

EDITOR'S NOTE

It is truly amazing how much newsworthy material we have found in the few months that have passed since the most recent publication of our Newsletter. The editorial group has met repeatedly, and members have provided information that we hope you will all enjoy reading about in this Summer edition.

This issue leads off with stories on our education programs, our research programs having been the focus of the previous issue. As always, recently awarded grants and other faculty news are presented, including information on prominent presentations by faculty members at major national and international meetings.

While research and education news receive prominent space in the newsletter, we are also including important items on personnel issues, graduation and promotion, awards and other career accomplishments, publications and presentations at national meetings, recruitment of faculty and new trainees, and departing members of our large department, where there is always something interesting going on.

This issue reaches you at the beginning of the new academic year and deals mostly with the year just concluded. Information for the new academic year will be the main topic in the Fall issue. In the meantime, all of us in the editorial group wish our readers a most pleasant summer of 2000.

Programs Fulfill Education Mission

As Academic Year 2000 comes to a successful close and 2001 begins in earnest, the Department of Anesthesiology and Critical Care Medicine continues with a strong and vital commitment to educating the next generation of anesthesiologists, intensivists, and physician researchers. Our "Focus" section spotlights the Department's educational programs.

Anesthesiology Residency Program Matches Well

The University of Pittsburgh's Anesthesiology Residency program had a successful year in the National Resident Matching Program, matching nine out of the ten positions offered for the post-graduate year-2 (PGY2) class, who began their CA-1 residency in July 2001. This 90% fill rate exceeds the average match rate for positions both nationally and in Pennsylvania and is also a significant increase over the Department's own match results in recent years. According to Director of Anesthesiology Education Programs **Rita Patel, MD**, among the graduates of the University of Pittsburgh School of Medicine, the number choosing a residency in anesthesiology has remained relatively stable at approximately 7% to 10%. The difference this year, she says, is that more are choosing to fulfill that residency here at the UPMC. Seven of the nine



The Human Simulation Center plays an active role in many of the Department's training programs.

applicants who matched with Pitt's Anesthesiology Residency program are students at the University of Pittsburgh School of Medicine.

Dr. Patel attributes the boost to a strong interest in medical student programs by the Department's faculty members. "The faculty is very involved in the School of Medicine," she noted. "So the students see us and get a chance to interact. Faculty members serve on

committees at the medical school, teach courses — such as problem-based learning, and there are mandatory clerkships in anesthesiology as well."

Dr. Patel also remarked that faculty members have been active in participating at recruitment fairs outside of the University of Pittsburgh. Although the goal is to match 100% of the positions offered, Dr. Patel considers this year's 90% rate "a very positive step."



Paul Rogers, MD

Medical Students Practice Critical Care on Simulator

In 1998, Dr. **Paul Rogers** began working with program directors from other departments to revise the curriculum for third-year students at the University of Pittsburgh School of Medicine. A major change was in response to the new requirement made by the Curriculum Committee that all students take a course in critical care medicine. Educational objectives for this course include the evaluation and initial management of patients with respiratory distress, hypotension, and arrhythmias.

Considering that it is neither prudent nor practical to allow third-year students to manage unstable patients on the medical wards, and since it is impossible to predict when critical events may occur, the Human Simulation Center becomes the venue of choice for this type of instruction. For several years, training in the simulation center has been part of the clerkship in anesthesiology at the School of Medicine. The simulator is a computerized mannequin with a functional mouth and airway that allows bag and mask intubation, and a chest wall that expands and relaxes with intubation and expiration. It produces heart and lung sounds, along with a real-time

display of physiologic variables including electrocardiogram, blood pressure, and pulse oximetry.

Student participation has been enthusiastic, because instruction includes not only a didactic component to ensure understanding of the physiology and pathology but also the additional feature of "hands-on" management. Students must retrieve the crash cart, attach monitors, start IVs, begin oxygen therapy, place the patient on a pulse oximeter, provide bag-and-mask ventilation, and initiate cardioversion for ventricular arrhythmias. The course and the simulation center provide the basis not only for instruction but also for research. Drs. Randy Wax, Michael Pinsky, and Paul Rogers received the 2000 Innovation in Education Award from the Provost for their proposal entitled "Development of a Computer-Based Aid for Evaluation of Student Performance;" and Dr. Rita Patel is conducting a study: "Evaluation of an Assessment Tool of Anesthesia Residents Using the Human Patient Simulator." (See related stories.)



Jackie Morillo-Delerme, MD

Med Student Anesthesia Programs Follow Through

Beginning with the second-year Clinical Procedures course, Department faculty members maintain a connection with the students at the University of Pittsburgh School of Medicine. The Anesthesiology Department provides clinical programs for medical students in three distinct phases. In the Clinical Procedures course, second-year medical students are introduced to a wide variety of basic procedures via didactics and small-group, hands-on workshops. They learn vascular access skills, airway management, BLS, basic and advanced patient monitoring, and other essential procedures and management skills. Led by **Jackie Morillo-Delerme, MD**, Pitt's Clinical Procedures course is among the few preclinical courses offered in an American medical school that is headed by an anesthesiology department.

The clinical portions of our Medical Student programs consist of a mandatory two-week clerkship, as part of the third-year Peri-operative Medicine Clerkship, and a fourth-year elective, Introduction to the Consulting Practice of Anesthesiology. The third-year clerkship is intended primarily to teach procedural, evaluative, and management

skills that will be important to physicians in many areas of practice. Peri-operative medical management is taught via an interactive curriculum that emphasizes problem solving and hands-on patient evaluation and management. These skills are honed in both the operating room and in the Human Simulation Center, where a detailed curriculum allows students to manage a variety of acute-care situations. Students completing the course will be able to evaluate patients preoperatively, manage a wide variety of acute medical situations, treat acute pain, and exhibit an understanding of pharmacology and physiology as it relates to the surgical patient. Students completing the fourth-year elective will expand on this foundation and develop evaluative and management skills as they relate to acting as a consultant in anesthesiology.

The anesthesiology portion of the clerkship continues to be a very highly rated portion of the curriculum. This is due primarily to the outstanding commitment to education provided by faculty members in the Department. One fruit of this commitment is the recent surge in the choice of anesthesiology as a career among Pitt medical students and the large number who chose to continue the education in our residency program. (See story, page 1.)

Vital Signs are Good at MCCTP

Academic Year 1999-2000 was one of change for the Multidisciplinary Critical Care Training Program. The Program, led by **Paul Rogers**, MD, offered new educational programs, welcomed new faculty, introduced computer-based innovations, and made plans for a new Education Wing on the 6th floor of Scaife Hall.

In July 1999, eight fellows joined the MCCTP with diverse specialty and subspecialty backgrounds in pulmonary medicine, infectious disease, internal medicine, and emergency medicine. Their curriculum was modified to provide a "core lecture series" from July through September, to cover essential topics in critical care medicine including resuscitation, cardiopulmonary physiology and pathology; CNS, renal, and infectious disease issues; and important topics in management of the post-operative patient. Other topics germane to critical care medicine, such as ethics, advanced ventilator management strategies, palliative care, organ donation, toxicology, endocrinology, teaching methodologies, and ICU management, were covered in interactive problem-based workshops from October to June. MCCTP Education Coordinator **Jim Rieker**, PhD

implemented a computer-based program providing accessibility to all core lectures through the Web. Fellows review the audio and visual components of the lectures and complete on-line self-assessment exams following each core component.

In addition to the new curriculum format, the Grand Rounds series was reorganized. Speakers such as John Marini of the University of Minnesota, Marcelo Amato of the University of Sao Paulo, Brazil, Xavier Lerve of Joseph-Fourier University in Grenoble, France, and Paul Hebert of the University of Ottawa were guests of the Critical Care Medicine Division. Finally, the 1999 Ake and Inger Grenvik keynote speaker was Arthur Slutsky, MD of the University of Toronto. Dr. Slutsky addressed members of the Department on "Mechanical Ventilation: From Barotrauma to Biotrauma to Bedside."

In addition to the education curriculum, **John Kellum**, MD, director of the research curriculum, coordinated the Research Seminar Series and the Clinical Evidence (Journal Club) Series. Dr. Kellum also established specific research goals for all fellows, including plans for displaying Journal Club abstracts on the Division Web page and a systematic review by all second-year fellows.

Thriving PCCM Program Re-Accredited

The Pediatric Critical Care Medicine Fellowship enjoys continued accreditation by the Accreditation Council for Graduate Medical Education. The ACGME recently notified PCCM Fellowship Director **Ann Thompson**, MD that the renewed accreditation is valid until the pediatric residency program is reviewed again, in approximately five years.

The PCCM Fellowship Program continues to thrive in an atmosphere of achievement and growth in critical care medicine at Children's Hospital. In July 1999, two new fellows joined the Fellowship Program: Hulya Bayir from SUNY Stony Brook and Trung Nguyen from Cornell. Second- and third-year fellows continued their clinical work and high-quality research. They brought significant recognition to the Division through multiple awards in several societies, including the Society of Critical Care Medicine and Women in Neurotrauma.

New fellows will be joining us from the University of Oregon, Hershey Medical Center, and the University of Pittsburgh. Dr. Seidberg will be joining the PCCM faculty at SUNY Stony Brook.

Change is reflected in our own faculty. Dr. Ruppel will become a full-time faculty member; Dr. Scott Watson from the University of Washington will be joining the Division; and Dr. Han will be a Schertz Fellow. Goals for the expanded faculty include broadening our areas of research and enhancing the teaching program.

In August 1999, **Mitchell Fink**, MD joined the Division as chief and became associate director of the MCCTP. Dr. Fink has been instrumental in leading change in the Training Program curriculum. Most notable was his project to standardize care in the ICUs so that CCM fellows learn a systematic, evidence-based approach to important management strategies for critically ill patients. Working with Jim Rieker, he has also developed an MCCTP Web page that currently sustains 100-120 "hits" per week.

As the curriculum has changed and more learning is with self-instruction through computer-

ized technology, the need for additional workstations and educational space has occurred. The Department of Anesthesiology is consolidating its educational resources on the west wing of the 6th floor Scaife. Two new classrooms, a computer room with eight workstations, and library are scheduled for use in 2000.

Finally, the MCCTP has completed a very successful recruitment for 2000-2001 with thirteen internal medicine fellows, three surgery fellows, and one anesthesiologist. Information concerning the MCCTP is available on-line at www.anes.upmc.edu/mcctp.

Awards Conferred at Banquet

The Department honored graduates of its residency and fellowship programs at a Graduation Banquet on June 17, 2000 at the Concordia Club in Oakland. Following Department Chairman Dr. Leonard Firestone's welcome to graduates and guests, outstanding members of the Class of 2000 received awards for their particular achievements, and a number of faculty members received recognition for their contributions to the Department's educational programs.

Dr. Firestone presented certificates to the two Charles A. Schertz Fellows for 1999-2000: **Randy Wax**, MD and **Randall Ruppel**, MD. Dr. **Peter Safar** commended **Wilhelm Behringer**, MD, **Xianren Wu**, MD, and **Rainer Kentner**, MD, all three who completed fellowships at the Safar Center for Resuscitation Research. Multidisciplinary Critical Care Training Program Director Paul Rogers, MD presented "CCM Fellow of the Year" awards to two graduates this year: **Scott Gunn**, MD and **Ramesh Venkataraman**, MD. Director of Anesthesiology Education Programs Dr. **Rita Patel** presented the year's

Mark H. Gilliland, MD Award for Best Clinical Resident to **Andrea Ference**, MD, MPH.

Several faculty members also received acclaim for their dedication and excellence as educators. Chief Anesthesiology Residents **Andrew Murray**, MD and **Paul Davies**, MD presented Dr. **Joseph Quinlan** with the Teacher of the Year Award; and Chief CCM Fellow Randy Wax, MD presented the Ake Grenvik CCM Faculty of the Year Award to **Paul Rogers**, MD. Dr. **Charles Buffington** received a Special Service Award as a mark of the anesthesiology residents' appreciation for his efforts as director of the Residency through 1999. **William McIvor**, MD was the winner of the Peter M. Winter Award for Excellence in Medical Student Teaching, presented by Dr. Patel, who also recognized the educational contributions of a number of additional faculty members: **Charles Boucek**, MD; **Wendy Kang**, MD, JD; **James Krugh**, MD; **David Metro**, MD; **John Schaefer III**, MD; **Erin Sullivan**, MD; and **Helen Westman**, MD. Congratulations and best wishes to all.



SCRR fellows joined Dr. Peter Safar for a photo, from left: Rainer Kentner, MD; Xianren Wu, MD; Dr. Safar, and Wilhelm Behringer, MD.



"Best Clinical Resident" Dr. Andrea Ference poses with Department Chairman Dr. Leonard Firestone, who presented gifts to all graduates.



Chief Resident Andrew Murray, MD presents the Teacher of the Year Award to Dr. Joseph Quinlan.



MCCTP Director Paul Rogers, MD presents "CCM Fellow of the Year" awards to Ramesh Venkataraman, MD (center) and Scott Gunn, MD.



Dr. Charles Buffington receives a Special Service Award from Chief resident Paul Davies, MD.

Class of 2000 Moves On

Graduates of the Anesthesiology Residency or one of the fellowship programs at UPMC have made their marks in the field, whether in academic medicine or private practice, from Pittsburgh to the farthest corner of the globe. At the time that this issue of *Anesthesiology & Critical Care News* went to press, the following members of the Class of 2000, were certain of their plans for the immediate future:

From the Anesthesiology Residency: **Raed Abdullah**, MD, ChB will join the faculty at UPMC; **Andrea J. Ference**, MD, MPH will enter a fellowship program in Pain Management at Virginia Mason Medical Center; and **Shashank Saxena**, MBBS will begin a fellowship in Critical Care Medicine at UPMC. From the Pediatric Anesthesiology Fellowship, **Paul J. Luckiewicz**, MD will join the UPMC faculty at Children's Hospital; **Sophie Saindon**, MD will begin a position in academic medicine at Pavillon Chul du Centre, Hospitalier Universitaire de Quebec; **Semyon Fishkin**, MD recently joined the faculty at Children's Hospital and will begin a 12-month fellowship in Cardiothoracic Anesthesiology at UPMC. Pain Medicine Fellow **Xuhui Li**, MD, MS will

enter private practice at the Community Medical Center in Toms River, NJ.

From the Critical Care Medicine Fellowship Program: **Atul Bhatnagar**, DO will join the medical staff (Pulmonary/Critical Care Medicine) at Latrobe Area Hospital; **Wumi Oguntunmibi**, MD has accepted a position at Oklahoma Transplant Institute (Baptist Medical Center); **Chris Polen**, MD will join the medical staff in Critical Care Medicine at Marietta Memorial Hospital, Marietta, OH; **Karol Richards**, MD has accepted a position at DePaul Medical Center, St. Louis, MO; and **Penny Sappington**, MD will join the CCM faculty here at UPMC. From the Pediatric CCM Fellowship: **Randall Ruppel**, MD will join the CCM faculty at Children's Hospital of Pittsburgh, and **Neal Seidberg**, MD has accepted a position at the University Hospital Medical Center, SUNY at Stony Brook.

Additional graduates include **Yong Yun Han**, MD (Pediatric CCM), **Sarah Hussain**, MD (CCM), **Tamas Juhasz**, MD (Pediatric Anesthesiology), **Denzil Reid**, MD (CCM), **John David Srinivasan**, MD (Cardiothoracic & Liver Transplantation Anesthesiology) and **Randy Wax**, MD (CCM).

Research News

Study will Rate Simulator as Assessment Tool

A team of Department faculty members, led by Director of Anesthesiology Education Programs **Rita Patel**, MD, is participating in a multi-institutional educational research project entitled "Evaluation of an Assessment Tool of Anesthesia Residents Using a Human Simulator." The purpose of the study is to measure the validity, reliability, and practicality of using the human patient simulator to evaluate anesthesia residents' clinical competence.

The availability of human patient simulators as training vehicles has been increasing in recent years, and there have been a number of studies documenting their relevance and value to medical education. Our Department acquired its human simulator in 1995. Since then it has been in use to teach everything from basic techniques to crisis management, and to practice and review teamwork, leadership, and decision-making skills.

This multi-center study will compare simulator assessments with other available methods of measuring residents' clinical competence, including standardized tests and direct observation. Consenting anesthesiology residents will take part in four different scenarios, which will be videotaped and graded by two faculty evaluators using a standardized system. The tape will then be sent to another participating institution for a third score, to help establish the inter-rater reproducibility of the evaluation. The investigators feel that better methods of evaluation will improve residency training and produce better-trained anesthesiologists.

Co-investigators in this study are **Helene Finegold**, MD, director of the obstetric anesthesia rotation of the Residency Program; **Helen Westman**, MD, chair of the Resident Evaluation and Competence Subcommittee for the Residency Program; **William McIvor**, MD, director of the simulator module for the Department's Medical Student Program; **Marie Baldisseri**, MD, director of the ICU at Magee-Womens Hospital, and **John Schaefer**, MD, director of the Human Simulator Center.



Susan Firestone, MD

Research Compliance is a Department Priority

The commission of the Department's compliance officer has broadened beyond the scope of clinical services to include the Department's prominent research component. **Susan Firestone, MD**, who has served as the compliance officer for clinical services since November 1997, will now also oversee and coordinate compliance issues concerning research activities in the Department. This expansion is part of an initiative taken by Department Chairman Leonard Firestone, MD in response to a School of Medicine mandate and in light of the current regulatory climate.

Although compliance issues affect all types of research programs — federal, private foundation, and industry-funded — the federal government, especially, is heightening its scrutiny of research compliance, having directed its Office of Inspector General (OIG) to oversee regulatory compliance at the national level and eliminate health care fraud. Dean Levine has instituted an office for Research Conduct and Compliance at the School of Medicine, and a Research Compliance Committee is being formed. As part of her expanded responsibilities, Dr. Firestone will act as a liaison

between the Department and this Committee, and she will work to formalize our compliance mechanisms and generate the required reports to the School of Medicine.

Research compliance encompasses all aspects of an investigation, from operational and training issues (such as biohazard and radiation safety, animal use and care, etc.) to grant administration and financial accountability. In this country there have been real and recent instances of noncompliance at a number of research institutions, which have wrought significant damage to the medical school and investigators as a result. Dr. S. Firestone explained that if an auditor finds an institution to be noncompliant, the OIG may assign it to "exceptional" status. Institutions so designated may be required to forfeit their autonomy in monitoring and administering their research programs; federal administrators may come in and manage the program for years before restoring institutional autonomy. "Exceptional" institutions may be required to rewrite grants, to pay fines, or even to make full restitution of spent funds. There are non-financial damages as well, including the loss of prestige, a tainted institutional public image, and harm to individual careers. An investigator might

spend years on a particular research project, only to be refused publication in the end because of issues of noncompliance. Thus noncompliance can jeopardize an institution's entire research program. In perspective, the efforts involved in developing and maintaining an effective research compliance program are far less than the costs of remedying noncompliance.

Dr. S. Firestone said that although the Department has an exemplary history of striving to adhere to regulations governing research conduct, there is a difference between merely "being compliant" and having a proactive compliance program. Coordination of efforts to document compliance measures is a key element of such a program.

"Even if a department is completely compliant, amassing the documentation necessary to verify that is a nightmare if one is not prepared," Dr. Firestone said. "Another benefit of having a program in place is in an important fine point: it demonstrates a good-faith effort to learn regulations and to comply with them. Compliance auditors want to see evidence of an effort to be compliant: the department's stated goals, the presence of policies and procedures, evidence of willingness to improve and to work on correcting deficiencies."

Dr. Firestone expects to find few deficiencies. "Compliance is something we have been doing all along," she said. "This initiative will coordinate our efforts and facilitate access to records. No new types of documentation are required."

Dr. Firestone's new responsibilities are a logical extension of her work in the area of clinical compliance, considering that many of the components of the regulatory milieu involve the same agencies, speak the same language of documentation and auditing procedures, and follow similar timetables. There are also some areas of direct overlap between the clinical and research aspects of compliance: the OIG is the auditing authority for both clinical and research compliance; and there are a number of clinical faculty members in the Department who are involved in clinical trials or other research protocols.

Dr. Firestone will be interacting with the grants managers and with all of the major grant-holding investigators to clarify issues. She feels that it is important for investigators not only to understand their own responsibilities, but also to know that their Department has made a priority of ensuring that their work takes place in a compliant, regulation-friendly environment.



David Sinclair, MD

High-Tech Team Studies Post-Anesthesia Fatigue

A collaborative effort between **David Sinclair, MD** and engineers at Carnegie Mellon University seeks to determine the impact of fatigue on driving skills. This study was recently awarded the Clinical Research Starter Grant by the Foundation for Anesthesia Education and Research (FAER). Dr. Sinclair joined our faculty in July 1999 as an assistant professor of anesthesiology and critical care medicine. His current studies focus on the issue of motor vehicle operation following ambulatory anesthesia.

The investigation of driver fatigue will incorporate results of recent studies at the Carnegie Mellon Robotics Institute and the University of Pennsylvania showing that ocular measures of drowsiness can be effective in identifying lapses in attention due to drowsiness. In addition, the proportion of time the eyes are closed during a specified time interval can be measured directly using video processing techniques. Dr. Sinclair will be using a special instrument developed at the Carnegie Mellon Robotics Institute: the PERCLOS monitor, which was designed to measure eye closure as an indication of fatigue. The study also relies on a state-of-the-art driving simulator specifically designed

for human-centered research. Engineers at Carnegie Mellon University, working together with I-Sim Corporation of Salt Lake City, Utah, have designed and developed such an instrument. "TruckSim" can be configured to simulate any of a variety of vehicles, including passenger cars, and is capable of simulating road-surface irregularities such as potholes, rumble strips, uneven road surfaces, curbs, and off-road terrain.

Following completion of his anesthesia residency at the University of Rochester in 1997, Dr. Sinclair began a two-year clinical/research fellowship in ambulatory anesthesia at the University of Toronto under the direction of Dr. Frances Chung, the world-renowned author of the Post Anesthesia Discharge Scoring System. During the first year of his fellowship, Dr. Sinclair's research focused on the predictors of postoperative nausea and vomiting among ambulatory surgical patients. This led to presentations at the University of Toronto Shield's Day, the Society for Ambulatory Anesthesia, and the American Society for Anesthesiology, and a publication in *Anesthesiology*. A grant from the Society for Ambulatory Anesthesia during his second year funded the study entitled "Recovery and Simulated Driving After Ambulatory Anesthesia."

Bioengineering the Future

On July 1, **Alan Rosenbloom, MD** began working with the Bioengineering group at Carnegie Mellon University under Victor Weedn MD, JD and Ken Gabriel, PhD. He will remain on the Abdominal Transplant/CCM Service part-time.

At CMU, Dr. Rosenbloom's work will be split between the Center for Light Microscope Imaging and Biotechnology and the microelectromechanical systems (MEMS) laboratory. MEMS are hybrid devices consisting of silicon chip technology combined with very small mechanical devices, on the order of microns in size. Although this field is in its infancy, there is already an amazing array of pumps, valves, actuators, motion sensors, heaters (for PCR), electrophoretic separators, filters and other mechanical drivers available, as well as simulation tools to design new applications.



Dr. Alan Rosenbloom will be working on the other side of Oakland with bioengineers at CMU.

The combination of mechanical work with data processing produces devices whose novel capabilities are limited only by the imagination. Many of the familiar physical laws do not scale down intuitively, and surprising properties are being observed, such as the virtual absence of turbulence in flowing liquid. This requires new algorithms for mixing. As surface-to-volume ratios increase, heat dissipation capability rises significantly, allowing higher voltages for electrophoretic separations and making possible the analysis of nanoliter volumes.

Use of these devices in clinical applications is a completely unexplored area, but according to Dr. Rosenbloom, the possibilities are intriguing:

"One can envision smart sensors that reside inside tissues and organs. These could measure multiple biological responses, use sophisticated algorithms to detect and diagnose, and transmit information to the outside world. Multiple sensors in different locations could communicate with one another to sense both local and systemic manifestations of disease — perhaps well before the development of clinical signs."

The intensive care unit and operating room are the most highly monitored environments in clinical practice and thus the most ideal settings for the development and testing of such devices.

Current Active Sponsored Projects July 1999 – March 2000

FEDERAL GRANTS				
Faculty Member	Role on the Project	Agency Name / Agency Grant Number	Title	Project Period
D. Angus	Co-PI (Anesthesiology Subaccount) (PI - Roberts, Neurosurgery)	NIH/AHCPR 1-R01HS09694-01	The Optimal Timing of Liver Transplantation	09/30/97 - 09/29/99
D. Angus	Research Module Director (Anesthesiology Subaccount) (PI - Roberts, Neurosurgery)	NIH/AHCPR 5-R25-HS09784-02	Program in Clinical Effectiveness/Evaluation Sciences	05/01/99 - 04/30/01
J. Carcillo	Clinical Assoc. Phys. (PI - Detre, WPIC)	NIH/NCRR 3-M01-RR00056-38S1	General Clinical Research Center - CAP	07/01/97 - 11/30/99
L. Chelluri	PI	NIH 1-R01-AG11979-04	Quality of Life After Mechanical Ventilation in the Aged	08/01/96 - 06/30/01
R. Clark	PI	NIH 1-K08-NS01946-03	The Role of Neuroprotective Genes After Traumatic brain Injury	12/01/96 - 11/30/01
R. Clark	PI	NIH 1-R01-NS38620-01	Caspase-Mediated Neuronal Death After Head Injury	02/01/99 - 01/31/03
L. Firestone	PI	NIH 2-R01-GM52035-06	Anesthetic Mechanisms in GABAA-R Gene-Targeted Mice	09/01/98 - 08/31/02
L. Firestone	Co-Investigator (Anesthesiology Subaccount) (PI - Zubenko, WPIC)	NIH (2-R01-MH43261-11-A2)	Biological Marker for Primary Dementia in the Elderly	12/01/98 - 11/30/02
G. Homanics	PI	NIH (2-R01-AA10422-04A1)	Ethanol Mechanisms in GABAA-R Gene-Targeted Mice	01/01/99 - 12/31/03
G. Homanics	Collaborator (Anesthesiology Subaccount) (PI - Lazo, Pharmacology)	NIH (2-R01-CA43917-12)	Biochemical regulators of Bleomycin-Induced Tumors	03/01/97 - 01/31/02
G. Homanics	Collaborator (Anesthesiology Subaccount) (PI - Pitt, Pharmacology)	NIH (2-R01-HL32154-16)	Metallothionein and Reactive Oxygen and Nitrogen Species	12/01/97 - 11/30/02
G. Homanics	Consultant (Anesthesiology Subaccount) (Outside PI - Harbhajan)	Biomedical Research & Tech Subcontract of NIH Award (2-R44-DK-51960-02)	Murine Model of Maple Syrup Urine Disease	09/25/98 - 11/30/00
P. Kochanek	PI of Project 4 (Anesthesiology Subaccount) (PI - Marion PP)	NIH (2-P50-NS30318-08-A1)	Neutrophils and the Acute Inflammatory Response to Brain Injury — Project 4 of Program Project	04/01/95 - 02/29/00
P. Kochanek	PI of Core C (Anesthesiology Subaccount) (PI - Marion PP)	NIH (2-P50NS30318-08A1)	Animal Surgery Imaging Core —Core C of Program Project	04/01/95 - 02/29/00
P. Kochanek	Consultant (Anesthesiology Subaccount) (PI - Adler, Medicine)	NIH (2-R01NS/OD26610-07A1)	Pathogenesis of Osmotic-Induced Demyelination	08/28/96 - 05/31/00
P. Kochanek	PI	Army DAMD17-97-1-7009	Emergency Interventions After Severe Traumatic Brain Injury in Rats: Effect on Neuropathology and Functional Outcome	12/15/96 - 07/14/00
S. Liachenko	Fellow (Sponsor, Y. Xu)	NIH (1-F32-HL09784-01A2)	Antioxidative Therapy for Cardiac Arrest: An NMR Study	02/01/99 - 01/31/01
A. Miro	Co-PI (Anesthesiology Subaccount) (PI - Hoffman, Nursing)	NIH (2R01NR01086-11A1)	Transtacheal Assist: Effect on Ventilatory Efficiency	07/15/94 - 06/30/00
R. Orr	PI	HRSA/MCHB (6-MCH-424003-02)	Develop a Pediatric Severity of Illness Model for Transport System Evaluation and Triage	09/01/97 - 08/31/00
M. Pinsky	PI	NIH (1-T32-HL07820-04)	Experimental Therapeutics in Critical Illness — Training Grant	09/06/96 - 08/31/01
A. Rolondi	PI	NIH (1-R01-HD36075-02)	Supporting Traumatic Brain Injury Caregivers	09/15/97 - 08/31/00
T. Rudy	PI (through WPIC) (Anesthesiology Subaccount)	NIH (1-P01-HD33989-03)	Measuring Outcome in Pain Treatment Project II	08/01/96 - 07/31/01
T. Rudy	PI (through WPIC) (Anesthesiology Subaccount)	NIH (1-P01-HD33989-03)	Measuring Outcome in Pain Treatment Program Core	08/01/96 - 07/31/01
T. Rudy	PI (through WPIC) (Anesthesiology Subaccount)	NIH (1-P01-HD33989-03)	Measuring Outcome in Pain Treatment Project III	08/01/96 - 07/31/01
T. Rudy	PI	NIDR (2-R01-DE07514-13)	Classification of TMDs: Validity and Utility of RDC Axis I	09/30/95 - 07/31/00
P. Safar	PI	U.S. Navy (N00014-99-1-0765)	Novel resuscitation from Lethal Hemorrhage Increasing survival of Combat Casualties; Developments in outcome models of uncontrolled hemorrhagic shock in rats and suspended animation in dogs	04/16/99 - 09/30/00
P. Tang	PI	NIH (1-R01-GM56257-0A1)	Anesthetic Sites in Transmembrane Peptides by NMR	02/01/98 - 01/31/00
Y. Xu	PI	NIH (1-R01-NS36124-01-A2)	Cerebral Protection and Recovery After Circulatory Arrest	05/01/98 - 04/30/03
Y. Xu	PI	NIH (1-R29-GM49202-05)	NMR Studies of Mechanisms of General Anesthesia	01/01/95 - 12/31/99

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J. Carcillo	Clinical Assoc. Phys. (PI - Detre, WPIC)	NIH/NCRR 3-M01-RR00056-38S1	General Clinical Research Center - CAP	07/01/97 - 11/30/99
L. Chelluri	PI	NIH 1-R01-AG11979-04	Quality of Life After Mechanical Ventilation in the Aged	08/01/96 - 06/30/01
R. Clark	PI	NIH 1-K08-NS01946-03	The Role of Neuroprotective Genes After Traumatic brain Injury	12/01/96 - 11/30/01
R. Clark	PI	NIH 1-R01-NS38620-01	Caspase-Mediated Neuronal Death After Head Injury	02/01/99 - 01/31/03
L. Firestone	PI	NIH 2-R01-GM52035-06	Anesthetic Mechanisms in GABAA-R Gene-Targeted Mice	09/01/98 - 08/31/02
L. Firestone	Co-Investigator (Anesthesiology Subaccount) (PI - Zubenko, WPIC)	NIH (2-R01-MH43261-11-A2)	Biological Marker for Primary Dementia in the Elderly	12/01/98 - 11/30/02
G. Homanics	PI	NIH (2-R01-AA10422-04A1)	Ethanol Mechanisms in GABAA-R Gene-Targeted Mice	01/01/99 - 12/31/03
G. Homanics	Collaborator (Anesthesiology Subaccount) (PI - Lazo, Pharmacology)	NIH (2-R01-CA43917-12)	Biochemical regulators of Bleomycin-Induced Tumors	03/01/97 - 01/31/02
G. Homanics	Collaborator (Anesthesiology Subaccount) (PI - Pitt, Pharmacology)	NIH (2-R01-HL32154-16)	Metallothionein and Reactive Oxygen and Nitrogen Species	12/01/97 - 11/30/02
G. Homanics	Consultant (Anesthesiology Subaccount) (Outside PI - Harbhajan)	Biomedical Research & Tech Subcontract of NIH Award (2-R44-DK-51960-02)	Murine Model of Maple Syrup Urine Disease	09/25/98 - 11/30/00
P. Kochanek	PI of Project 4 (Anesthesiology Subaccount) (PI - Marion PP)	NIH (2-P50-NS30318-08-A1)	Neutrophils and the Acute Inflammatory Response to Brain Injury — Project 4 of Program Project	04/01/95 - 02/29/00
P. Kochanek	PI of Core C (Anesthesiology Subaccount) (PI - Marion PP)	NIH (2-P50NS30318-08A1)	Animal Surgery Imaging Core —Core C of Program Project	04/01/95 - 02/29/00
P. Kochanek	Consultant (Anesthesiology Subaccount) (PI - Adler, Medicine)	NIH (2-R01NS/OD26610-07A1)	Pathogenesis of Osmotic-Induced Demyelination	08/28/96 - 05/31/00
P. Kochanek	PI	Army DAMD17-97-1-7009	Emergency Interventions After Severe Traumatic Brain Injury in Rats: Effect on Neuropathology and Functional Outcome	12/15/96 - 07/14/00
S. Liachenko	Fellow (Sponsor, Y. Xu)	NIH (1-F32-HL09784-01A2)	Antioxidative Therapy for Cardiac Arrest: An NMR Study	02/01/99 - 01/31/01
A. Miro	Co-PI (Anesthesiology Subaccount) (PI - Hoffman, Nursing)	NIH (2R01NR01086-11A1)	Transtacheal Assist: Effect on Ventilatory Efficiency	07/15/94 - 06/30/00
R. Orr	PI	HRSA/MCHB (6-MCH-424003-02)	Develop a Pediatric Severity of Illness Model for Transport System Evaluation and Triage	09/01/97 - 08/31/00
M. Pinsky	PI	NIH (1-T32-HL07820-04)	Experimental Therapeutics in Critical Illness — Training Grant	09/06/96 - 08/31/01
A. Rolondi	PI	NIH (1-R01-HD36075-02)	Supporting Traumatic Brain Injury Caregivers	09/15/97 - 08/31/00
T. Rudy	PI (through WPIC) (Anesthesiology Subaccount)	NIH (1-P01-HD33989-03)	Measuring Outcome in Pain Treatment Project II	08/01/96 - 07/31/01
T. Rudy	PI (through WPIC) (Anesthesiology Subaccount)	NIH (1-P01-HD33989-03)	Measuring Outcome in Pain Treatment Program Core	08/01/96 - 07/31/01
T. Rudy	PI (through WPIC) (Anesthesiology Subaccount)	NIH (1-P01-HD33989-03)	Measuring Outcome in Pain Treatment Project III	08/01/96 - 07/31/01
T. Rudy	PI	NIDR (2-R01-DE07514-13)	Classification of TMDs: Validity and Utility of RDC Axis I	09/30/95 - 07/31/00
P. Safar	PI	U.S. Navy (N00014-99-1-0765)	Novel resuscitation from Lethal Hemorrhage Increasing survival of Combat Casualties; Developments in outcome models of uncontrolled hemorrhagic shock in rats and suspended animation in dogs	04/16/99 - 09/30/00
P. Tang	PI	NIH (1-R01-GM56257-0A1)	Anesthetic Sites in Transmembrane Peptides by NMR	02/01/98 - 01/31/00
Y. Xu	PI	NIH (1-R01-NS36124-01-A2)	Cerebral Protection and Recovery After Circulatory Arrest	05/01/98 - 04/30/03
Y. Xu	PI	NIH (1-R29-GM49202-05)	NMR Studies of Mechanisms of General Anesthesia	01/01/95 - 12/31/99

Current Active Sponsored Projects July 1999 – March 2000

FOUNDATION GRANTS				
Faculty Member	Role on the Project	Agency Name	Title	Project Period
C. Robertson	PI	Laerdal	Augmenting Adenosine to Improve Outcome After Severe Head Injury	01/01/98 - 12/31/99
A. Rosenbloom	PI	Laerdal	Immunosuppression and Inflammation in Sepsis: The Course and Patient Dependency	07/01/97 - 10/31/99
T. Rudy	PI of Project (Anesthesiology Subaccount) (PI - Dellito, Physical Therapy)	Foundation for Physical Therapy	Psychometric Innovations in Outcome Measurement	03/01/97 - 02/28/00
T. Rudy	PI of Project (Anesthesiology Subaccount) (PI - Dellito, Physical Therapy)	Foundation for Physical Therapy	Data Analysis/Management Core for Low Back Pain CRC	03/01/97 - 02/28/00
P. Safar	PI	Laerdal	Oxygen and Hypothermia for Uncontrolled Hemorrhagic Shock in Rats	01/01/96 - 12/31/96 (open-ended extension)
P. Safar	PI	Laerdal	Textbook on Resuscitation in the 20th Century	01/01/97 - 12/31/02
C. Sirio	PI	Jewish Healthcare Foundation	Evaluating Outcomes, Treatment Patterns, and Cost of care for Patients with AMI using Data	10/01/98 - 02/29/00
J. Snyder	PI	Laerdal	Brain Sodium Concentration to Grade severity of Brain Injury in Monkeys and Humans	11/12/98 - 12/31/00

New Sponsored Projects July 1999 – March 2000

FEDERAL GRANTS				
Faculty Member	Role on the Project	Agency Name / Agency Grant Number	Title	Project Period
R. Delude	PI	NIH (7-R01-GM58484-02)	Molecular Mechanisms of Gut Barrier Dysfunction	07/01/99 - 12/31/02
M. Fink	PI	Synzyme Technologies, Inc. Subcontract of NIH Award(1-R43-GM59543-01)	PND (polynitroxyl-dextran): Gut Protection Following Shock	12/15/99 - 05/31/00
R. Glick	Co-PI (Anesthesiology Subaccount) (MAC Award) (PI - Weiner, Rheumatology)	NIH (5-P60-AR44811-03)	Chronic Low Back Pain in the 65+: Is P.E.N.S. Effective?	10/01/99 - 08/31/00
P. Kochanek	PI	NIH (1-R01-NS38087-01A1)	Adenosine and Traumatic Brain Injury	08/02/99 - 07/31/03
R. Orr	PI	HRSA/MCHB (1-H34-MC00040-01)	Outcome Assessment in Children Requiring Interfacility Transport	08/01/99 - 02/28/01
T. Rudy	Senior Investigator (Anesthesiology Subaccount) (PI - Matthews, WPIC)	NIH (1-P50-HL5112-01)	Understanding Shared Psychobiological Pathways - Project 2	09/30/99 - 08/31/04

FOUNDATION GRANTS				
Faculty Member	Role on the Project	Agency Name	Title	Project Period
B. Brandom	PI	Malignant Hyperthermia Association of the U.S.	Maintenance of MHAUS Registry at the University of Pittsburgh	02/01/00 - 01/31/05
J. Kellum	PI	Laerdal	Mechanisms of Immunomodulation by Hemofiltration in Experimental Sepsis	07/01/99 - 06/30/00
M. Pinsky	PI	Laerdal	Immunosuppression and Inflammation in Sepsis: From Bench to Bedside and Beyond	03/01/00 - 02/28/01
Statler	PI	Laerdal	MRI Assessment of Blood Flow and Calcium Accumulation After Traumatic Brain Injury	01/01/00 - 12/31/00



Yong (Kato) Han, MD
Kimberly Statler, MD

Awards, Achievements

Yong (Kato) Han, MD has been named Charles A. Schertz Research Fellow for 2000-2001. Dr. Han is researching "Mitochondrial Mechanisms of Excitotoxic Neuronal Injury" with mentor Ian J. Reynolds, PhD of the School of Medicine's Department of Pharmacology. Dr. Han is a fellow in Pediatric Critical Care Medicine at Children's Hospital.

Randy Wax, MD received an award for the best abstract presentation at the 20th International Symposium on Intensive Care and Emergency Medicine held in Brussels, Belgium on March 21-24, 2000 for his abstract entitled "An Alternative and More Sensitive Approach to Detecting Differences in Outcome in Sepsis Trials." Faculty supervisors were **Derek Angus**, MD and **Michael Pinsky**, MD.

The Women in Neurotrauma (WINTR) society named **Kimberly Statler**, MD Junior Investigator of the Year in Neurotrauma for her research on *Fentanyl versus isoflurane anesthesia: effect on outcome after traumatic brain injury in rats*. Dr. Statler is a research fellow at the Safar Center for Resuscitation Research.

Wilhelm Behringer, MD received the Annual Meeting Presentation Award for Basic Science at the Society for Academic Emergency Medicine meeting in Boston, May 20-23, for his oral abstract presentation on "Outcome model in dogs of exsanguination cardiac arrest (CA) of 20 min with hypothermic aortic arch flush for cerebral preservation."

Board Certified

The following physicians were board certified at the spring session of the American Board of Anesthesiology oral board exam: **Ajay Chalasani**, MD (attending, UPMC Presbyterian), **Harish Ramakrishna**, MD (attending, UPMC Presbyterian/VAMC), **Sara Shekar**, MD (attending, UPMC Presbyterian), and **John Srinivasan**, MD (fellow, Cardiac Anesthesia and Liver Anesthesia, UPMC Presbyterian). **Nash Rizk**, MD (Division of Pain Medicine) attained diplomate status of the American Board of Anesthesiology. **Scott Gunn**, MD (Research Fellow, CCM) achieved certification by the American Board of Emergency Medicine.

Dr. Wax Receives Laerdal Stipend



Dr. Randy Wax (left) works with medical students Tina Woodring and Tsz-Ming Chow training on the Human Simulator.

The Laerdal Foundation for Acute Medicine has awarded the 2000 Laerdal Research Stipend to **Randy Wax**, MD to support his work on the study: "Feedback Improvement Strategy Hypothesis (FISH): Does the addition of immediate, detailed, and enriched feedback following simulated resuscitation scenarios improve eventual performance during resuscitation by medical students?" This project will rely on data from third-year medical students in the School of Medicine's Acute Care Medicine course to test the hypothesis that the improved feedback strategy developed for simulator training (see related story on Page 11) will indeed improve resuscitation performance. Dr. Wax plans to use a palmtop computer system to gather information on student performance in resuscitation scenarios, comparing students who receive the enriched, multimedia feedback to those receiving "traditional" verbal debriefing. Dr. Wax, the 1999-2000 chief CCM fellow at UPMC, will also be continuing his research training at the Institute of Medical Sciences, University of Toronto.



*Mitchell P. Fink, MD
Helen Finegold, MD*

Dr. Fink's Research Funded

Mitchell P. Fink, MD, chief of the Division of Critical Care Medicine, has been awarded major grants from the National Institutes of Health for two research projects for which he is principal investigator: an RO1 grant entitled "Intestinal Perfusion and Permeability in Sepsis," (GM 37631; 7/1/00 through 6/30/04) and a P50 grant, "Project IV: Gut Barrier Dysfunction in Hemorrhagic Shock," (GM53789; 7/1/00 through 6/30/02).

Departmental Seed Grant Awarded

The Department's Scientific Affairs Committee has approved a special Seed Grant to **Helene Finegold, MD** to support her investigation of "Comparison of circulating oxytocin levels with intrathecal bupivacaine — fentanyl and epidural bupivacaine during labor analgesia. A pilot study."

CCM Faculty Members Receive "Innovations in Education" Award

Drs. Paul Rogers, Randy Wax, and Michael Pinsky have received an "Innovations in Education" award from the Office of the Provost of the University of Pittsburgh for their proposal, "Development of a

Computer-based Aid for Evaluation of Student Performance During Teaching of Acute Care Medicine Skills Using a Human Simulator. The project is designed to improve training in critical care medicine at the Department of Anesthesiology's Human Simulation Center, located at UPMC Montefiore.

Simulation technology provides a mechanism for presenting clinical scenarios on demand and in a reproducible manner. Using a life-like multimedia interactive experience, contextual cues for learning are optimized. In addition, the setting provides an opportunity to participate in rare-event critical scenarios to larger numbers of students than would be feasible otherwise.

This proposal will allow electronic integration of on-line student performance evaluations with computerized records of simulated physiological data. Digital video footage of critical moments of student performance will also be incorporated. The end result will be a detailed evaluation provided as immediate feedback during student debriefing after each simulated resuscitation scenario. Enhancing the nature and timing of feedback is expected to increase the likelihood of appropriate performance when caring for actual patients in life-threatening situations.

Brain Injury Research Funded

Drs. Robert Clark and Patrick Kochanek

received five years of funding from the National Institute of Neurological Disease and Stroke for two projects,



Dr. Clark



Dr. Kochanek

entitled "PARS activation after traumatic brain injury" and "Molecular mechanisms in traumatic brain injury: Bench to bedside." These proposals represent two of the five projects within the successfully renewed program project grant (Donald Marion, PI) entitled "University of Pittsburgh Brain Trauma Research Center," highlighting a longstanding fruitful collaboration between our Department and the Department of Neurological Surgery. Dr. Kochanek is also the principal investigator of a core facility within the program project. Funding in that program project for Drs. Clark and Kochanek totals more than in \$279,490 direct costs.

Navy Renews Safar Center Grant

Safar Center researchers Peter Safar, MD and Samuel A. Tisherman, MD have received renewal of their large grant from the US Navy's Office of Naval Research



Dr. Safar



Dr. Tisherman

for their study on "Uncontrolled Hemorrhagic Shock (UHS) in Rats and Suspended Animation (SA) in Dogs: Development of Novel Approaches for Exsanguinating Combat Casualties." The project has two main goals: 1) to develop optimized fluid and drug therapies for trauma victims to prolong the "golden hour" of hemorrhagic shock that can allow survival. 2) to develop a method for management of exsanguinating trauma victims using "suspended animation", i.e., preservation of the entire organism during pulselessness for transport and resuscitative surgery. The US Navy has supported this research since 1996.



*Yan Xu, PhD
Nicholas Bircher, MD
Ann Thompson, MD
Wendy Kang, MD*

Care Society Congress in Mainz, Germany, he delivered the keynote lecture on "*Therapeutic Hypothermia in Traumatology*." At the University of Texas Health Sciences Center at San Antonio on May 18, Dr. Safar presented the Holmstrom Memorial Lecture, "*Therapeutic Hypothermia: History, Physiology, and Novel Applications*." Then on May 24 at Duke University, he gave the Harmel Lecture on "*Traumatologic Resuscitation in the 20th Century*."

At an Office of Naval Research Workshop in Snowbird, Utah, on June 3, Drs. **Peter Safar**, **Samuel Tisherman**, **Rainer Kentner**, and **Xianren Wu** presented 15 hemorrhage-related animal models developed since the 1960s by researchers at the Safar Center for Resuscitation Research.

The nominations of **Yan Xu**, PhD and **Michael Pinsky**, MD to active membership in the Association of University Anesthesiologists were unanimously approved by the AUA Council and members.

Drs. **Nicholas G. Bircher** and **Michael R. Pinsky** have been elected to represent the School of Medicine in the University of Pittsburgh's Faculty Assembly for a two-year and a three-year term, respectively, beginning July 1, 2000.

Ann Thompson, MD has been accepted into the 2000-2001 Fellowship Class of the Hedwig van Ameringen Executive Leadership in Academic Medicine (ELAM) Program for Women, sponsored by MCP Hahnemann University and its Institute for Women's Health. Fellows in this program, which begins in September, will work with other leaders in academic medicine and dentistry to discover ways to apply innovations in leadership that will help define and direct the future of academic medical centers.

Wendy Kang, MD, JD, left her position as director of the Fellowship in Pain Medicine in June to embark on medical missionary work in Africa. Dr. Kang joined the faculty in September 1997 as an associate professor of anesthesiology and critical care medicine and obtained certification in the subspecialty of pain management the following year. She plans to carry out short-term medical missionary work, including anesthesia, overseas. Her first mission, beginning June 20, is in Kenya, East Africa. Pain Medicine Clinical Director **Doris Cope**, MD has assumed directorship of the Pain Medicine Fellowship program.

Division of CCM Chief **Mitchell P. Fink**, MD has been appointed as the Watson Professor of Surgery at the University of Pittsburgh School of Medicine, succeeding Dr. Timothy Billiar of the Department of Surgery.

Promotions

Marie Baldisseri, MD promoted to Associate Professor of Anesthesiology and Critical Care Medicine.

James Greenberg, MD promoted to Associate Professor of Anesthesiology and Pediatrics.

John Kellum, MD promoted to Associate Professor of Anesthesiology and Critical Care Medicine.

Victor Scott, MD promoted to Associate Professor of Anesthesiology and Critical Care Medicine.

Carl Sirio, MD promoted to Associate Professor of Anesthesiology and Critical Care Medicine.

New Faculty Members

Welcome to the following physicians, who recently joined the faculty of the Department of Anesthesiology/CCM:

Dr. **Raed Abdullab**, UPMC Presbyterian

Dr. **Robert Boretsky**, UPMC Shadyside

Dr. **Brent Cain**, UPMC Shadyside

Dr. **Ethelyn D. Daniel**, UPMC South Side

Dr. **Semyon Fishkin**, Children's Hospital

Dr. **Theresa Gelzinis**, UPMC Presbyterian

Dr. **Rama M. Joshi**, UPMC Shadyside

Dr. **George J. Ranier**, UPMC Presbyterian

Dr. **Randall Ruppel**, Children's Hospital

Dr. **Andrzej Zielke**, UPMC Presbyterian



John Kellum, MD

American Thoracic Society

The Division of Critical Care Medicine was well represented at the 96th International Conference of the American Thoracic Society in Toronto, Ontario last May 5-10. **Michael R. Pinsky**, MD and Deborah Cook, MD co-chaired a pre-meeting full-day postgraduate course entitled "Applied Critical Care: Management, Training and Research." This course, which is similar to ones developed by Dr. Pinsky for the SCCM meeting, focused on practical aspects of the physician's administrative role within a complex health care system, with special emphasis on excellence in the academic environment. During the annual meeting proper, Dr. **John Kellum**, Dr. **Mitchell Fink**, and Dr. Pinsky all gave invited lectures in mini-symposia on organ-system interactions in critical illness. These invited lectures, plus numerous abstract presentations listed below, insured that our Department maintained a leadership role in academic critical care medicine. Our faculty members presented the following abstracts:

Age and hospital costs in patients receiving prolonged mechanical ventilation.

Chelluri L., Mendelsohn AB, Sirio C, Belle S, Donahoe M, Pinsky MR, Reeder S, Rotondi A, Schulz R, Angus D, Wisniewski S.

Impact of insurance status on reimbursement for patients requiring prolonged mechanical ventilation (MV). Chelluri L., Im K, Sirio C, Donahoe M, Belle S, Pinsky MR, Reeder S, Rotondi A, Schulz R, Angus D, Mendelsohn AB, Wisniewski S.

Gender differences in the use of mechanical ventilation. Clermont G, Angus DC, Linde-Zwirble WT, Pinsky MR.

Practice variations and utilization changes in pulmonary artery catheterization (PAC) Sakallaris B and Alzola C, (McLean, VA); Sirio C (Pittsburgh, PA) Fleegler B (Sarasota, FL).

Continuous bi-directional tracheal gas insufflation (BI-TGI) eliminates TGI induced auto-PEEP and maintains CO₂ elimination efficiency. Delgado E, Hete B, Miro AM, Hoffman LA, Tasota EJ, Pinsky MR.

Indications for complications from and outcome of mechanical ventilation: effect of age. Esteban A, Anzueto A, Alia I, Ely W, Frutos F, Brochard L, Stewart T, Benito S, Rodrigo C, Gonzalez M, Montanez A, Raad J, Angus D, Cide D, Tobin MJ.

Predicting hospital mortality for critically ill patients upon admission to the ICU. Updating APACHE III. Alzola C (McLean

Chairman Keynotes International Workshop

Powered by the success of the first Workshop, in December 1994, the 2nd International Workshop on Anesthetic Mechanisms was held in Takamatsu, Japan on December 8-10, 1999, organized again by Kenji Ogli, MD and colleagues from Kagawa Medical University. Among the few keynote speakers invited to both Workshops was our Department Chairman Dr. **Leonard Firestone**, whose lecture, "In Vivo Imaging of Analgesia and Anesthesia," focused on recent advances from our Department using functional imaging techniques for noninvasive localization of drug action in the living human brain. (This topic is Dr. Firestone's subject matter specialty for the National Institute of General Medical Sciences.)



Leonard Firestone, MD

The International Workshop on Anesthetic Mechanisms has established itself as a prestigious forum for researchers in the field, to present recent findings and participate in sessions where internationally recognized experts present highly focused synopses of the latest developments in their areas of expertise. Separate sessions were dedicated to membranes, receptors, genetics, and macromolecules, as well as physicochemical properties and neurophysiology. Dr. Firestone also co-chaired a scientific session with Professor Takashi Mashimo, chairman of Anesthesiology and Critical Care Medicine at Osaka University Medical School.

VA), Watts C (Ann Arbor MI), Sirio C (Pittsburgh), Honeycutt C, Shaffer V (McLean, VA).

Identifying potentially ineffective care in a community hospital. Fleegler B, Jackson D, Martin H, Turnbull J (Sarasota,

FL), Honeycutt C (McClean, VA), Sirio C (Pittsburgh, PA).

Re-estimating ICU length of stay (LOS) for patients with prolonged ICU stays on ICU day 5: predicting the tail. Watts C, Sirio C, Zhang B, Alzola C, Honeycutt C, Shaffer V.



Department Represented at AUA Meeting

The 47th Annual Meeting of the Association of University Anesthesiologists (AUA) was held in Salt Lake City, Utah this past May. For several years running, our Department has been represented at the prestigious oral presentation scientific sessions — this year a paper of **Frank Gyulai**, MD et al. was featured, entitled, "Isoflurane Potentiates GABA_A Receptor-Mediated Metabolic Depression *In Vivo*: A Quantitative Positron Emission Tomography (PET) Study." Other Department faculty members, including **Joseph Quinlan**, MD, **Jiro Kurata**, MD, PhD, and **James Snyder**, MD, were successful in the competition for scientific poster presentations.

The Educational Advisory Board Program, chaired by **Doris Cope**, MD (professor and clinical director of our Department's Pain Medicine Program), discussed the effects on anesthesia departments of hospital mergers/acquisitions and realignments ("The Good, The Bad, The Ugly"), as well as strategies to face new business imperatives in the delivery of clinical care and education of medical students, residents, and fellows. Following a recently established AUA "tradition," Gerald Becker, MD, scientific review administrator for the Surgery, Anesthesiology, and

Trauma Study Section of the National Institute of General Medical Sciences, gave an overview of recent developments in the review process within the committee that judges most of the NIH funding applications submitted by anesthesiologists and critical care specialists.

The AUA President's Panel (organized by Jerry Reves, MD, professor and chairman at Duke) also focused on the role of anesthesiology in academic medical centers, presenting three points of view: that of the dean, the hospital/health system, and the department chairman. The first of two Scientific Advisory Board plenary lectures was given by Stephen Riederer, PhD, director of the Magnetic Resonance Laboratory, Mayo Clinic, Rochester, Minnesota, on recent developments in fast scan MRI techniques, clearly indicating an emerging interest in exploring novel imaging techniques in anesthesia research. The second plenary talk, by Charles Vacanti, MD, director of the Center for Tissue Engineering at the University of Massachusetts, Worcester, was devoted to tissue engineering and its impact on perioperative medicine. At the end of each day, receptions were held to familiarize the AUA membership with the culture of Salt Lake City, contributing to the overall success of the conference.

More Meetings

During recent months the faculty of Anesthesiology and Critical Care Medicine has been active in offering presentations at national and international meetings.

Society for Obstetric Anesthesia and Perinatology

Department faculty members made the following abstract presentations at the SOAP 32nd Annual meeting in Montreal May 31-June 4:

Is 0.1% ropivacaine equipotent to 0.06% bupivacaine? A double-blinded, randomized study. Mandell G, Makishima S, Ramanathan S.

Labor outcome with ropivacaine and bupivacaine used for epidural anesthesia. Finegold H, Ramanathan S.

Histopathology proven chorioamnionitis and neonatal outcome. Vallejo M, Kaul B, Ramanathan S.

Accreditation Council for Graduate Medical Education

Rita Patel, MD had two abstracts accepted for poster presentations at the ACGME's *Mastering the Accreditation Process* workshop last March in Chicago. The abstracts were

entitled *A Departmental Web-Based Evaluation System* and *Learning the Skills Necessary for Effective Teaching*, which summarized the Educational Retreat hosted by the Department's Educational Advisory Council last October.

American Society of Regional Anesthesia and Pain Medicine

Manny Vallejo, MD presented an abstract entitled *Histological positive chorioamnionitis, maternal fever and labor outcome* at the ASRA meeting in Orlando, FL in March 2000.

American Academy of Neurology

The following poster presentation was made at the 52nd Annual Meeting of the American Academy of Neurology in San Diego, CA April 29 through May 6:

Guidance by tissue sodium concentration of infarct resection in massive stroke. Snyder JV, Gebel J, Kasam A, Hamilton R, Watkins S, Yonas H, Chelluri L, Thulborn K.



*Michael Pinsky, MD
Michael Donahoe, MD
Luke Chelluri, MD*

CCM Partners with LifeCare Hospitals in Long-Term Acute Care Facility

The Department of Anesthesiology and Critical Care Medicine, along with the Department of Medicine, has entered into a partnership with LifeCare Hospitals of Pittsburgh to launch a long-term acute-care facility (LTAC). In January 2000, **Michael Pinsky, MD**, of the Division of Critical Care Medicine, and **Michael Donahoe, MD** (Division of Pulmonary Medicine) became co-directors of the LifeCare LTAC.

"Acute medical care is expensive," Dr. Pinsky says. "All Medicare and many third-party payers reimburse acute-care institutions at a fixed level, based on specific diagnoses. Health care institutions incur a large financial liability when the distribution of patient-care time widens such that many patients remain in intensive care longer than the average length of stay. Many patients require long-term, acute treatment at a level of care not possible in a skilled nursing facility."

To address this concern, the US government developed a parallel track of reimbursement options that allow compensation of health care institutions for the care of

these "therapeutic outliers" in a manner that is both beneficial to patients and easily audited by third-party payers. The LTAC is one such option. The concept was developed primarily for the non-academic acute-care environment. However, a recent informal review of 15 academic medical centers found utilization of this vehicle in all but one (and that particular medical center already had an established long-term ventilator unit, which can often function like an LTAC). While the LTAC services may be housed in the same building with other acute-care services, regulations dictate that they be physically distinct from one another.

With the support of Dr. **Luke Chelluri**, also of Critical Care Medicine, as the third member of the group, Drs. Pinsky and Donahoe developed and have directed the LifeCare LTAC service since January 20, 2000. The facility, located on Penn Avenue in Wilkensburg, approximately four miles from the UPMC Oakland campus, was designed to care for long-term, acutely ill patients who would not be better served by aggressive and expensive acute care at UPMC. Average daily census for the first three months of this joint venture has been approximately 10 patients, with slightly more than two patients per week

being transferred to the facility from the ICUs of UPMC hospitals.

The LTAC venture has allowed implementation of ventilator management protocols, including lung recruitment and ventilator weaning protocols. Currently, the plan is to introduce other protocol-driven treatment strategies and assess their impact on resource utilization and length of stay. As this service expands, other UPMC faculty members will join this group and strengthen the bridge between UPMC and LifeCare.

"We have already developed a program for first-year CCM fellows on the LTAC service beginning in July 2000," Dr. Pinsky reports. "The rotation will focus on long-term acute-care health issues, placement, and family conferences. This new component of the MCCTP will bring our program's social aspects in line with anticipated requirements of the ACGME and Residency Review Committees."

Dr. Carcillo Recognized

Dr. Joseph Carcillo's study, entitled "Cytochrome P450 2D6 mRNA expression in peripheral blood mononuclear cells correlates to whole body

Cytochrome P450 drug metabolism," was cited as one of the five outstanding papers at the 2000 Annual Meeting of General Clinical Research Center (GCRC) Directors held on March 12th in Washington, DC. Dr. Carcillo is a clinical associate physician (CAP) awardee from NIH, and his work on drug metabolism is carried out in collaboration with Drs. Robert Branch and Marjorie Romkes at the UPMC Center for Clinical Pharmacology. The award recognizes the top clinical investigation carried out within GCRCs in the United States.



Fall Lectures Scheduled

The Sixth Annual Ake and Inger Grenvik Critical Care Lecture will be held on Tuesday, September 26, 2000 at 5 p.m. in Scaife Hall Lecture Room 1. Guest Speaker Richard Hotchkiss, MD of the Washington University School of Medicine in St. Louis, MO, will discuss "The Role of Programmed Cell Death in Sepsis and Multiple Organ Failure." Following the lecture, there will be a reception on the 4th floor of Scaife Hall.

The 21st Annual Peter and Eva Safar Lecture on Science and the Humanities will take place on Thursday, October 26, 2000 in Scaife Hall Auditorium 5-6. The guest speaker will be World Federalist Association President John Anderson. The lecture will be presented at 4 p.m. A reception will follow.

Dr. Safar Honored

Distinguished Professor of Resuscitation Medicine Peter Safar, MD, who helped to pioneer the fields of critical care and emergency medicine, received honorary membership in the University of Pittsburgh Chapter of Phi Beta Kappa on April 29, 2000. At the initiation ceremony, Dr. Katherine Detre made the formal recommendation to the Chapter to confer the honor in recognition of Dr. Safar's "contributions to the science and practice of medicine,...his concern with the welfare of mankind, and...his emphasis on the importance of humanistic education."

Conferences

Pittsburgh Hosts International Physiology Symposium

The 5th Annual International Symposium on Applied Physiology of the Peripheral Circulation, Cerebral Blood Flow: Mechanisms of Ischemia, Diagnosis and Therapy, was held June 9-11, 2000 at the Pittsburgh Hilton. **Michael R. Pinsky**, MD chaired the Local Scientific Committee, along with University of Pittsburgh Stroke Institute



Dr. Michael Pinsky addresses the 5th Annual International Symposium on Applied Physiology of the Peripheral Circulation.

faculty members Lawrence Wechsler, MD, Howard Yonas, MD, Steven Goldstein, MD, Charles Jungreis, MD, and Edwin Nemoto, PhD. The program presented a broad scientific overview of a highly focused topic: cerebral circulation and issues of ischemic stroke and traumatic brain injury. The symposium was the fifth in a series supported jointly by the American Physiological Society and the European Society of Intensive Care Medicine. Faculty included internationally renowned scientists as well as clinicians who are active in this field. The program was divided into four sessions. Day-one topics focused on basic physiological and pathophysiological aspects of cerebral blood flow and brain injury. Topics presented on day two included assessment of cerebral blood flow using the latest imaging techniques, and an in-depth discussion of specific therapeutic options based on the results of large multi-centered clinical trials. Dr. **Peter Safar** delivered the keynote lecture on "Resuscitation from Temporary Global Ischemia." Dr. **Pat Kochanek** was one of the presenters with his discussion of "Ischemic Mechanisms in Traumatic Brain Injury."

Participants in the program garnered a deeper understanding of the determinants of stroke and traumatic brain injury, current techniques to quantify cerebral blood flow and to monitor changes in blood flow in response to therapy, and the current status of medical management of stroke and traumatic brain injury.

Japanese Physicians Visit Department

The Department recently welcomed two physicians from Japan to share UPMC's expertise in anesthesiology and critical care medicine and how they are managed in the U.S. Dr. Jun Uehara visited the Division of Critical Care Medicine for two weeks this past April. Dr. Hideki Miyao also arrived in April, at the invitation of Dr. **Etsuro Motoyama**, and will remain as a visiting instructor until September 30 of this year.

Dr. Uehara completed training in anesthesiology and has been certified in that specialty in Japan since 1993. For the past three years, he has been assigned to the Kyushu Kousei-Nenkin Hospital in Fukuoka. He visited our Division of CCM to gain insight, particularly into our management of brain trauma cases following motor vehicle accidents, as well as the acute management of stroke victims.



Dr. Jun Uehara

Traumatology does not exist as a separate discipline in Japan, so this organization in the U.S. was of particular interest to Dr. Uehara, who also indicated an interest in further training in CCM upon return to his native country. He was especially interested in the American ACLS and ATLS educational and certification programs, as well as training programs in both emergency and critical care medicine. During his short visit, Dr. Uehara joined UPMC faculty members assigned to the Emergency Department and the Trauma/Neurosurgical and Neurovascular ICUs. He had the opportunity to discuss educational aspects of emergency and critical care medicine with Drs. David Wilson and Paul Rogers.

Perioperative management of transplantation, OR and CCM issues, and labor anesthesia are the special interests of Dr. Hideki Miyao. His goal is to learn how to manage critical care in the ICU and anesthesia in the OR and to study perioperative care for heart, lung, and liver transplantation, as well as anesthesia for labor. According to Dr. Miyao, these issues are not yet well established in Japan.

Dr. Miyao is an expert in airway humidifier systems during mechanical ventilation, and has published studies on

the topic of high-frequency oscillation ventilation.

He also specializes in intraoperative fluid therapy and is editor-in-chief of *Artificial Blood*, the journal of the Society of Blood Substitutes, Japan. He is an associate professor of anesthesiology and critical care at the Saitama Medical School in Saitama, Japan, north of Tokyo. While at UPMC, Dr. Miyao plans to observe the ORs and ICUs, attend conferences, and participate in morning rounds.



Dr. Hideki Miyao

Intensivist Visits from Czech Republic

Dr. Eva Zdrahalova, of Prague, Czech Republic, spent the month of May as a visiting/observing physician in our Department, rotating through the cardiac operating rooms and the coronary care, medical intensive care, and cardiothoracic intensive care units.

Dr. Zdrahalova is attending physician in the cardiovascular intensive care unit in the Hospital Na Homolce in Prague. This hospital is one of the most modern in the country and concentrates mostly on cardiovascular and

neurosurgical procedures. It is the only hospital in central Europe with a gamma knife. The Department of Cardiovascular Surgery has 50 beds, 11 ICU beds, and 11 intermediate monitored beds. They perform about 300 open-heart surgeries a year and most of the vascular procedures in the country.

In recent years, several anesthesiologists, surgeons, and intensivists from this institution have visited UPMC to observe our clinical procedures and have found the experience to be very interesting and useful.



Dr. Eva Zdrahalova

Dr. Zdrahalova graduated from the Medical School of Charles University in Prague in 1978 and trained in internal medicine, cardiology, and pulmonary medicine at the Institute of Clinical and Experimental Medicine in Prague (analogous to our NIH) and at the University Hospital. She has specialty board certification in internal medicine, cardiology, and pulmonary medicine.

Dr. Zdrahalova enjoyed her stay, using her free time to go sightseeing in and around Pittsburgh. She also traveled to Niagara Falls by bus, and was able to perform a successful bystander CPR on one of the passengers during the return trip.

Department Welcomes Turkish Visitor

As part of an exchange program developed under Dr. Thomas Detre, Dr. Nur Baykara of Turkey has been visiting the Department from May through June 2000, and is hoping to extend her stay through August. Dr. Baykara is an assistant professor of anesthesiology at Kocaeli University Hospital, in a city near Istanbul. She has been on rotation as an observer in the Liver Transplant ICU, the MICU, the Surgical/Trauma Unit, and NICU. Dr. **James Snyder** assisted with her orientation and schedule arrangements. According to Dr. Snyder, she has shown an ambitious interest in learning as much as possible in neurological, transplant, trauma, and medical (especially pulmonary) intensive care.

Dr. Baykara completed her training in anesthesiology and reanimation in 1995 and is now the medical director of a five-bed ICU in a hospital that



Dr. Nur Baykara

has just reopened after being destroyed six months ago in an earthquake. The hospital has only 100 beds, but as a university hospital, it offers most specialties. Surgeons there perform approximately 100 coronary bypass procedures per year. The largest component of their patient population consists of trauma victims from motor vehicle accidents. The hospital is considering development of a liver transplantation program.

Dr. Baykara has made a number of scientific presentations on observations and studies from the operating area and in intensive care, including fluconazole resistance in *Candida tropicalis* infection, transfusion-related lung injury, and neuromuscular blocking agents. She is particularly interested in adrenocortical response to weaning from mechanical ventilation, and has initiated a protocol to study the relationship. She is married to Dr. Tarik Baykara, a researcher at the Marmara Research Center who also holds the position of vice-director.

HTA Team Hosts Visiting Instructor

The Hepatic Transplantation Anesthesiology (HTA) team has been host to a colleague from the United Kingdom since last summer. Visiting Instructor Susan Milroy, MD came to the University of Pittsburgh in July 1999 from King's College Hospital, London. Dr. Milroy is a 1987 graduate of Charing Cross and Westminster Medical School in London. She fulfilled residency in anesthesiology at the South Thames Region hospitals, including Royal Free and St. George's hospitals, and completed a fellowship in liver transplant anesthesiology at King's College Hospital in London, which is the largest center for liver transplantation in Europe. Dr. Milroy is a certified Fellow of the Royal College of Anaesthetists (1993), and has post-graduate qualifications in Anesthetics (1997) and Intensive Medicine (1998) in the United Kingdom. She has research experience, and has

published several abstracts and papers in the field of liver transplantation anesthesia. At the 11th meeting of the Liver Intensive Care Group of Europe in Torino, Italy in May 2000, she presented an abstract entitled: "Failure of aprotinin to reduce blood loss during orthotopic liver transplantation."

According to Dr. **Raymond Planinsic**, director of Hepatic Transplantation Anesthesiology, Dr. Milroy has been an excellent colleague, and a productive and hard-working member of the team. Dr. Milroy plans to stay in Pittsburgh through December 2000, after which she plans to return to the UK and continue her career in anesthesia with an interest in transplantation and hepatobiliary surgery.



Dr. Susan Milroy

Department's Academic Manager Joins Chancellor's Staff

Rachael Berget, former academic manager in the Department of Anesthesiology/CCM, left the Department in March to join the senior staff of University of Pittsburgh Chancellor Mark A. Nordenberg. As assistant to the chancellor, Rachael supports the planning, execution, and follow-up of events in which Chancellor Nordenberg is scheduled to appear, including background research, preview of appearance sites, and coordination of logistics. She also assists the Office of Special Events in planning



Former Academic Manager Rachael Berget stands by her new boss, Chancellor Mark A. Nordenberg.

occasions that require the chancellor's presence, and she is his liaison to community groups. Rachael earned a bachelor's degree in business

education from the University of Houston, and an M.Ed. in higher education administration from the University of Pittsburgh. Before becoming

academic manager, she was the administrative coordinator for special projects for Dr. Firestone. Rachael's warm personality and helpful, efficient style were a Department asset for two years. The Department expresses appreciation to Rachael for her excellent work and wishes her the best of luck in her new position.

We also extend our warmest welcome to the Department's new academic manager, **Madeline Cindrich**. Ms. Cindrich is an experienced manager with eight years of service in the Department of Surgery.

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