Perhaps the key theme of SNM’s Annual Meeting this past June in Washington, D.C., was that our field is changing rapidly. SNM has a new logo and a redesigned Web site. The Journal of Nuclear Medicine has a new look. Throughout the field there is less emphasis on the words nuclear medicine and more on the new SNM tag line Advancing Molecular Imaging and Therapy. One of the driving forces behind the shift is that the technology used to produce PET and SPECT images is advancing rapidly, while hybrid scanners have captured the interest of people in molecular imaging and the PET market itself.

In just a few years, PET has risen from a modality used by few clinics outside of the university setting to PET/CT as a clinical mainstay of nuclear medicine. The development of SPECT/CT has been exciting—but slower to gain acceptance than PET/CT. PET/MR and SPECT/MR have been under development for preclinical imaging for some time. Images from the first PET/MR scanner capable of human use were shown at the June SNM meeting.

One of the drawbacks of PET/CT and SPECT/CT has been that the (very expensive) CT scanner must sit idle during the relatively long PET or SPECT acquisition. As the number of slices and the expense of CT scanners increase, there will be more pressure to reduce the time required for the PET or SPECT images. Manufacturers of PET scanners have tried to address this...
The first annual SNMTS Leadership Academy, the centerpiece of the leadership development strategy outlined in the Technologist Section’s strategic plan, was held Sept. 14–16 in Berkley, Calif. Attending—along with SNMTS leaders—were 10 of our brightest young technologist professionals, chosen for their interest, effort and overall dedication to the Technologist Section.

The goal of the SNMTS Leadership Academy, spearheaded by SNMTS Past President D. Scott Holbrook, CNMT, PET, FSNMTS, is to prepare young professionals for leadership roles at the chapter and national levels by developing necessary leadership skills and organizational expertise. A Leadership Academy Task Force has been formed to decide the future of the academy, including the application and selection criteria for future attendees.

To keep these activities moving forward, SNMTS needs your help. Please consider getting involved with the Technologist Section. Both SNMTS President David Gilmore and I have an open-door policy for your comments, suggestions and concerns. Please contact me via e-mail at spfdmark1@mchsi.com. I hope to see many of you at SNM’s Mid-Winter Educational Symposium Feb. 14–17 in Newport Beach, Calif.
Efforts Successful to Restore Research Funding

By Michael Peters, Assistant Director, Health Policy and Regulatory Affairs

On Dec. 26, President Bush signed an omnibus appropriations package for fiscal year 2008. The bill contains $411,273,000 for biological research at the Department of Energy (DOE) Office of Science, including $31.5 million for Medical Applications and Measurement Science, an increase of approximately $17.5 million explicitly for basic nuclear medicine research. The added funds must be awarded competitively in one or more solicitations that includes all sources (universities, the private sector and government laboratories) on an equal basis.

For almost 60 years, DOE supported basic nuclear medicine research that helped develop numerous scientific breakthroughs. Since the program was cut in 2006, many important projects related to nuclear medicine were abandoned and long-term innovation was severely jeopardized. In 2008, the Senate Energy and Water Appropriations Committee report included $34 million for the DOE Office of Science/Office of Biological and Environmental Research Medical Applications and Measurement Science program, restoring $20 million explicitly for nuclear medicine research. However, the House version of energy appropriations did not address the issue. After end-of-year negotiations, the final version included the additional funding.

SNM has been at the forefront of this issue and, along with its members, has helped provide awareness through various outreach activities. For example, on Oct. 30, the society published a full-page advertisement supporting basic nuclear medicine research in Roll Call, a Capitol Hill publication that reaches nearly 12,000 opinion leaders in Congress and the political community.

CARE Legislation

As Uptake goes to press, the Consistency, Accuracy, Responsibility and Excellence (CARE) in Medical Imaging and Radiation Therapy legislation (H.R.583 and S.1042) is still under consideration by its respective House and Senate committees of jurisdiction. Unfortunately, the CARE legislation has been overlooked by legislators because of a number of gargantuan health care issues on Capitol Hill over the summer, including SCHIP and PDUFA IV.

During the week of Nov. 4, the Alliance for Quality Medical Imaging and Radiation Therapy (co-founded by SNMTS) asked its various constituencies to contact Capitol Hill to urge passage of CARE before the end of the year. Many individuals and organizations participated in the “Virtual March,” and time will tell if these collective efforts result in moving CARE successfully through committee.

In the meantime, go online to www.snm.org/care to see how you can help move this legislation successfully through the legislative process.

SWCSNM Hosts First Annual CPR Recertification

By Vesper Grantham, SWCSNM President-Elect, and Myra Nelson, SWCSNM President

This past October, the Southwestern Chapter Society of Nuclear Medicine hosted its first annual CPR recertification along with its fall technologist educational meeting in Oklahoma City, Okla. The chapter hosted 10 CPR participants and 62 meeting participants.

Many freestanding clinics are staffed with only one technologist. It is a hardship for these departments to close the nuclear medicine department/clinic for their technologist to attend continuing educational seminars while also maintaining CPR certification. Often, technologists who work in such environments have to take personal time to attend the necessary CPR courses. By offering the CPR course the night before the educational sessions, participants were allowed a chance to renew their CPR without requiring any additional time off. This was an opportunity for the Southwestern Chapter to provide an additional service to their members.

The CPR recertification consisted of two parts: an online renewal course and a skills validation/ test. Participants enrolled in the CPR renewal and completed the AHA Basic Life Support Health Care Provider Online Renewal Course. The course is available to the public on the American Heart Association Web site for $17.50. This online renewal course teaches the same material as the classroom-based course, but it allows a technologist the flexibility to complete it at home or at work— and at one’s own pace. Topics covered in the modules include adult, pediatric and infant CPR and AED use. The comprehensive modules with video guides and online assessments are a thorough review and preparation for the skills validation/ test that must be facilitated by certified AHA instructors to complete the recertification.

Participants completed the BLS Online Renewal Course prior to the meeting and brought their certificate of completion to the Southwestern Chapter Meeting the Friday prior for the facilitated skills validation/ test. A nominal enrollment fee of $15 paid for this facilitated session. Nursing faculty with the University of Oklahoma Health Sciences Center, certified as American Heart Association (AHA) instructors, conducted the skills validation to complete the CPR recertification. After participants completed their skills test, they received their AHA BLS–Health Care Provider card. The chapter received excellent feedback from the CPR participants including “This was the best CPR class I have ever taken” and “The CPR renewal was one of the best parts of the meeting.”

For a free demo of the CPR Web course, go online to http://www.americanheart.org/presenter.jhtml?identifier=3019553.
Members of SNM's Scientific Program Committee—along with staff from the society's education and meetings departments—have visited the historically rich and welcoming Big Easy, the site of our 55th Annual Meeting June 14–18. In addition, a number of representatives of companies who are planning to exhibit at the meeting also have visited the city. We are happy to say that New Orleans is ready, able and eager to host our meeting.

The Scientific Program Committee held an all-day session to plan and organize the scientific and educational aspects of the meeting. We, along with the exhibitors, visited the newly renovated Ernest N. Morial Convention Center this past summer. We stayed at the Hilton Riverside Hotel, where some of the meeting festivities will also take place. Although we had a very hectic schedule for the few days we were there, we still found some time to take a bus tour of the city, including the Warehouse and Arts and Garden districts as well as some of the areas affected by Hurricane Katrina. We had a chance to stroll through the French Quarter and to sample some unbelievable cuisine.

We are pleased to say that the parts of the Crescent City where SNM attendees will be spending time are very much like they were when the society held its successful 50th Annual Meeting in 2003. These areas remain safe—and even boast some improvements. First-time attendees will enjoy the rich cultural experience of this unique and enthralling city. The Garden District still exudes its own style, with wonderful shops along Magazine Street. The Warehouse and Arts District is bustling with new exhibits at large and small museums. Even the French Quarter appeared cleaner, but not enough to detract from its funky appeal. In fact, these are the parts of the city least affected by hurricane Katrina, and their vitality is leading the way for the rebirth of the other parts of the city.

In the aftermath of Katrina, many of the hotels took the opportunity to renovate their facilities, and several new hotels have been constructed in the vicinity of the convention center. In fact, all of the hotels currently being considered by SNM are less than a 10-minute walk to the portion of the convention center that we will be using. We can also attest to the fact that there are a number of outstanding restaurants within walking distance of the hotels. The French Quarter and the Warehouse and Arts District are just a short walk away.

The Morial Convention Center has also undergone a total renovation since Katrina. Perhaps the most exciting addition is the availability of free wireless hotspots throughout the building. Attendees with wireless devices will be able to avoid the lines at the kiosks when checking messages, reviewing continuing education credits and reading e-mail from back home. Did we mention that it was free! The convention center, situated along the mighty Mississippi River, is almost a mile long. The 2008 Annual Meeting will be held in the portion of the center closest to the Hilton Riverside (exhibit halls A and B), which we feel will be the most convenient.

We left this celebrated city absolutely certain that it will host the 55th Annual Meeting superbly, providing one of the best SNM Annual Meetings ever. The American College of Cardiology hosted 26,000 attendees last spring, and by all accounts, that meeting was a great success. This culturally rich city is ready to host our meeting—and looking forward to it. We were welcomed everywhere we went. Convention center staff, shop owners and waiters in coffee shops thanked us for visiting and contributing to the rebirth of this wonderful city. We plan to provide opportunities to volunteer in some of the affected areas for those who may want to spend a little extra time in New Orleans.

Everything is in place for a truly outstanding meeting: a great meeting place, wonderful and convenient hotels, an incredible collection of outstanding restaurants for all budgets and a city that is waiting with open arms to welcome us with the best that southern hospitality has to offer. The only essential ingredient to be added is you! If you have any questions, please do not hesitate to contact us by e-mail at nswanston@di.mdacc.tmc.edu, frederic.fahey@childrens.harvard.edu or meetinginfo@snm.org (SNM’s meetings department). We are happy to provide you with all the information you might need. See you in NOLA this June!
From Technologist to Commercial Representative

By Carol Bonanno, CNMT

Are you still having fun as a nuclear medicine technologist? Or, are the days and nights of call too, too much? Do actions like budgeting, evaluating personnel reviews, developing new protocols, scheduling, ordering supplies and isotopes, doing wipe tests and floods, calibrating machines, imaging lots of patients and smiling while physicians take their frustrations out on you get to you? Are you so over hospital food, late patients, (even later) doctors and being up at 5 a.m. (smiling, fresh and ready to work at 7 a.m.—or even earlier)?

These things can make the life of the sales representative or applications specialist look pretty good. He or she comes sailing into your department with PDA, Blackberry and briefcase in hand, dressed in a nice suit (no scrubs) with attractive shoes and a big smile on his or her face. And, look at the perks—that person has the opportunity to enjoy lots of travel, earn frequent flyer miles and hotel points, eat at fantastic restaurants and entertain customers. It sounds like the life of Riley.

So are you ready to come to the “dark side” of the commercial world? Well, we have our frustrations too. Instead of getting up at 5 a.m. to get to a hospital, we may be up at 4 a.m. to be at an airport by 6 a.m. to check in and pray for room in the overhead for our laptop. We then fly to a new city, pick up a rental car and then try to find you and your department. Thank goodness for Expedia, MapQuest and GPS. On arrival at your site, we go to the purchasing department—often in the basement or at another building far away. There we must give up our car keys, driver’s license and first-born child to ensure that we will return the beautiful name badge we are loaned. Some places want proof of TB testing, flu shots and blood alcohol levels—along with our most recent tax statement.

By the time we get to your department, you have had several emergencies, a surprise inspection from NRC and two staff members have called in sick. “I will be glad to come back next month, but you don’t mind if I finish this March 2002 People magazine before I leave?”

We then head to an imaging center down the street to meet with the CFO who wants discounted prices for everything—even though he is only doing a few studies a month. He would like to be taken to a ballpark and to dinner at Wolfgang Puck’s to discuss his center’s account. And, oh, he would be glad to select some wine; this 40-year-old Rothschild sounds nice. “So sorry, our friends in Washington will no longer allow us to entertain customers or provide anything that can be considered a ‘kick back’ or can help a customer make more money.”

At the end of the day, we head to our luxurious (?) hotel for a relaxing evening in front of our computer, logging the days’ work, checking our e-mail and communicating with our customers and co-workers. At some point, dinner is ordered (could be fast food or a nice meal), but we have to watch the calories, fat and carbs. It is so easy to gain weight on the road. We often get home late on Friday and hope our luggage is able to join us.

Students: We often get home late on Friday and hope our luggage is able to join us.

By Anne Stachowiak-Fisher, CNMT, RT(N)(R), CCRC

Looking to find money for college, travel to SNM’s 55th Annual Meeting or clinical advancement? You’re in luck. SNMTS has new opportunities to assist with paying for these and more. Please check the SNM Web site (www.snm.org) for full details.

Travel Awards: SNMTS is providing 25 travel awards—each totaling $1,500—to support registration, travel and accommodations for nuclear medicine technologists presenting their submitted abstracts for the first-time at SNM’s 55th Annual Meeting June 14–18 in New Orleans, La.

Bachelor Degree Completion Awards: The Technologist Section is providing five $5,000 awards for students who are pursuing a bachelor degree completion program related to their nuclear medicine career.

Advanced Practitioner Program Scholarships: Two $5,000 scholarships are available to support students who are pursuing an advanced practitioner program in nuclear medicine.

Student Travel Awards: Twelve $1,500 awards that support registration, travel and accommodations for nuclear medicine technology students who will present molecular imaging abstracts at the SNM Annual Meeting are available.

Clinical Advancement Awards: SNMTS is providing $500 awards for 50 technologists who are pursuing clinical advancement through didactic educational programs. These programs must be college-credit eligible; however, completion does not need to result in a degree.

If you have any questions about these award programs, please contact either Teri Pinkham, director of development, by phone at (703)326-1194 or via e-mail at tpinkham@snm.org or Nicole Kern, program manager, by phone at (703) 652-6795 or via e-mail at nkern@snm.org.
through the use of time-of-flight, longer bore scanners and faster electronics. Radical new designs for SPECT systems have been introduced, but their incorporation into SPECT/CT is still some time off. A few of these advances are discussed below.

**Time-of-flight PET:** An old idea, time-of-flight PET has become practical with the introduction of new scintillation crystals and fast electronics. PET imaging is based on the detection of two 511 keV photons emitted at approximately 180 degrees by the matter/antimatter annihilation of an electron and a positron. Time-of-flight PET uses the difference in the arrival time of the two photons at the detectors to further localize the annihilation event based on the speed of light. While time-of-flight PET was described and implemented more than 20 years ago, the widespread adoption of BGO as the scintillation crystal of choice made the use of time-of-flight impossible. While it has many good properties, the duration of the scintillation light flash in BGO is too long for the use of time-of-flight. The introduction of LSO and LYSO crystals—with their higher light output and faster scintillation decay time—has brought back the promise of time-of-flight PET, faster scan times and higher resolution.

**PET/MR:** At SNM's 54th Annual Meeting, researchers from Tuebingen and Cologne in Germany, the University of Tennessee Medical Center and Siemens Medical Systems revealed the first simultaneously acquired PET and MR images of humans (Schlemmer, et al, *J Nucl Med.* 2007:48:45P). The PET scanner is based on LSO crystals and avalanche photodiodes (instead of photomultiplier tubes) to make it magnetically insensitive and is mounted inside the MR scanner's magnet coils. Due to size constraints, this first scanner is designed as a dedicated brain scanner, but the same technology could be used for a larger scanner. The developers report that the scanner allows fMRI and spectroscopy in addition to anatomical MR scans. The initial benefits of PET/MR will be in neurology where MR predominates CT. Drawbacks of PET/MR include higher cost and larger size than PET/CT and the fact that MR images are not as readily translated to PET attenuation correction maps as CT images. It will be interesting to see if PET/MR will compete with PET/CT as the technology develops.

**SPECT/CT:** Two different approaches have been taken to the commercial implementation of SPECT/CT. The first, which has been available for several years, incorporates CT directly into the SPECT gantry with a low-power X-ray tube and detector mounted on the same ring that rotates the cameras. More recently, systems have been developed mounting a standard CT scanner and a SPECT system so that one imaging table passes through both units. This design allows the use of a higher-quality CT scanner (at much higher expense and radiation dose). SPECT and CT images are acquired sequentially as the table moves the patient between the two units. SPECT/CT systems tend to be larger and heavier; they require more shielding than traditional SPECT systems (especially true of systems with traditional CT scanners). During the CT scan, scatter can be a major source of radiation exposure, and a shielded control area may be required.

**Radical SPECT camera designs:** While the installation requirements of SPECT/CT systems have become more complex, the quest for nuclear cardiology has been for smaller, lighter systems. Three systems have been introduced that further reduce these space requirements through upright imaging (the patient is seated in a chair) and also seek to radically improve sensitivity. The first—already in clinical use throughout the United States—uses individual CsI(Tl) crystals coupled with photodiodes in place of the conventional NaI crystal/PMT camera design to reduce camera size while introducing a third detector to improve sensitivity (Digirad Inc., Poway, Calif.). The second unit, which will soon begin clinical trials, surrounds 180 degrees of a patient's chest with a stationary detector arc. Collimation is provided by vertical
slits in a scanning aperture arc near the patient coupled with vertical detector elements (NaI/PMT) in the rear. Horizontal slits in between the aperture arc and the detectors provide slice collimation (Cardi/Arc Inc., Lubbock, Texas). The third system—in process of finishing trials at four luminary institutions—employs nine detector columns arranged in an arc around the patients. Photons are detected using tungsten square hole collimators matched to CZT (solid-state) crystals. The detector columns swivel in place to cover the heart (Spectrum Dynamics, Tirat Hacarmel, Israel). Figures 1 and 2 illustrate the radical appearance of these systems and their compact size.

Speeding things up with software: One of the most exciting developments in SPECT imaging in the past two years has been the introduction of advanced reconstruction techniques that promise to improve resolution and radically reduce the time required for imaging. Whether they are called 3D/wide-beam reconstruction or resolution recovery, these techniques work by incorporating the characteristics of the camera (intrinsic resolution of the camera, collimator characteristics, etc.) and advanced noise reduction techniques into iterative reconstruction algorithms. At SNM’s Annual Meeting, one PET/CT manufacturer introduced a similar approach to PET image reconstruction with very impressive demonstration images.

I have advocated a conservative approach to the use of these algorithms until extensive, peer-reviewed analysis of the methods is completed. Several papers were presented this past June with encouraging results. The methods offered by the major SPECT camera manufacturers and at least one independent company vary in capability and the algorithms tend to be closely guarded secrets. I do not believe that reported utility of one manufacturer’s product necessarily should be interpreted as blanket approval for all available methods. Regardless, exciting advances are being made in the world of software as well as in camera design.

Crystal balls and predicting the future: I cannot predict how the technical advances described here (and others yet to come) will change molecular imaging and nuclear medicine (in particular). I learned long ago that my crystal ball is cracked and my predictions are not worth much. (I predicted in 1989 that we would all be using triple-head SPECT systems by the year 2000, a technology that never quite reached 3 percent of the market). There are too many questions that I cannot answer. Will new crystals make LSO/LYSO obsolete? Will compact SPECT systems facilitate the integration of SPECT/CT? Will technology discussions next year focus on the clinical roles of PET/MR and SPECT/MR? I don’t know the answers, but I’m excited by the rapidly advances in technology that may radically change the field that is coming be known as molecular imaging.

James R. Galt, Ph.D., is the director of nuclear medicine physics at Emory University Hospital in Atlanta, Ga.

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**VOICE Box**

**VOICE Credit Online Application Submission**

By Jannine Henderson, Associate Director, Education

To streamline the VOICE application process, SNM has launched an online application submission system. This new submission process will allow activity sponsors and coordinators to submit applications electronically four weeks in advance of an activity. It also ensures that the application is properly processed, reviewed, approved and designated for credit prior to the activity date.

**Application Features**

- Organizers of CE activities log in with their SNM login and password.
- Listed sections are similar to the current hard-copy VOICE application; they also include sections for other credit types if they are applicable to an activity.
- Check marks indicate whether or not a section has been completed.
- If a section of an application is completed—it is saved—so you may complete applications at your leisure. You may return to the application and continue where you left off.
- You may invite faculty via the application. When individuals confirm their participation, they will be prompted to submit any required (including biographical) information.
- Payment of the application fee may be made immediately by credit card (American Express, Visa or MasterCard) or by check.
- When an activity is completed, you may upload two lists: (1) activity participants and (2) the sessions they attended. These lists fulfill an organizer’s requirement to report verified activity participants.
- CE certificates specific to the activity will be made available to all activity participants regardless of SNM member status. SNM members will also see credit earned from the activity on their transcripts.
- Organizers may opt to have SNM collect activity evaluations on the organizer’s behalf. If this option is selected, evaluations will be collected from participants en route to accessing their transcripts or CE certificates. Organizers may review participant evaluations collected for an activity from the CE Center.

Please remember—in accordance with the VOICE Guidelines—online applications that are submitted less than four weeks before an activity will not be accepted and reviewed for CE credit.

To see the new process or submit an application, visit SNM’s CE Center at www.snm.org/cecenter (click on For Organizers). A demonstration and instructions of this new online application submission process are available on this page. If you experience technical problems or have questions about this new submission process, please contact Brian Reach, associate manager of e-learning/IT, via e-mail at breach@snm.org.
Uptake publishes meetings of SNM chapters—and other nonprofit organizations sponsoring events of interest to SNMTS members—free of charge. A more extensive calendar may be found online at www.snm.org/Calendar. Interested parties are encouraged to post their meeting plans, including a description of the topics covered and CE credit available, at www.snm.org/CalendarSubmit.

2008

Feb. 4: Reimbursement Roadshow, Keck School of Medicine University of Southern California, Los Angeles. Host: SNM. Contact: SNM health policy and regulatory affairs department, hpra@snm.org.

Feb. 14–17: 2008 SNM Mid-Winter Educational Symposium, Newport Beach, Calif. Host: SNM. Contact: Maureen O’Connor, meetinginfo@snm.org, (703) 708-9000, ext. 1229; fax: (703) 708-9274.


March 7–8: SNMTS 37th Annual Spring Symposium, Tropicana Casino and Resort, Atlantic City, N.J. Host: Greater NY Chapter. Contact: Ellie Zimmer, ezimmer329@verizon.net, (609) 513-3229.


April 4–6: Central Chapter Spring Meeting, Intercontinental Hotel Milwaukee, Wis. Host: Central Chapter (www.ccsnm.org). CE Credit: 17 hours, VOICE (anticipated). Contact: Merle Hedland, mhedland@bacon-hedland.com, (630) 323-6880, fax: (630) 323-6989.


June 14–18: SNM 55th Annual Meeting, New Orleans, La. Host: SNM. Contact: Maureen O’Connor, meetinginfo@snm.org, (703) 708-9000, ext. 1229; fax: (703) 708-9274.