masimax.com/50brain/. There is no fee for registration.

SNM Cardiology Self-Studies

(Continued from page 34N)

Topic 6: Myocardial Perfusion Scintigraphy—Clinical Aspects (396 pages) includes chapters on diagnosis of coronary artery disease; detection of disease in individual coronary arteries; perfusion and function: first-pass and gated studies; identification of severe and extensive (high-risk) coronary artery disease; perfusion image quantification; perfusion image reproducibility; image interpretation; imaging the effects of medical therapy; the prognostic value of SPECT MPS; MPS in specific clinical settings; patient outcomes after MPS; when to apply scintigraphy; myocardial ischemia and noncoronary heart disease; assessment of myocardial viability; risk stratification in the post-thrombolytic era; consideration of scintigraphic cost-effectiveness in coronary disease evaluation; and comparison of MPS with echocardiography. The book has a list price of $182 and is available to SNM members for $130. The books may be purchased together for a list price of $280 and are available to SNM members for $195. To order these books online, visit the SNM Service Center at servicecenter.snm.org or call (800) 513-6853 or, if you are outside the United States, (703) 326-1186.

Erratum

In an article by Pollycove and Feinendegen (J Nucl Med. 2001;42[8]:26N-37N), the Acknowledgment should read “The authors deeply appreciate...support by the U.S. Nuclear Regulatory Commission, Washington, DC; Radiation, Science, & Health, Inc., Worcester Polytechnic Institute, Worcester, MA; and the U.S. Department of Energy, Washington, DC.” We regret the error.