

Patient Simulation Lab Opens

The Medical Center has just added a major resource that could significantly alter resident and medical student education and greatly expand problem-based, hands-on learning for medical staff and the general public. As of May 4, a Patient Simulation Laboratory has opened that offers a state-of-the-art, full-scale simulator for clinical instruction. The project, more



Steve Panish (left), Assistant Director of Facilities Planning and Construction for the Medical Center, and Mike Olympio, M.D., Director of the Patient Simulation Laboratory, review the lab's floor plan.

than seven years in the planning, began in the Department of Anesthesiology, gained institution-wide support, and will offer training to Medical Center residents, medical students, nursing students, faculty, and staff. It will eventually be open to community groups for instruction, including the Boy Scouts, Girl Scouts, Explorers, Senior Citizen groups, and the continuing medical education programs of local physicians.

The simulator, involving a mannequin whose condition can be adjusted and monitored electronically, allows the replication of many OR, trauma, and critical care cases; the exercise of a wide range of anesthetic treatments; and performance improvement through practice and review of videotaped cases. Mike Olympio, M.D., associate professor in the Department of Anesthesiology and catalyst for the project, will devote three

days a week to his new job as Director of the Patient Simulation Laboratory. The lab will be temporarily located next to the Preoperative Assessment Clinic on the Medical Center's G level, until preparations are complete at its permanent site, a central, first floor location right near the main OR. This spring, Olympio has held planning meetings in Facilities Planning with architects for the construction of the approximately 1200-square-foot permanent lab.

INSTRUCTION

First in line for simulator instruction will be anesthesiology residents. "At the end of June, we will go live with our current residents for a shakedown of the lab," Olympio stated in a recent conversation. "The actual curriculum with the simulator will begin July 2 with the CA-1 residents. The new curriculum will change from the initial 1-month, lecture-only format to a 6-week, roughly 40 percent lab-based instruction. Residents will start off with a full day on July 2 in the lab for orientation to the monitors, gas machine, and Ploss cart, with performance of routine general anesthetic inductions and airway management. Then the new residents will alternate from the OR to the simulation lab on a continual basis for basic introductory skill development, in addition to the introductory conference which will be conducted by a number of selected faculty."

Medical Center faculty and staff providing lab instruction will help create electronic presentations consistent with the new computerized medical school curriculum and stressing performance evaluation. Olympio is working with Cam Enarson, M.D., Associate Dean for Medical Education, to make lab instruction compatible with the medical students' PC learning format. Medical students will begin lab rotations in October with an initial session on cardiovascular physiology. Olympio says, "The goal will be to videotape and automate the presentations so that, eventually, they can be run at the press of a button without having each attending or instructor physically present to conduct the exercise. The idea is to create a whole library of electronic presentations that can be automated to reduce manpower requirements." The lab will be outfitted with the latest slide and video programs for introducing material before a case. "Each simulated exercise will be videotaped," noted Olympio, "and a major part of the learning experience will be the debriefing of the videotape. Hands-on, active learning will always be emphasized."

continued on page 3

EDUCATION HIGHLIGHTS

Other recent departmental changes in the area of education, besides the opening of the Patient Simulation Laboratory, include the following:

Residency

This year's Match marks the beginning of an expansion in the department's residency size. The department, with North Carolina Baptist Hospital's approval, increased the number of Match positions offered this year to 14, up from 11 in recent years, and offered several spaces outside the Match. For the 1998-1999 year, a total of 38 residents will be in the program; by 2002-2003, the number will grow to 52. For a list of those joining the residency program this year, please see page 4.

Administration

Frank James, M.D., past chair, now divides his time between the department and the Dean's office, in January becoming the first Associate Dean for Graduate Medical Education at Wake Forest University School of Medicine. He continues to teach and provide clinical care in the department while addressing graduate medical education issues in his new post. These include governance, accreditation and institutional standards, relations with the North Carolina Baptist Hospital, affiliated sites for resident education, funding, curriculum reform, work force size, the responsibility and role of residents as teachers, and the recruitment of underrepresented minorities and women to create a house staff which more closely reflects the composition of today's society.

P.I.G.

PAIN INTEREST

GROUP—NOT

LEXINGTON

BARBECUE

by Jim Eisenach, M.D.



Two collaborators in the Pain Interest Group, Hui-Lin Pan (left), Ph.D., and Jim Eisenach, M.D., discuss findings in the Pain Mechanisms Lab of the Department of Anesthesiology.

We are taught that pain is a complex phenomenon, requiring a multidisciplinary approach for successful treatment. This is no less true for research in understanding mechanisms of pain and its treatment, and many university centers with active research programs have regular P.I.G. meetings to achieve this multidisciplinary approach. Our P.I.G. started last fall and is organized and held in the Department of Anesthesiology. Meetings are every other Tuesday for exactly one hour, beginning at 5:00 p.m., in the Anesthesiology Library. I usually bring cookies, baked by my teenage daughter or me. As she will soon get her driver's permit, future cookies will probably come from me.

The P.I.G. is a meeting open to all members of the department (residents, staff, and research personnel) and to others in the Medical Center interested in pain and its treatment, and a typical meeting includes 15 to 20 people. About two-thirds of the meetings are presentations by basic scientists from Anesthesiology, Physiology and Pharmacology, or Neurobiology and Anatomy. A few recent topics: J. Thomas Martin, Ph.D. (Physiology and Pharmacology), described his studies showing that the reinforcing properties of heroin and other opiates are strikingly different

between normal rats (which rapidly escalate doses in this model of addiction) and those with a chronic pain condition (which maintain a more stable dose at a level just adequate to remove the pain). Robert Coghil, Ph.D. (Neurobiology and Anatomy), described his studies demonstrating areas of the brain activated by acute, noxious thermal stimuli in normal individuals, as studied by Positron Emission Tomography. Joe Tobin, M.D., described a series of studies in the lab designed to understand why females have a greater analgesic effect from cholinergic agonists than males.

The remaining one-third of the presentations deal with clinical research, including summaries of active protocols in volunteers in the General Clinical Research Center, or in patients on the Acute Pain Service, in the Pain Control Center, or Obstetric Anesthesiology. A few recent topics: Jim Crews discussed several protocols in volunteers and in patients on the Acute Pain Service, including the study of a sustained-release preparation of epidural morphine to provide one to two days of analgesia after surgery from a single bolus. Richard Rauck presented several protocols in patients with chronic pain, including cryoablation of superficial cervical peripheral nerves for chronic nerve pain syndromes. Robert D'Angelo presented a series of studies using the up-down statistical method (as used to determine MAC of general anesthetics) to compare and contrast intrathecal sufentanil and fentanyl for labor analgesia.

Aside from the good cookies and certainty of finishing on time at 6:00 p.m., there is good fun, good science, and a variety of approaches to a similar problem from people with different backgrounds. Come along and enjoy the P.I.G. A roast is being considered for the end of the year.

The Anesthesia Monitor

Vol. VIII No. 1
Spring/Summer 1999

Published by the
Department of Anesthesiology
and Wake Forest University
Baptist Medical Center

Raymond C. Roy, Ph.D., M.D.,
Chair

Wilson Somerville, Ph.D.,
Editor

Biomedical Communications
Design and Production

For more information
please write or call:

The Department
of Anesthesiology
Wake Forest University
School of Medicine
Medical Center Boulevard
Winston-Salem, NC
27157-1009
(336) 716-4498
FAX: (336) 716-8190

<http://www.wfubmc.edu/anesthesia>

From the Chief Resident

by Michael J. Neville, M.D., Chief Resident

The results of the 1999 match have ensured our continued status as one of the premiere residency programs in the country. This was achieved not only because of the fine reputation of the department and its alumni, but through the hard work of many of the faculty, staff, and residents. In these times of decreased numbers of applicants to the field of anesthesiology, it is still very much an applicant's market. Recruiting is very much a part of the interview process unlike times past. While some programs now offer signing bonuses and other incentives, our program is able to match excellent residents based on the quality of the department alone. However, it takes effort to make the applicants aware of the strength of our department. This effort comes from many people, but I want to laud the current residents for their efforts. Their commitment to the resident recruitment process demonstrates their pride in the



Mike Neville, M.D.
Chief Resident

department. Two-thirds of the current residents will have completed their training and moved on by the time these newly matched residents will begin their clinical anesthesia training. Yet, our current residents give up their own time on week nights (after pre-ops!) to meet applicants over dinner and answer their questions about the program to ensure that the reputation of the department continues.

When I applied to residency programs five years ago, other colleagues in the medical school from students to resi-

dents, fellows, and faculty all tried to convince me that anesthesiology was a terrible career choice. However, I was convinced that there would be a continued need for quality anesthesiologists and that if I trained at the best possible program I would not suffer. As I look back, I am convinced that I made the right decision not only

continued on page 4

Patient Simulation Lab Opens

continued from page 1

CASES AND FEATURES

In one case, for example, an anesthesia resident will take over care of a patient with chronic obstructive pulmonary disease who is undergoing a hip operation. In a few moments, preprogrammed oxygen desaturation will set in, testing the resident's ability to handle this complication. Olympio explains that this scenario will give participants the chance to "go through the differential diagnosis of oxygen desaturation, its clinical significance and management, and other related complications." The simulator can be adjusted to increase the difficulty of the scenario relative to the participant's skill. Some learning modules focus only on a single event, such as a machine problem or machine alarm, or intermediate situations involving perhaps two people working through an episode of hypotension. This lab can support a full-scale simulation that includes surgeons, nurses, and anesthesia personnel. More complex scenarios will offer an OR team the opportunity to practice for cases requiring a high degree of communication and crisis resource management.

"The aim is to provide either rare or unlikely events in the simulated laboratory that can be repeated or rerun to any degree," continued Olympio, "and to give residents feedback from the videotape to improve their performance under pressure. The idea is never to intimidate participants, but to re-create a specific environment for improvement."

The simulator for this lab was developed at the University of Florida and is produced by Medical Education Technologies, Inc. "We feel this type offered certain features we wanted in our simulator," noted Olympio, "specifically, more realistic gas exchange and the ability to perform manual CPR." This simulator also gives the instructor two ways to control activity, either from a handheld PC at the bedside or from a panel in the control room, depending on whether the instructor will participate in the simulation or not. Planning for a large lab and a full instruction schedule will help this Center avoid the cramped space and inadequate use encountered at some other centers.

COLLABORATION

Some state-supported medical centers have sought funding for simulator labs primarily from government sources; in other cases, a department has had the computer scientists and engineers on board to build a simulator themselves. Neither situation has pertained in developing this lab. Instead, states Olympio, "Ours is an example of a private university setting in which the simulator acquisition has been accomplished through negotiation with industry and collaboration among Hospital and medical school administration."



The Human Patient Simulator by Medical Education Technologies, Inc., used in the Medical Center's new Patient Simulation Laboratory. Photo courtesy of Medical Education Technologies, Inc., Sarasota, FL.

Through his contacts as chair of the department's Capital Equipment Committee, Olympio landed \$80,000 in high quality anesthesia machinery, including a top-of-the-line Datex Ohmeda AS/3 monitor, complete with gas analysis and spirometry, as well as a new Aestiva 3000 Anesthesia Machine with all features. Willa Abbott, M.S.N., Clinical Director of the Inpatient OR, has overseen North Carolina Baptist Hospital's supplying of much of the equipment for the lab's simulated operating room, including an operating table, instrument table, Mayo stands, and IV stands. The Hospital and medical school are sharing the cost of initial development of the lab for one year, while the department is contributing the academic time and 50 percent of future support of the lab. A budget has been submitted for disposable expenses, and an allotment has been made for a part-time technician.

Support for the simulator had been building in the Department of Anesthesiology long before the first blueprint appeared. Olympio recalls, "Dr. James gets credit for the initial suggestion that I visit the University of Florida to see what was going on down there with simulation—about seven years ago. The concept was discussed in the May 1993 department resident education retreat and felt to be a great idea, although we were limited by manpower and funding."

In January 1998, Olympio and Tim Harwood, M.D., assistant professor in the department, attended a Society for Technology in Anesthesia national meeting on simulation. "There we found that it should and had to be a multidisciplinary and institutional project—not a departmental project," stated Olympio. To invite further interest in the laboratory, Olympio staged a demonstration in early 1998 of two simulators. "I set that up as a simulator fair," he said, "and opened it to the whole Hospital, sent out invitation letters to many people, and lobbied for institutional support. That's when the institution realized we should all be in this together. That's what got the ball rolling." At the same time, the search for the department's new chair was entering its final phase. Convinced of the importance of this laboratory, eventual chair Ray Roy, Ph.D., M.D., made the establishment of the lab with Medical Center help one of the conditions of his taking charge of the department. Medical Center leadership endorsed the project, and thus the commitment for an institutionally supported Patient Simulation Laboratory came about at the Wake Forest University Baptist Medical Center.

FALL PHYSIOLOGY AND PHARMACOLOGY MEETING SET

The Department of Anesthesiology will host its fifth annual meeting of "Advances in Physiology and Pharmacology in Anesthesia and Critical Care," October 31-November 3, 1999, at The Greenbrier, White Sulphur Springs, West Virginia. Roger L. Royster, M.D., program committee chair and founder of the meeting, stated, "We have again assembled a nationally recognized group of lecturers for this meeting. Their presentations will give clear insight into the panorama of drugs, equipment, and patient safety issues facing today's practitioners of anesthesia and critical care medicine. We have provided time for questions and answers in the form of panel discussions after every series of lectures and the opportunity to update Advanced Cardiac Life Support (ACLS) provider skills."

The conference will offer useful information on basic physiologic principles and pharmacologic techniques for physicians, resident physicians, nurse anesthetists and student nurse anesthetists, as well as pharmacologists, pharmacists, and other members of the healthcare industry. Continuing education credits may be earned for the conference and for the ACLS program. The Greenbrier, located in the Allegheny mountains, is annually rated one of the top destination resorts in the world. For additional information, contact Jan Killmeier at (336) 716-2712 or visit the department's Web site at <http://www.wfubmc.edu/anesthesia>.



The Greenbrier Resort will once again be the site for the department's annual Physiology and Pharmacology meeting.

Please visit our Web site at:

<http://www.wfubmc.edu/anesthesia>

We invite your comments and suggestions.

New Residents Augment Program

The Department of Anesthesiology completely filled all 10 PGY-1 and 4 PGY-2 positions in this year's National Resident Matching Program with those chosen representing 11 medical schools in 10 states. The total of 14 spots marks an increase over the 11 positions that had been offered in recent years. Five other candidates accepted outside the Match will further boost residency numbers. Dr. Ray Roy, chair, remarked that the department is "genuinely pleased and very excited" about this "outstanding" class of residents joining the program this year.

Those Joining the Residency Program

Accepted through the Match

PGY-1, 1999

Benjamin L. Antonio, D.O.	Kirksville College of Osteopathic Medicine
Gregory A. Auzenne, M.D.	University of Texas at San Antonio
Angela F. Edwards, M.D.	Wake Forest University
Jeffrey W. Gengler, M.D.	Wake Forest University
Jacqueline M. Hyland, M.D.	University of Kansas at Kansas City
Andrew B. Miller, M.D.	Medical College of Georgia
Amy G. Proffer, M.D.	University of Texas at San Antonio
Theodore E. Rothman, M.D.	University of Kentucky
Shawn A. Thomas, M.D.	University of Texas at San Antonio
Charles K. Wagner, M.D.	Louisiana State University at New Orleans

CA-1, 2000

Stanley F. Dover, M.D.	University of North Carolina
Rose S. Geraci, M.D.	University of Wisconsin
W. Christopher Kwasny, M.D.	Medical College of Wisconsin
Michelle C. Vokac, M.D.	Medical College of Virginia

Accepted outside the Match

Initial institution indicates M.D. program. Subsequent program or transfer to be completed on June 30, 1999.

CA-1, 1999

David Chiu, M.D.	University of Maryland. Preliminary surgery internship, University of Maryland.
Lyle D. Hassell, M.D.	Louisiana State University. Residency in Pediatrics, University of Oklahoma at Tulsa.
Eugene J. Kim, M.D.	Wake Forest University School of Medicine. Preliminary surgery internship and one year of surgery residency at the Oregon Health Sciences University, Portland.

CA-2, 1999

Stephen B. Pociask, M.D.	Georgetown University. Transferring from the Department of Anesthesiology, Stanford University.
--------------------------	---

CA-3, 1999

Mary N. Shaw, M.D.	University of Texas Medical Branch at Galveston. Transferring from the Department of Anesthesiology at Galveston.
--------------------	---

From the Chief Resident

continued from page 2

to enter the field of anesthesiology, but also to do my training here. My classmates have fared well in the pursuit of post-residency employment. Of the 11 of us, 6 have obtained private practice positions without difficulty. All had several offers from which to choose; 1 person even had 7 offers. The other 5 will be entering fellowships, and 2 are already formalizing post-fellowship positions.

It is now more important than ever for anesthesiologists to be involved in the political arena. Former Chief Resident Dr. Bob Wilson has participated in several legislative conferences here in our state and in Washington, D.C., regarding the recently proposed HCFA changes. Dr. Mark Cannon, a Critical Care fellow here and former Chief Resident at Ohio State, was the ASA Resident Representative to the AMA. I was the North Carolina Representative to the ASA Resident House of Delegates. Together, I hope that we have conveyed the importance of political involvement to our fellow residents. Now, some of our junior residents have expressed interest in pursuing positions with the ASA Resident Component, and I strongly encourage them to follow through. I am encouraged about the future of anesthesiology, although several hurdles loom ahead. I am also convinced that our residency is well positioned to remain a dominant program into the next millennium.

Nonprofit Organization
 U.S. POSTAGE
 PAID
 Winston-Salem, NC
 Permit No. 154

The Department of Anesthesiology
 Wake Forest University School of Medicine
 Medical Center Boulevard
 Winston-Salem, NC 27157-1009
 WAKE FOREST UNIVERSITY