A few years ago, UCSF Chair of Anesthesia and Perioperative Care Ronald D. Miller, MD, attended a meeting with his fellow department chairs. There, he heard two other chairs speculate about shortening their core residencies so they could augment resident experience in a treatment area that had become increasingly important.

The idea caught Miller’s attention, not least because he was chairing an American Society of Anesthesiology (ASA) task force considering anesthesia’s future. Part of his charge was to determine how academic anesthesia could better meet the needs of a changing medical environment. The work had him particularly focused on two key issues: critical care and research.

Miller’s ASA task force had already found that to meet the needs of hospitals increasingly populated by older and sicker patients, there would have to be a substantial increase in anesthesiology-trained critical care physicians. As for research, academic anesthesiologists have long been concerned about the decline of physician scientists in their specialty.

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A Tribute to Our Leadership

In November 2008, the UCSF Department of Anesthesia celebrated its 50th anniversary with a week of events that brought together alumni, many of the department’s seminal leaders, and luminaries from around the world of medicine. Thanks to the hard work of many throughout our department, the events were a fitting tribute to our leadership in so many aspects of our profession.

The events also caused me to reflect on a similar celebration in 1984, which commemorated our first 25 years. At that time, our department was conducting a search for a new chair. Though I’d been encouraged by senior members of the national anesthesia community to seek a position at a less well-established program where I could “make a mark,” I was offered the position at UCSF and have always been grateful for the opportunity. In accepting the position, my goals were simple in concept, if not in execution: to be the best department of anesthesia in the world and to have our department become a campus leader in clinical care, education, and research. I’m proud to say that with the help of colleagues across this campus we have achieved those goals. Our leadership is evident in many ways and areas at UCSF and its clinical facilities.

In order to support growing clinical demands, the last 25 years have seen a dramatic expansion of our department’s clinical responsibilities. In Perioperative medicine, we have asserted leadership in everything from preoperative evaluation to operating room, recovery, and critical care. Twenty-seven faculty members – over 25% of our entire faculty – are now board-certified in intensive care. Our department also has instituted a model outpatient pain management program and assumed a number of formal leadership roles at UCSF Medical Center, San Francisco General Hospital, and the San Francisco Veterans’ Administration Medical Center.

Our continued growth also has made us one of the largest, most prestigious academic anesthesia programs in the world. Yet I believe what truly distinguishes our educational programs is continuous innovation. Consider: of the first 20 inductees in the Haile Debas Academy of Medical Educators, two – Martin Bogetz and Manuel Pardo, Jr. – are from this department; we were one...
of the first anesthesia departments to set up a simulation-based system of learning; and we have brought exciting new approaches to our residencies and to medical student education. As this issue of the newsletter highlights, one of our most important innovations came recently, as we now give residents the opportunity to shorten their formal anesthesia training, while lengthening their training in either research or critical care which is unique to UCSF.

Research was where this department first made its mark, but in 1984 I asked a few prominent scientists to evaluate our program. Noting that molecular biology would be the next important frontier, they made clear we were in danger of falling behind. This finding overlapped with a program set up by the medical school dean at the time, Rudi Schmid, who quietly organized basic science tutorials for all clinical chairs. By anticipating the changes in medical research, we were able to successfully adapt and for many years running have been the number one program in the country in NIH funding.

None of this would have been possible without quality people, and our ability to attract them certainly speaks to our reputation, but it also involves a bit of luck as well. Most notably, during my time as chair our department was luckily positioned to take advantage of a changing societal norm: as more highly qualified women entered the pool of residents and faculty members, we hired them, including many outstanding scientists who truly pushed the research agenda forward and expanded the excellence of our programs. Our reputation grew as a result, enabling us to continue to attract the best of the best, regardless of gender.

All of these successes – which are certainly not mine alone – come from a willingness to avoid complacency or easy answers. When I took this position, Dean Schmid would organize events where chairs would have to present our departments’ achievements, failures, and challenges in front of our peers. I was nervous before those presentations, but I left energized, because I (and other chairs), were being held accountable and because those sessions generated institutional support for new ideas.

Today, perceived financial pressures have caused many to look to the easy solution of building up clinical capabilities at the expense of education and research, which can be harder to sustain. Yet I think we can and must sustain them and restore a balance by working closely with other departments and pressing each other to meet a new generation of challenges.

It’s been my privilege to serve as chair for a quarter century and I want to thank all of you who have been my colleagues throughout these years. If my successor has half the support I have had, they will find the rewards of this position far exceed its challenges.

– Ronald D. Miller

On June 30, 2009, Ronald D. Miller, MD, will step down as chairman of the UCSF Department of Anesthesia, a position he has held for 25 years, but remains an active faculty member with emphasis on clinical research.

The formal evening began with a reception and a slide show drawn from thousands of photos taken over the department’s history. When the evening moved into the banquet room, a four-course dinner was punctuated by a series of speakers that ranged from San Francisco’s former mayor Willie Brown through former Dean of the UCSF School of Medicine Haile T. Debas, Medical Center CEO Mark Laret, prominent German anesthesiologist Hugo Van Aken, and Ed Miller, CEO and Dean of the medical faculty at Johns Hopkins School of Medicine.
Critical Care and Research Residencies

continued from front page

A

esthesiologist William Young, MD, who directs the UCSF Center for Cerebrovascular Research says, “Specialties need to reinvent themselves and research is what allows them to do that. That’s the history of medicine: there are no good old days…but anesthesia training tends to be more focused on procedures and clinical competence than on research.”

Relative to other academic anesthesia departments, until now UCSF has successfully addressed these two areas with fellowships. Yet after the department chair meeting, Miller began to wonder whether that was the best or only route, especially in a department that has a well-earned international reputation for innovation in both critical care and research. “I wanted to find a creative solution,” he says.

He asked Vice Chair for Education Manuel Pardo, MD, and Vice Chair and Director of Residency Programs Mark Rosen, MD, to envision and work out the details for innovative residency tracks in both areas that would attract strong applicants – and then more aggressively support them in their interests than a standard residency would. Once they’d crafted the tracks – which proposed modifications to the traditional three-year residency and enrolling two applicants in each track for 2009-2010 – they submitted them for approval to both the ABA (American Board of Anesthesiology) and the ACGME (Accreditation Council for Graduate Medical Education).

With the boards’ approvals, the UCSF Innovative Residencies became the first of their kind in the country. As word has spread, it’s clear many others will follow.

CRITICAL CARE TRACK

Anesthesia was the specialty that pioneered intensive care units (ICUs), but in most American hospitals, anesthesia’s presence in these units has dwindled. This is not true at UCSF, where the Department of Anesthesia and Perioperative Care has maintained a focus on critical care virtually unparalleled anywhere else in the US. Today, the department boasts 28 critical care certified anesthesiologists on staff; most other departments of anesthesia have only one or two.

Those numbers make UCSF an ideal setting to forge a new model that will expand the number of anesthesiologists going into critical care – and serve as a model for meeting the needs of hospitals nationwide. Other specialties, of course, also go into critical care, but Michael Gropper, MD, PhD, and director of critical care medicine at UCSF, says, “Because of the critical nature of our procedures, familiarity with critical illness, and expertise in airway management, mechanical ventilation, hemodynamic monitoring, and pharmacology, a lot of us feel anesthesia is the best training for critical care.”

He contends as well that training intensivists is important for the future of the specialty. “The truth is many of us are overtrained for what we do day in and day out in the OR and the future is the complicated work of perioperative care...if you go to Europe or Asia, most intensivists are anesthesiologists, but in the US it’s only 6 percent,” say Gropper. “The main reason is financial, because under our system you get paid by the procedure.”

But Gropper has noticed a change recently, with more residents expressing an academic orientation toward the complex challenges of critical care. In an effort to take advantage of this, as well as of the number of faculty available to train residents, Pardo, Rosen, and Gropper have devised a program that allows two residents a year to gain additional ICU training, so that at the end of their residency they will be board eligible for both anesthesia and critical care medicine.

“Our hope is that we can identify those individuals who know they want this and this program will enable them to better meet the needs of the critically ill patient,” says Pardo.

While the total amount of clinical training is the same as a typical residency, the critical care track will take what is typically a one-year ICU fellowship and spread it over two years of a four-year residency. It will include more elective time dedicated to ICU-related electives in disciplines like nephrology and nutrition, not things anesthesiologists traditionally spend a lot of time on.

“It’s a major effort to integrate the entire concept,” says Gropper. “Our hope is that in the long run we will be a model for others, especially since research has shown that having an intensivist in the ICU makes it a safer, higher quality environment.”

RESEARCH TRACK

Even after the focus in anesthesia research moved from physiology – the department’s claim to fame in its early days – to cellular and molecular biology and their translation to clinical care, UCSF has thrived in part by continuing to attract people with deep science backgrounds. The payoff has been that the department has long been a leader in research funding for anesthesia departments; for the past five years, it has ranked first in the United States in the National Institutes of Health (NIH) funding for the specialty.
But UCSF is not immune to the red flags that are contributing to the decline of physician scientists in anesthesiology. Those red flags include clinical demands that are higher than in some other specialties and a significant income difference between clinical anesthesia and research. It’s also become much more difficult than it used to be to combine clinical training with a more “casual” approach to research training.

“Most people used to pick up research skills relatively informally during their clinical training, but that was twenty years ago when, for example, a process might have been about a single receptor and ligand,” says Young. “Now we may be looking at how hundreds, even thousands of receptors and ligands interact; ‘signaling webs’ rather than ‘signaling pathways’. Training takes longer and you need the right setting, right tools, and right teachers to become – and stay – competitive in the research marketplace.”

This fact typically puts physicians behind PhDs – who often put in four to eight years of post-doctoral research training – in their efforts to become independent, RO1 funded researchers. Young believes across all specialties such a trend disrupts an important balance between basic scientists and physician scientists, who bring different perspectives to the table. Other specialties have been more aggressive in their response, but anesthesia has fallen further behind.

“So we decided to figure out a way to use the residency years to create investigators who can generate their own hypotheses, investigate those hypotheses using the latest scientific methods, and compete for independent grant funding more quickly, while continuing to train to be excellent clinical anesthesiologists,” says Pardo.

That process required a creative partnership between research and education, with Pardo and Rosen building the education piece, while researchers including Young and Jean-Francois Pittet concentrate on building the research curriculum and mentoring process. The result is characterized by a few differences from a traditional program.

First, during the application process, prospective residents undergo two days of interviews, instead of one. The second day is spent with departmental researchers, during which time the applicant may be asked to present prior research. Rosen says they will not fill the spots unless they find the right people. “We can’t just fill the positions because they exist,” he says. “Ideally we find the right people by looking at applicants from a multi-factorial perspective, including life achievements outside of medicine.”

Second, rather than a two and a half-year residency, followed by a half-year or full year of research, the innovative track is spread over four years. During that time, residents receive two full years of clinical anesthesia training, and two years of research training. That time is flexible, so as to allow for the unpredictable dynamics of a typical research project. In addition, during the “two years” of research, residents are expected to spend one day each week in clinical anesthesia.

Third, the program will carefully match residents with a physician researcher-mentor, who will continue in that role through a formal post-residency period, and on into the mentee’s time as a junior faculty member. Pardo hopes to even create schedules that allow resident and mentor to spend most of their clinical days together.

“Essentially, it’s a highly individualized program with common benchmarks,” says Young. “The end-product is scholarly independence for someone brought to the top of their game, who can be intellectually competitive and make a real contribution to medicine.”

“It’s been a lot of work, but we believe this is worth it,” says Rosen. “It’s a real opportunity to entice, train and sustain researchers and address a nationwide concern in anesthesiology.”

“So we decided to figure out a way to use the residency years to create investigators who can generate their own hypotheses, investigate those hypotheses using the latest scientific methods, and compete for independent grant funding more quickly, while continuing to train to be excellent clinical anesthesiologists.”

– Manuel Pardo, MD
Anesthesia Internship

PROVIDING RIGOR, SUPPORT, AND OPPORTUNITIES

“More on-call hours, more time with sick ICU patients, and the opportunity to make more decisions gives you a sense of confidence; I’m actually a doctor, not just a medical student.”

Lance Retherford, MD, MEDICAL SCHOOL: Medical College of Wisconsin, Milwaukee, WI

Here were easier options available, but I liked the opportunity to spend four years in San Francisco, to be part of something new and help shape it,” says Lance Retherford, MD, of the new UCSF anesthesia internship. Retherford, who entered in the fall of 2008, is a member of the program’s first cohort.

“I particularly liked the chance to get an integrated and rigorous experience that I don’t think you find even with the usual transitional year,” he says. “More on-call hours, more time with sick ICU patients, and the opportunity to make more decisions gives you a sense of confidence; I’m actually a doctor, not just a medical student.”

In place of an internship year elsewhere and a three-year residency, the program enables residents to spend four full years at UCSF. (Eight of this year’s 24 resident applicants were accepted into the program.) During their internship year, these entering physicians move through an intensive five months of internal medicine, as well as rotations in anesthesia, intensive care, surgery, the emergency room, and neurology. Teaching methodologies include simulation, didactic sessions, and an unusual amount of hands-on training.

“It’s similar to the traditional transitional year, but with a focus on adult inpatient medicine,” says Kristina Sullivan, MD, and director of the internship program. “And UCSF has a very strong internal medicine department that offers great teaching.”

In part, the program is a response to the ACGME’s (Accreditation Council for Graduate Medical Education) Resident Review Committee proposal for 4-year programs that include internships. “There were concerns that 25 percent of the residency years were out of the program’s control,” says Vice Chair for Education Manuel Pardo, MD.

Pardo and Sullivan shared those concerns. “UCSF is a demanding clinical environment and we thought having interns here would be better preparation for the residency,” says Sullivan. “Also, internship is a special time where interns develop what becomes a critical support network. This internship gives our interns a unique opportunity to integrate with their colleagues in different departments who they’ll work with as residents.”

Initial feedback has been very positive. Says Retherford, “I’m definitely developing friendships in other specialties and developing a deeper level of understanding of other services so I can be a more effective team member…. Later on that will matter, because I’m a name and a face, for things like when I need a consult.”

Despite the positive feedback – and because they expect to increase the numbers – Sullivan and Pardo see the program as a work in progress and expect to be fine tuning it over the next couple of years.
Jean-François Pittet, MD, has long led an aggressive research lab at San Francisco General Hospital (SFGH), which includes four physician scientists, three bench scientists, and a technician. The team conducts studies that probe complex questions about the underlying mediators of fluid accumulation in the lungs. By systematically testing hypotheses in a series of experiments that move from the Petri dish and live animals to computerized system models and clinical trials, Pittet’s lab has advanced understanding of ALI and lung trauma worldwide. “This is true translational research,” he says.

ALI afflicts 150,000 patients in the United States each year, about a third of who die from the condition. While the causes are many and well known – things like hemorrhage, aspiration of stomach contents, pancreatitis, and sepsis – the underlying molecular processes are poorly understood. Without that understanding, effective treatment remains elusive.

One of the hypotheses Pittet’s lab is exploring asserts that stress protein (or heat shock) response in ALI protects the integrity of the alveolar capillary barrier. The process begins when Hsp90 disassociates from its client proteins rendering these proteins nonfunctional. Subsequently, there is an up regulation of Hsp70, which binds to Hsp90 client proteins, rescuing them until the Hsp90 can re-complex with the proteins.
“In animal models, we've shown that when the heat shock response is induced prior to hemorrhagic shock or ischemic perfusion, the animals don't develop ALI,” says Marybeth Howard, a PhD researcher in the Pittet lab.

If their hypothesis continues to bear itself out in the system model, a key challenge will be that the inhibition of Hsp90 and up regulation of Hsp70 also shut down iNOS function. iNOS plays an essential role in immunity to infection. Consequently, the team is exploring pharmaceutical solutions that might induce heat shock response in the early phase of ALI, thus inhibiting proinflammatory signaling pathways that would be detrimental to the integrity of the alveolar capillary barrier – but allowing iNOS to be synthesized and functioning in time to protect the patient from infection. In particular, Pittet and his team are looking at ways to manipulate a class of drugs – already proven safe in humans – that inhibit Hsp90’s binding function.

HEALING EPITHELIAL INJURY

A related hypothesis Pittet’s lab is exploring concerns alveolar epithelial injury. A condition that is common in ALI patients, the loss of epithelial integrity contributes to alveolar flooding and disrupts normal lung fluid transport. Pittet’s hypothesis is that locally activated TGF-beta 1 decreases lung epithelial fluid transport by altering the expression and function of key ion channels, thus inhibiting the removal of pulmonary edema from the lung’s airspaces.

“Essentially, we are trying to understand the molecular base for normal physiology and normal repair,” says Jeremie Roux, an assistant in the Pittet lab.

“Normal programming is designed to respond to small injuries, but larger injuries may cause a maladaptive response,” says Pittet. So inflammation in response to ALI may be designed to heal, but if it is not regulated it can also kill.

Having uncovered some of the tension between fluid absorption and epithelial repair, the Pittet lab is hoping to find a drug and a process that can resolve that tension. “The trick is when to administer such a drug, in what dosage, and at which nodes...we need to generate specific targets,” says Pittet. “Unfortunately, we’re far away from clinical uses, because we still don’t fully understand what controls fluid movement.”

FIGHTING TRAUMA

Pittet’s direct clinical research focuses on trauma, which remains the leading cause of death and disability in patients less than 40 years old. Coagulopathy, which is common following severe trauma, plays a significant role in endangering these patient’s lives.

“Recent studies from our laboratory have reported that one quarter of major trauma patients are coagulopathic upon arrival in the emergency department and before any fluid resuscitation,” says Pittet. In response Pittet’s lab is testing the hypothesis that acute traumatic coagulopathy is primarily caused by tissue hypoperfusion resulting in a complement-mediated activation of the protein C pathway.

“We believe that the C pathway model describes a maladaptive response to shock that leads to coagulopathy,” says Pittet. Temporarily, this response may be instrumental in keeping the patient alive, as supported by the fact that when Pittet’s lab blocked the response in a mouse model, the mice died. The problem, of course, is that coagulopathy is also life threatening, so the team is looking for a way to clinically modulate the shock response. They also are examining whether posttraumatic coagulation abnormalities increase the damage to the lung endothelial barrier caused by P. aeruginosa, one of the most common causes of pneumonia in ICU patients.

Pittet is joined in this clinical research by Mitchell Cohen, MD, an assistant professor in the department of surgery. As part of their effort, they are developing a Center for Translational Research for Trauma. “We believe this will provide a new framework to expand and better organize our response to trauma so we can better serve ICU trauma patients,” says Pittet.

“Recent studies from our laboratory have reported that one quarter of major trauma patients are coagulopathic upon arrival in the emergency department and before any fluid resuscitation.”

– Jean-Francois Pittet, MD
CAREER FACULTY

Pedram Alesi, MD
Assistant Clinical Professor
Joined Faculty October 1, 2008

MEDICAL SCHOOL:
University of Vermont, School of Medicine
Burlington, Vermont

INTERNSHIP:
Medicine
Maine Medical Center / Portland, Maine

RESIDENCY:
Anesthesia
Beth Israel Deaconess Medical Center
Boston, Massachusetts

FELLOWSHIP:
Obstetric Anesthesia
Stanford University School of Medicine
Stanford, California

Huang, MD
Clinical Instructor
Joined Faculty October 1, 2008

MEDICAL SCHOOL:
Mount Sinai School of Medicine
New York, New York

INTERNSHIP:
Internal Medicine
Maimonides Medical Center
Brooklyn, New York

RESIDENCY:
Anesthesia
Brigham and Women’s Hospital
Boston, Massachusetts

Rondall Lane, MD
Clinical Instructor
Joined Faculty January 1, 2009

ADVANCED DEGREE:
MPH
Johns Hopkins Bloomberg School of Public Health / Baltimore, MD

INTERNSHIP:
Internal Medicine
Yale New Haven Hospital
Yale University School of Medicine
New Haven, CT

MEDICAL SCHOOL:
Dartmouth Medical School / Hanover, NH

INTERNSHIP:
Internal Medicine
Yale New Haven Hospital, Yale University School of Medicine
New Haven, CT

RESIDENCIES:
Internal Medicine
Yale New Haven Hospital, Yale University School of Medicine
New Haven, CT

Alok Sharma, MD
Clinical Instructor
Joined Faculty February 16, 2009

MEDICAL SCHOOL:
University of Hawaii, John A. Burns School of Medicine
Honolulu, HI

INTERNSHIP:
Transitional Internship
University of Hawaii
Transitional Internship Program
Honolulu, Hawaii

RESIDENCY:
Anesthesiology
Department of Anesthesiology and Critical Care Medicine
Johns Hopkins Hospital
Baltimore, Maryland

PREVIOUS EMPLOYMENT:
Faculty Member
Johns Hopkins University
School of Medicine, Department of Anesthesiology and Critical Care Medicine

VISITING FACULTY

Thaddeus Odermatt, MD
Visiting Assistant Professor
Joined Faculty February 1, 2009

MEDICAL SCHOOL:
University of Basel School of Medicine
Basel, Switzerland

INTERNSHIP:
Surgery
Canton Hospital
Sarnen, Switzerland

RESIDENCY:
Department of Anesthesia
including 7 months in Intensive Care Medicine
Canton Hospital
Sarnen, Switzerland

Internal Medicine
Canton Hospital Wolhusen/Sursee, Switzerland

Department of Anesthesia
University of Basel Hospital
Basel, Switzerland

Department of Anesthesia
including 5 months in Intensive Care Medicine
Buergerspital
Solothurn, Switzerland

Kamran Samii, MD
Visiting Professor
Joined Faculty February 15, 2009

ADVANCED DEGREE:
PhD
University of Paris / Paris, France

MEDICAL SCHOOL:
Paris Medical School, University of Paris / Paris, France

RESIDENCY:
Anesthesiology
University Hospitals of Paris / Paris, France

FELLOWSHIP:
Anesthesiology
University Hospitals of Paris / Paris, France

PREVIOUS EMPLOYMENT:
Chairman, Anesthesiology
Toulouse University Hospitals
Toulouse, France

Chairman, Anesthesiology
Bicêtre University Hospital
Le Kremlin Bicêtre, France

Professor and Vice Chairman, Anesthesiology
Bicêtre University Paris
Le Kremlin Bicêtre, France

Associate Professor, Anesthesiology
University Hospitals of Paris
Paris, France

Assistant Professor, Intensive Care
University Hospitals of Paris
Paris, France
Faculty Honors, Awards and Appointments 2008-2009

Congratulations to the faculty in the Department Anesthesia who were honored for their achievements and contributions during the 2008-2009 academic year. They include the following awards and honors:

Edmond I. Eger II, MD

EXTRAMURAL HONOR:
American Society of Anesthesiologists 2009 John W. Severinghaus Lecture on Translational Research (2nd Annual)

Benjamin T. Houseman, MD, PhD

CAMPUS AWARD:
2009 Recipient, Radiometer-John W. Severinghaus Fellowship in Anesthesia Research

Errol Lobo, MD

CAMPUS APPOINTMENT:
Chairperson, Committee on International Education, 2009, UCSF Academic Senate

Ronald D. Miller, MD

EXTRAMURAL HONORS:
2008 Rovenstine Lecture, “The Pursuit of Excellence,” invited and accepted for publication by the journal Anesthesiology, 2009
   International Launch: June 2009 at the European Society of Anaesthesiology Meeting in Milan, Italy
   National Launch: October 2009 at the American Society of Anesthesiologists Meeting in New Orleans, Louisiana

Isobel A. Russell, MD, PhD

CAMPUS APPOINTMENT:
UCSF/Coro Faculty Leadership Collaborative, December 11, 2008

Martin M. Stechert, MD, PhD

EXTRAMURAL APPOINTMENT:
Liaison Editor, Perioperative Echocardiography, Society of Cardiovascular Anesthesiologists

Jenson Wong, MD

CAMPUS APPOINTMENTS:
Co-Chair, SFGH Procedural Sedation Subcommittee of Pharmacy and Therapeutics, November 2008
Director of Quality, Process Improvement, and Patient Safety for SFGH Anesthesia and Perioperative Care, February 2008

Maurice Zwass, MD

CAMPUS APPOINTMENTS:
UCSF Children’s Hospital Safety Committee
UCSF Children’s Hospital Quality Improvement Executive Committee

Roland Bainton Appointed to the Program in Biological Sciences

In an effort to provide students with a broad range of research opportunities and facilitate interaction between students and faculty across disciplines, the graduate faculty at UCSF created the Herbert W. Boyer Program in Biological Sciences. This innovative and prestigious program has become a national model for the training of graduate students, allowing the creation of interdisciplinary graduate curricula instead of limiting students to studies in particular departments. Faculty appointment to PIBS requires that the faculty member hold a full-time or in-residence appointment at UCSF, and have a laboratory with adequate funding, space and environment to support graduate student training. Dr. Bainton’s lab is among 150 other labs affiliated with the Program, and focuses on:

- Cellular signaling mechanisms that control barrier function
- Biology and physiology of xenobiotic transport
- Translational therapies based on modulation of the Blood Brain Barrier

Dr. Bainton’s work has not stopped there. He also serves as a council member of the UCSF Medical Scientist Training program, which seeks to provide an integrated research and clinical education experience, so that graduates receive both the MD and the PhD degree upon completion, and can “pursue outstanding careers in academic medicine and research.” Serving on the council means that Dr. Bainton does everything from selecting candidates for admission to serving as a formal advisor to first and second year students and assisting in the formulation of MSTP policy.

As Department of Anesthesia and Perioperative Care Chairman Ronald Miller states, “To have a member of a clinical department in these groups is quite an honor for Roland, but also certainly facilitates the Department’s efforts.”

Congratulations Dr. Bainton!
Upcoming Events

The Changing Practice of Anesthesia
September 11-September 13, 2009
Hotel Nikko San Francisco / San Francisco, California

COURSE CHAIR:
Susan Ryan, MD, PhD
Associate Clinical Professor, Department of Anesthesia and Perioperative Care

Program and registration information: www.cme.ucsf.edu

UCSF Center for Cerebrovascular Research
CCR/PPG SEMINARS
Presented by the Center for Cerebrovascular Research
Department of Anesthesia and Perioperative Care
University of California, San Francisco
San Francisco General Hospital

For a list of upcoming seminars: http://avm.ucsf.edu/
For a list of past seminars: http://avm.ucsf.edu/research/recent_seminars.html

Critical Care Medicine and Trauma 2009
May 28-May 30, 2009
InterContinental Mark Hopkins Hotel / San Francisco, California

COURSE DIRECTOR:
Michael A. Gropper, MD, PhD
Professor and Vice Chair, Department of Anesthesia and Perioperative Care
Director, Critical Care Medicine, UCSF Medical Center

COURSE CO-CHAIRS:
Rochelle Dicker, MD
Assistant Professor in Residence, Department of Surgery
San Francisco General Hospital

Mark Eisner, MD, MPH
Associate Professor, Department of Anesthesia,
Department of Medicine Division of Occupational and Environmental Medicine and Division of Pulmonary and Critical Care Medicine, UCSF Medical Center

Julin Tang, MD, MS
Clinical Professor, Department of Anesthesia
Director, Critical Care Medicine, San Francisco General Hospital

Program and registration information: www.cme.ucsf.edu