Timeline of Sentinel Contributions

1958

Features Inside

Chairs, Chiefs, and Directors

NIH Training Grant
Stuart C. Cullen

First 3-Function Blood Gas Analyzer
John Severinghaus

Affiliation with East Bay Children’s Hospital

Stuart C. Cullen
Chair, 1958
Dean, UCSF Medical School, 1966

Ernie Guy
Chief, SFGH, 1959

3 Information about 50th Anniversary Events
4 Narrative History of the UCSF Department of Anesthesia and Perioperative Care
24 Faculty Honors, Awards & Appointments
26 New Faculty
27 Academic Department Chairs from UCSF
28 UCSF Anesthesia Residents, Class of 2011
29 Stuart C. Cullen and William K. Hamilton Awardees
30 Research Faculty Spotlight
32 Peer Reviewed Publications 2007-2008
38 Active Research Grants
To commemorate its first fifty years as one of the leading anesthesia departments in the world, the UCSF Department of Anesthesia will host a week long series of events in San Francisco, from November 10 – 15, 2008

50th Anniversary Schedule of Events

Monday, November 10 – Wednesday, November 13: Open House Events
Please join us in celebrating our 50th Anniversary! Department of Anesthesia and Perioperative Care staff and faculty are invited to attend, as well as members of the broader UCSF community, who have contributed to the growth and success of our department. Beverages and light fare will be served. The Department Chair, Dr. Ronald Miller, will attend and provide opening remarks.
• Monday, November 10, 3 – 5 pm — San Francisco General Hospital, Conference Room 2A6, Main Hospital, 2nd Floor
• Wednesday, November 12, 12 – 2 pm — Moffitt-Long/Mt. Zion, Millberry Union, Parnassus Campus
• Wednesday, November 12, 3 – 5 pm — Veteran’s Administration Hospital, Director’s Conference Room

Saturday, November 15:
Symposium
Mission Bay Conference Center, Robertson Auditorium, 7 am – 4 pm
CME Credits are available.
The Saturday symposium will be a moderated discussion featuring some of the department’s past and present leaders, as well as national and international luminaries. Sessions will highlight many of the ground-breaking events in research, education, and clinical care at UCSF – and beyond – and will also look to the future of anesthesia.

Alumni Gala Reception and Dinner
By invitation only
Palace Hotel, Garden Court and Grand Ballroom, 6 pm
For more information, please go to the website at http://www.anesthesia.ucsf.edu
On September 4, 1957, Julius Comroe arrived in Iowa City. The formal reason was a meeting of the American Physiologic Society, but Comroe, the newly appointed director of the planned Cardiovascular Research Institute (CVRI) at UCSF, had other things on his mind.

**Timeline of Sentinel Contributions**

**1964**

**First Anesthesia Faculty with Joint Appointment in Department of Pharmacology**

William K. Hamilton  
Chair, 1967  
Associate Dean for House Staff Affairs, UCSF, 1973

**Anesthetic Effects in Fetal Lamb Model**

Sol Shnider

**1st Director, ICU, SFGH, 1967**

Joe Lee

Stuart C. Cullen, Demo
At the time, anesthesia at UCSF was a small division in the Department of Surgery, with few resources or responsibilities and no research program. Comroe—who had been recruited to UCSF as part of an effort to transform what was widely regarded as a third-rate medical school into a truly respected center of academic medicine—believed that the emerging discipline of anesthesia could play an important role both in enhancing UCSF’s reputation and helping the CVRI establish itself as a vital resource and training vehicle for researchers across the UCSF campus.

The chair at Iowa, Stuart Cullen, had built an impressive academic department. Cullen and Comroe met that day; by the end of the meeting, Comroe had asked Cullen to lead anesthesia at UCSF. Cullen was intrigued—he relished the opportunity to improve upon what he had achieved at Iowa—but wouldn’t agree to go unless Comroe could guarantee that anesthesia would have its own department, separate from surgery.

Within hours, Comroe convinced UCSF to meet the demand. When Cullen called John Severinghaus (who had just completed an anesthesia residency with Cullen) with the news, Severinghaus immediately agreed to join Cullen at UCSF. Among their initial colleagues were existing faculty members Neri Guadagni and Frank DeBon; Earnest Guy, who was brought on as the chief of anesthesia at San Francisco General Hospital; and a new resident, Walter “Skip” Way.

It was the birth of a department that over the next fifty years would be at the heart of modern anesthesia’s explosive growth, a department that to this day continues to have an enormous impact on surgical practice and the management of pain. The department’s research, education, and clinical care quickly earned and have maintained reputations that are the equal or better of any institution in the world. Its faculty, fellows, and residents have produced a steady stream of remarkable contributions to medical care and patient safety.

Much of this growth and achievement is attributable to stable and visionary leadership. Since 1958, the department has known only three chairs—Cullen, William Hamilton, and Ronald Miller. Perhaps their most impressive, collective achievement is that while managing staggering growth and balancing clinical, research, and educational demands, they have never sacrificed the department’s sense of collegiality and mutual respect.

Through a series of verbal and visual snapshots, this edition of the newsletter attempts to tell the department’s story.

“This has been the era of modern anesthesia. Until the 1940’s, few physicians were anesthetists; this was a limited specialty with primitive techniques and a slight body of knowledge. But then this change occurred. New drugs and techniques were developed to induce anesthesia, support breathing, relax muscles, and suppress pain. Technology improved. Suddenly we had ventilators, ECG and anesthetic/respiratory gas monitors, the blood gas analyzer. All these made anesthesia safer – and more expensive. Knowledge that forms the underpinning of any specialty grew. The information came in a few basic forms: we measured everything affected by anesthetics - breathing, kidney function, cardiovascular function.”

– Edmond Eger
The Birth of a Department

THE Cullen Years
1958-1967

By all accounts, Stuart Cullen was a visionary. The offer to come to UCSF presented him with an opportunity to not just repeat, but to surpass what he had built at Iowa. How could he refuse?

With the help and support of Julius Comroe and his Cardiovascular Research Institute (CVRI), Cullen proved remarkably adept at securing funding, attracting talent, and initiating a research tradition that would create an enduring list of historic contributions. Along with Severinghaus, Guy, and Way, during his tenure Cullen would also hire future luminaries that included Edmond Eger, Ed Munson, Rudolf deJong, and Sol Shnider. But it wasn’t merely Cullen’s powerful influence in a specialty poised to explode that drew the best and the brightest, it was his personal charm, his commitment to doing things right, and his remarkably open mind.

Complications and Coagulation Defects associated with Massive Blood Transfusion
Ronald D. Miller

Anesthetic Uptake and Action 1st Edition
Edmond Eger

Timeline of Sentinel Contributions

1973

Chairs, Chiefs, and Directors

Robert Hickey
Chief, VAH, 1973

Gershon Levinson
Director, Obstetrical Anesthesia, SFGH, 1974

Hillary Don
Director, ICU, Moffitt; Director, Respiratory Therapy, 1974
The Master Tinkerer and the Blood-Gas Analyzer

John Severinghaus was originally a physicist who had spent the latter part of World War II designing radar. It was only after the war that he turned his attention to medicine, receiving his MD from Columbia and, in 1952, beginning an anesthesia residency at the University of Pennsylvania.

At Penn, a portable paramagnetic oxygen analyzer fascinated the man his friend Ted Eger calls “a master tinkerer.” Using himself as “human servo” he measured the uptake of nitrous oxide at the beginning of an anesthetic, keeping the oxygen at 20% and closed system volume constant using flow meters. It was the first measurement of the uptake of an anesthetic in a human, a modest beginning to a crucial medical advance.

Two years later at a conference, Severinghaus heard physiological chemist Richard Stow, describe a carbon dioxide electrode he had developed, but could not stabilize. “A few days later, I built a Stow type CO2 electrode using a bulb type Beckman pH electrode, a silver wire with an AgCl coat, and a rubber glove membrane. My contribution was pretty simple,” says Severinghaus. “Add soda.”

The next step came in early 1956, when at an informal meeting of respiratory physiologists that Severinghaus convened, a liver enzyme chemist named Leland Clark pulled from his pocket a polarographic O2 electrode with a polyethylene membrane. Within days, Severinghaus had begun the design of a water bath containing the PCO2 and PO2 electrodes, with a stirred cuvette for the Clark electrode. “Clark’s electrode was the key discovery,” says Severinghaus. “Fifty years later, every blood gas analyzer contains a Clark type electrode.”

Finally, shortly after arriving at UCSF and with the help of his friend and colleague Freeman Bradley, Severinghaus added a pH electrode to this evolving device, creating the first three-function blood gas analyzer. By 1960, he had built and installed a clinical blood-gas analyzer in the Moffit Hospital OR Suite.

“I initially failed to foresee the immense clinical potential of blood gas analysis,” says Severinghaus, who developed it for his laboratory pulmonary studies. Yet because of the way it allows physicians to safely monitor heavily sedated or ventilated patients, today no operating room goes without the device. His original three-function analyzer resides in the Smithsonian as part of an exhibit on the conquest of pain.

Discovering and Exploring the Brain’s Carbon Dioxide Sensor

Over the years, the Severinghaus lab became a virtual petri dish for leading researchers and important research. Internist Robert Mitchell joined the lab in 1958 and would share the space for the next thirty-two years.

1978

Robert Willenkin
Director, Resident Education, 1974
Director, Medical Student Clerkship, 1975

George Gregory
Director, Pediatric Anesthesia, 1975

Phillipa Newfield
Director, Neuroanesthesia, 1977

William K. Hamilton
Chief of Medical Staff, UCSF Medical Center, 1978

CPAP for Neonatal Respiratory Distress Syndrome
George Gregory
(Kitterman JH, Phibbs RH, Tooley WH, Hamilton WK)

1st Stuart C. Cullen Visiting Professor (Robert Dripps) and Annual Dinner
Robert Dripps

Pharmacology of Neuromuscular Blockade and Reversal
Ronald D. Miller
Mitchell’s greatest contribution was his discovery, with Hans Loeschke, of the medullary area that regulates blood PCO2, keeping spinal fluid pH constant. Today, when patients with conditions like COPD have abnormal CO2 levels, the results are understood in the context of Mitchell’s chemoreceptors.

That finding also “promised to explain a physiologic mystery,” says Severinghaus. “Why is it that people acclimatized to high altitude continue to over-breathe for days after descending?”

To answer that question, Severinghaus, Mitchell and two colleagues piled in a car and made their way to UC’s Barcroft Lab in the White Mountain range, east of the Sierras. They lugged a blood-gas analyzer up there and volunteered to have their own spinal fluid tapped. What they found was the first confirmation that rapid changes of cerebrospinal fluid acid-base explain the mysteries of acclimatization.

The Big MAC

Ted Eger first became interested in the uptake and distribution of inhaled anesthetics after hearing a talk by John Severinghaus when both were still at Iowa. He spent an hour afterwards arguing with Severinghaus, telling him he surely was wrong (he wasn’t). Later, during a stint in the Army, Eger devised a handwritten iterative equation on how anesthetics move into the lungs and tissues of the body. Anxious to continue his work in this area, in 1960 he arrived at UCSF to become a fellow in the Severinghaus lab.

At the time, various drug companies were competing to improve upon halothane, which had revolutionized anesthesia. One day in Severinghaus’s small, cramped lab overflowing with experiments of different kinds, Severinghaus handed Eger a bottle of something called halopropane. “He asked me to find out if it was any good,” says Eger. “And when I asked him how, exactly, he shrugged and told me I would figure it out.”

That bottle of halopropane would prove useless as an anesthetic, but it was the perfect vehicle for Eger to learn how to compare one anesthetic to another. This led to his discovery of minimum alveolar concentration (MAC). In parallel, he enlarged his research on uptake and distribution. The work on MAC and pharmacokinetics, which continues to this day, is unparalleled in its contribution to understanding inhaled anesthetics’ effect on all aspects of human physiology: breathing, circulation, cerebral function, neuromuscular control, and kidney and liver well-being. It is Eger’s work that enables clinicians to understand how much anesthesia is required to safely do the job.
When Stuart Cullen moved from anesthesia to become Dean of the UCSF School of Medicine, he recruited the same man who had replaced him at Iowa to take his place at the UCSF Department of Anesthesia. William “Bill” Hamilton proved to be a wise choice.

THE Hamilton Years 1967-1983

When he arrived at UCSF, Hamilton understood what a powerful jump start Cullen (and Comroe) had provided to the department and to the entire School of Medicine. In just ten short years, as the specialty of anesthesia grew, UCSF had begun a parallel ascent to the nation’s top tier of anesthesia programs. Cullen’s support for research efforts were a major factor, and under Hamilton’s leadership the research firsts kept coming and the money kept flowing. Hamilton believed that the next step was to enhance the department’s clinical work and its educational offerings. Over the next 16 years, he improved operating room coverage, negotiated a department agreement that balanced the needs of clinicians and researchers and, with the help of Sol Shnider, established a very close relationship with the department of obstetrics. His charm, influence in the field, and startling intelligence also proved remarkably effective at attracting top-notch talent and at placing people on projects and collaborations that would yield important advances. Perhaps most important, at a time when newly established ICUs were not...
Timeline of Sentinel Contributions

1984

Chairs, Chiefs, and Directors

Ronald D. Miller
Chair, 1984

Mark Rosen
Director, PACU, 1984

Jerome Strong
Director, Medical Student Clerkship, 1984
dramatic and immediate responses, but the results weren’t maintainable for more than a few hours. It never occurred to us that oxygen could be the cause.” When he arrived at UCSF, however, he found the ideal person to solve the problem.

At the time, George Gregory was in his last year of residency, and Hamilton put him to work on devising a treatment for hyaline membrane disease. “He was willing, probably because George isn’t happy unless he’s underpaid, underfed, and overworked,” says Hamilton. Working in part from findings by a group in Boston about oxygen toxicity, Gregory – whose commitment to pediatric anesthesia is legendary – confirmed that oxygen toxicity was real and soon discovered that if you increased airway pressure with 30 percent oxygen, you could keep the airways open without harming the lungs. The result was Continuous Positive Airway Pressure (CPAP), which has saved the lives of countless children in respiratory distress.

Gregory would go on to write the definitive text on pediatric anesthesia and pediatric intensive care and is today recognized as among the foremost authorities on pediatric anesthesia in the world.

Towards the Safe Use of Neuromuscular Blockade

One day after returning to UCSF from a tour as a battlefield physician in Vietnam, Ron Miller observed Ted Eger studying the effect of isoflurane in human volunteers. The two men spoke, and “I started monitoring neuromuscular function in those volunteers. From there the work on the interaction of volatile

M&M with William K. Hamilton, MD
anesthetics and muscle relaxants evolved,” says Miller, who had returned from Vietnam thinking he would continue doing seminal research he’d begun there on massive blood transfusions.

Over the next thirty years, Miller and the many talented residents he would attract played a central role in understanding the pharmacokinetics and dynamics of muscle relaxants and their antagonists. It’s an understanding critical to performing safe anesthesia, especially today when hospitals are doing procedures on ever sicker patients.

One of the most powerful drivers of this work was the recognition that with the advent of kidney transplants in the 1970’s, there was an increase in post-operative paralysis. This led Miller to work with a researcher at Columbia University (Matteo) who had developed a radio-immunoassay for curare. With the help of Matteo’s Columbia lab, Miller conducted one of the first kinetic studies to define how curare was eliminated.

Bill Hamilton then encouraged Miller to attend a meeting in London where key players who were synthesizing new and better muscle relaxants – and a group from The Netherlands that had developed a new assay for measuring pancuronium – would also be attending. Miller’s subsequent one-year sabbatical enabled him to conduct kinetic studies with the Holland group, and begin a long-term collaboration with a Scottish chemist, David Savage, who synthesized over half of the emerging drugs in the ‘70’s and ‘80’s. That year may also have contributed to Miller’s inadvertent interlude as an international “drug smuggler.”

“I recall getting on an airplane with a plastic bag that contained vecuronium (without revealing he had it); it was the first time that drug was brought into the US and it ended up being the dominant muscle relaxant in the world for many years,” says Miller.

Through the late ‘70’s and early ‘80’s Miller published numerous pieces, including some on the original assays he developed in collaboration with Neal Castagnoli at the School of Pharmacy. These assays enabled physicians to measure not just the concentrations of muscle relaxants in the blood, but also their metabolites; they also helped UCSF become the world’s analytical leader in the kinetics of muscle relaxants.

Eventually, Miller was joined in this work by James Caldwell, who arrived from Scotland in 1986 to do a one-year fellowship; he has remained at UCSF ever since and has been instrumental in facilitating the breadth and depth of clinical research on muscle relaxants.

“The modeling we did here helped to explain the areas where you might get into trouble in the ICU, where the drugs can accumulate over days and weeks,” says Caldwell. The group’s lead article in the New England Journal of Medicine, with Miller as principal author, was in large part responsible for reductions in the inappropriate use of these drugs in the intensive care setting.
When Dick Barber arrived in San Francisco in 1967, the anesthesia faculty at San Francisco General Hospital (SFGH) "was a small, congenial group of three: Earnest P. Guy, Robert Hudson Smith, and myself," says Barber. "The eight operating rooms were without piped gases or vacuum. Huge ‘G’ cylinders of nitrous oxide and oxygen were mounted on the backside of the anesthesia machines."

It was a busy time. SFGH was the only level one trauma center for the city, so anesthesia and all surgical specialties were in house 24 hours a day, seven days a week, 365 days a year. "We were all so busy with too many patients for too few faculty, residents and outdated equipment to appreciate the steady increases in staffing, equipment, and general support from the city which culminated in the mid ’70’s with the opening of the superbly equipped, brand new multi-million dollar hospital we so badly needed," says Barber. The new hospital enabled Barber and his colleagues to continue their critically important work for a mostly underserved population.

One interesting note was that Guy, who was chief at SFGH during much of this time, had such respect for his residents that he often consulted with them about the in-progress building plans. Ron Miller recalls that it was during one such consultation that residents suggested the elevators be made bigger so as to make it easier to
Ernie Guy takes apart a Bird Mark 7 to teach Terry Vitez and Mike Baker its function

transport patients from floor to floor. The change was made – and has been duly appreciated by clinical staff ever since. “When you look at the wide elevators at San Francisco General, just remember why they were built so wide: Dr. Guy and the residents in the late ’60s,” says Miller.

There were many lives saved and many rewards in Barber’s 12-year stay at SFGH (“the very best of my professional life,” he says), but one reward was quite unexpected. In 1969, the ICU head nurse called Barber up to Ward 34 where a film team was doing a “Code Blue scene” for the Steve McQueen movie, Bullitt. At first dismissive of leaving his clinical duties for show business, Barber eventually relented. He spent the next few days working with the Hollywood stars, speaking a few lines, and joining the Screen Actors Guild. “It was a good movie despite my total lack of acting talent,” says Barber. “I didn’t quit my day job.”

On the VA

Barrie Fairley represents one of the most important recruiting coups during the Hamilton era. Originally from the U.K., Fairley was a true critical care pioneer; in the 1950s and 1960s, he had instituted Canada’s first interdisciplinary respiratory failure units, the precursor to today’s critical care units.

His meeting with Hamilton happened quite by chance. The two men shared a research and clinical interest in respiratory inadequacy. At a New England meeting where Hamilton was scheduled to speak, Fairley appeared as an unscheduled replacement speaker. Hamilton wasted no time in recruiting him.

Fairley arrived at UCSF in early 1969, but had yet to obtain a California license. Knowing that Fairley could practice on federal territory and that UCSF would be taking over the anesthesia service at the San Francisco Veteran’s Administration Hospital, Hamilton made Fairley that facility’s first UCSF chief.

The department’s influence at the VA grew quickly under Fairley: it took over intensive care, and for the first time placed residents there who quickly established themselves as the in-house on-call physicians. Fairley also set the foundations for a VA research program in anesthesia. Later, after a year at the Moffit Hospital, he would become chief at San Francisco General for twelve years and was appointed Associate Dean at SFGH before assuming the chair at Stanford University in 1985.
The Miller Years
1983–present

After a 10 month international search, Ron Miller took over from Bill Hamilton (and interim chair Sol Shnider) in 1984 with an enormous sense of responsibility to make sure the department stayed at the forefront of the profession. To do so in a modern era filled with increasing regulation and intense competition, Miller implemented a broad and strategic approach. The success of that approach speaks for itself, as the UCSF Department of Anesthesia and Perioperative Care has become one of the largest and most prestigious in the world.

Early on Miller called for an outside evaluation of the research program to ensure UCSF would stay ahead of the curve. He aligned the department with the hospital’s goals, and built on the strong and respectful working relationship with surgery that Hamilton established. Miller also oversaw a complete revamping of the department’s finances, developing rigorous systems for professional fee billing that are still in place today.

In addition, he has been tirelessly responsive to external change. As more anesthesia sub-specialties have emerged, in...
Welcome Residents, 1992

the tradition of his predecessors Miller has continued to recruit the best faculty and fellows in the world to establish those sub-specialties at UCSF. As changes in health care financing and delivery fostered changes in hospital stays, Miller oversaw the establishment of adult and pediatric pre-operative clinics, under the department’s watchful eye.

Finally, even when there were brief downturns in the number of applicants for anesthesia residencies nationwide, UCSF continued to attract the most, the best, and the brightest. This included what was really the first wave of prominent woman anesthesiologists, many of whom remain leaders in their field such as Pamela Palmer (leading international authority in Pain Management), Kathryn Rouine-Rapp (Director of the UCSF Prepare Clinic), Isobel Russell (Director of Adult and Pediatric Cardiac Surgery), Jeanine Wiener-Kronish (Chairperson of Anesthesia at Massachusetts General Hospital), and Sue Carlisle (Associate Dean of San Francisco General Hospital).

A Fundamentally Better Way to Monitor Patients

One day in the early 1990’s, in the Moffit OR suite, Ron Miller rushed down the hall and said to his colleague Michael Cahalan: “We’re losing this patient; come take a look.”

When they arrived, Miller showed Cahalan a septic woman whose heart rate was 150 beats per minute and systolic arterial blood pressure was 50 mmHg. Miller explained that they had already given the woman appropriate amounts of blood and still did not know whether the problem was hypo- or hypervolemia. Cahalan, an expert in transesophageal echocardiography (TEE), put a scope down the woman’s throat, revealing a nearly empty heart. After they administered the appropriate fluids intravenously, arterial blood pressure increased and the heart slowed. The procedure, known as rescue echo, is rapidly becoming the standard for life-threatening hypotension. It also was the culmination of a clinical research path that Cahalan had begun a decade or so before.

In 1981, Cahalan was an assistant professor working in the Eger lab when Bill Hamilton asked him to meet with a new cardiology...
“We slipped the scope down and suddenly, in real time, saw a moving image of all four chambers of the heart. My jaw hit the ground and I knew right away this was a fundamentally better way to monitor patients.”

–Michael Cahalan, MD
The Importance of Being Normal (thermic)

When he was a resident at UCLA in the early 1980s, Daniel Sessler found himself leafing through a smattering of about thirty, mostly ignored articles on temperature regulation during surgery. The consensus was that perioperative temperature regulation was well understood and of little consequence except for postoperative shivering. Sessler didn’t believe the system was so simple and began a series of several hundred studies, mostly conducted during his fifteen years as a faculty member in the UCSF Department of Anesthesia.

Sessler’s team, today known as the Outcomes Research Consortium, initially focused on temperature regulation. They showed that general anesthetics profoundly impair thermoregulation, but do not completely obliterate control. Instead, control re-emerges when patients become sufficiently hypothermic. The team next addressed heat balance and showed that hypothermia develops with a characteristic three-phase pattern, with each phase having a different cause.

The third major phase of the studies evaluated the consequences of mild perioperative hypothermia. In a series of major multi-center outcome trials, Sessler and his team proved that even just a couple of degrees of hypothermia — as is typical in unwarmed surgical patients — triples the risk of surgical wound infection, significantly increases blood loss and transfusion requirement, prolongs recovery, and lengthens hospital duration.

“Once we started looking we realized prevailing wisdom was wrong and the consequences of hypothermia were much more severe than anyone realized,” says Sessler. “Consequently, it’s now the standard of care to keep surgical patients normothermic.”

–Daniel Sessler, MD

“Once we started looking we realized prevailing wisdom was wrong and the consequences of hypothermia were much more severe than anyone realized. Consequently, it’s now the standard of care to keep surgical patients normothermic.”

–Daniel Sessler, MD

Timeline of Sentinel Contributions

Difficult Airway Management Workshop
Cedric Bainton

Management of Pulmonary Pseudomonas Infection
Jeanine Wiener-Kronish

1993

Chairs, Chiefs, and Directors

Toni Magorian
Director, Medical Student Clerkship, 1993

Sandy Weitz
Director, Acute Pain Service, 1993

Mark Rosen
Director, Obstetrical Anesthesia, 1994
The Studies in Perioperative Ischemia That Changed Cardiology

In the 1990’s, a group of researchers at the San Francisco Veteran’s Administration Hospital led by Dennis Mangano recognized that anesthesia research could benefit from the type of large, multi-center clinical trials done by cardiologists. “We began with an epidemiological study that found old, sick people did poorly in surgery. We then searched for risk factors we could modulate,” says Art Wallace, part of the original team.

A subsequent study found that keeping people unconscious post surgery could reduce risks, but was expensive and problematic. “The question then became: how can we deliver the hemodynamic stability of an anesthetic without making people unconscious?” says Wallace.

In a large, clinical trial, the group (now dubbed McSPI for Multi-Centered Study of Perioperative Ischemia), moved on to test 17 different drugs – brand names and generics – from beta blockers to Alpha 2 agonists and anesthetic agents. In landmark piece of research they published in the New England Journal of Medicine, McSPI found that the generic beta blocker atenolol was the most effective at reducing the risk of both myocardial ischemia and mortality.

Though the work had – and has – its skeptics, shortly after implementing their beta blockade protocols with patients at the VA, the facility’s score from the National Surgical Quality Improvement Project (NSQIP) went from 1.0 to 0.6. Wallace soon found himself being invited to various hospitals to talk about or set up beta blockade programs. Today, more than a hundred hospitals across the country have adopted the McSPI protocols. Perioperative beta blockade in select patients has become a level one standard of care.

“The question then became: how can we deliver the hemodynamic stability of an anesthetic without making people unconscious?”

–Art Wallace, MD
Fighting Bioterrorism

Botulinum neurotoxins (BoNTs) are the most poisonous substance known to man. Though actual botulism cases are rare, they are widely feared as a possible biological weapon because of their potency and the long-lasting paralysis they cause.

In 1993, the only known treatments were antibodies derived from exposed hospital workers (hard to come by) and antitoxins derived from horses that have a very high incidence of serious side effects. At the time, the Department of Defense (DOD) was interested enough in having an antidote on hand to provide some modest funding towards discovering a safer antitoxin. With a push from one of his colleagues—and because he was expert in producing antibodies—Jim Marks began almost casually searching for a safer antidote for botulism.

In particular, he began developing monoclonal antibodies for the most common BoNTs: types A, B, and E. It was complicated work, for the antibodies not only had to be potent enough to cope with the extreme toxicity, but they needed to address multiple subtypes within each of the A, B, and E types. Moreover, unlike many diseases, single antibodies did not significantly neutralize BoNTs in vivo. “It’s impossible to achieve the required potency unless you use a combination of antibodies that bind to the toxins simultaneously in different places,” says Marks.

Then 9/11 happened. With a whole new sense of urgency and a dramatic increase in support from the DOD, the work in the Marks lab accelerated.

His team has now produced a unique combination of monoclonal

Timeline of Sentinel Contributions

1995

Chairs, Chiefs, and Directors

James Caldwell
Director, Neuanaesthesia, 1995
Perioperative Medical Director, 1999

James Marks
Director, ICU, SFGH, 1996

Jeanine Wiener-Kronish
Director, Preoperative (Prepare) Clinic, 1996

Vecuronium and Prolonged Paralysis in the ICU
Veronica Segredo
(Caldwell J, Matthay M, Miller RD)

Neuroprotection from Hypoxia
Philip Bickler
antibodies for type A, B, and E BoNTs. Each type-specific antibody combination binds toxin simultaneously in three places and engages in a novel clearance mechanism that completely removes the BoNT in one circulatory path. The antibodies can be used for treating acute botulism or as a vaccine providing protective levels for between six and twelve months. The group's findings on combining antibodies to increase potency could be broadly applicable to a range of pathogens and toxins. Working with a private company funded by the NIH, Marks is now scaling up to help manufacture an antidote to treat A, B, and E botulism for clinical trials beginning in 2009.

We’re Physicians First

One of the hallmarks of the Department of Anesthesia has been its collective ability to not just advance the discipline itself – a critically important pursuit – but to advance the entire practice of medicine. Recruiting William Young to UCSF in 2000 furthered that role.

In the mid 1980’s, Young was at Columbia University when he became interested in the hemodynamics of how the brain functioned during and after cerebrovascular surgery. With strong mentorship by Columbia’s chiefs of neurosurgery and stroke neurology, Young and an interdisciplinary team would study everything from the formation and regulation of blood vessel growth to the epidemiology, natural history, treatment outcomes, and genetics of cerebrovascular disease.

In 2000, attracted by “opportunities to broaden the breadth and depth of the science,” Young and two of his fellows (including current faculty member Tomoki Hashimoto) joined the UCSF Department of Anesthesia and set up the Center for Cerebrovascular Research. His was one of the few large research groups to be recruited from outside of UCSF. The center focuses on hemorrhagic diseases of the brain, especially intracranial aneurysms and brain arteriovenous malformations (AVMs). There are a wide range of specialties associated with the center, and eight of the ten core
members are faculty in the Department of Anesthesia.
Among its accomplishments, the center was the first to associate human genetic variation with non-inherited AVMs and to establish a link between common inflammatory processes and disease progression, including hemorrhage. “There are two main clinical implications for our findings,” says Young. “First, we will be able to develop biomarkers that can help with prognostication and risk stratification – to rationally answer the questions: Who will benefit from intervention and who won’t? And, second, as we learn more about the molecular mechanisms we can develop more effective therapies…I think we’re well on our way to developing pharmacological or gene therapies that can stabilize the blood vessels to decrease the risk of spontaneous rupture.”

“Anesthesiologists are physicians first,” continues Young. “Solving some of the critical questions and problems in medicine involves tackling disease causes and cures; such work requires interdisciplinary study, to which anesthesiologists, as perioperative physicians, bring a unique and important perspective. What each of us do - this defines anesthesiology. Ultimately, the current status of our specialty should be an effect – not a cause – of the questions we ask. And our reach should exceed our grasp.”

—William Young, MD
An Illustrious Past Prepares the Department for a Challenging Future

By Ronald D. Miller, MD

“Today, there is an increasing focus on clinical, translational, and basic science research in the total perioperative period, including preoperative evaluation, intraoperative anesthesia, and critical care and pain medicine.”

– Ronald D. Miller, MD

As this history makes clear, for fifty years UCSF has been a national and international leader in academic anesthesia. We are positioned well to assume an even more prominent role in the years ahead as academic medicine becomes more sophisticated and more central to the delivery of safe, high quality care.

Obviously, the gifted individuals who have staffed and led this department have been the central factor in our success. Yet it’s also important to remember that we have not accomplished all of this on our own. We have always depended upon the rest of the UCSF community – the wealth of talented people across this campus, from brilliant basic scientists to the finest clinicians in the world. Whether it was the CVRI, the Center for Cerebrovascular Research, or any of the other fine centers and initiatives at UCSF, anesthesia’s ability to work closely with other specialties and make our unique contribution has been critically important. In the years ahead, we must expand this role. To do so will be essential not just for our own success, but also the success of this entire campus.

Consider such initiatives as the new medical center at Mission Bay; a new orthopaedic institute opening in 2009; and the 2009 opening of a new stem cell research building at the UCSF Parnassus campus, with construction beginning in late 2008. All of these developments offer opportunities for groundbreaking collaborative work, from bench research through clinical innovation. We must seize these opportunities.

We have been successful for half a century through a combination of outstanding faculty, the power of the UCSF campus, and stable and visionary leadership. In addition to the examples set by Stu Cullen and Bill Hamilton, I distinctly recall the way Rudy Schmidt – who was dean of the medical school when I became chair – constantly pushed me to make us a better department. I can’t say I liked it at the time, but in retrospect it was an enormously helpful approach. In that spirit, I challenge those of you who will lead over the next fifty years to engage fully with this campus, to exert our leadership, and to ensure that the tradition highlighted herein will continue – and grow.

Beta Blockade to Reduce Perioperative Mortality
Dennis Mangano
(Wallace A)

John Severinghaus Anesthesia Laboratory Opened
Radiometer

2000

Jeffrey Katz
Director, Clinical Anesthesia, 2000

Linda Liu
Director, Critical Care Fellowship, 2000

Renee Navarro
Perioperative Director, SFGH, 2000

Dorre Nicholau
Director, PACU, 2000
2008 Awards and Honors

Helge Eilers, MD & Mark Schumacher, MD, PhD
Extramural Award:
First Place, 2008 IARS Kosaka Abstract Session, for:
Chu C, Schumacher MA, Bunnett NW, Eilers H.
Inhaled Anesthetics Activate TRPA1 Heterologously
Expressed in HEK Cells.

Ronald D. Miller, MD, Chairman
Extramural Honors:
American Society of Anesthesiologists Distinguished
Service Award 2008
American Society of Anesthesiologists Emery A.
Rovenstine Lecturer 2008

John Severinghaus, MD, Professor Emeritus
Extramural Honor:
American Society of Anesthesiologists Eponymous
Lecture, “John W. Severinghaus Lecture on Transla-
tional Science” established 2008

Muhammad Shaikh, MD
Extramural Appointment:
NIH Grant Reviewer, Bioengineering Research
Group, 2007
NIH Grant Reviewer, NIH Fellowship (F-31; F-32)
Biomedical Engineering and Imaging Studies, 2008

Incentive-Productivity-Based
Compensation System Developed
Ronald D. Miller

Institute of Medicine Elected Members

The Institute of Medicine of the National Academies
was chartered in 1970 to provide the nation with
science-based advice on matters of biomedical
science, medicine and health. The Institute’s members,
elected on the basis of their professional achievement
and commitment to service, serve without compensa-
tion in the conduct of studies and other activities on
matters of significance to health. Election to active
membership is both an honor and a commitment to
serve in Institute affairs.

Ronald D. Miller, MD 1998
Jeanine Wiener-Kronish, MD 2002
James Marks, MD, PhD 2006

UCSF Haile T. Debas
Academy of Medical Educators

The Haile T. Debas Academy of Medical Educators is
dedicated to creating an environment that enhances
the status of teachers of medical students at UCSF,
promotes and rewards teaching excellence, fosters
curricular innovation, and encourages scholarship in
medical education. Members of The Haile T. Debas
Academy of Medical Educators actively participate in
the work the Academy performs in pursuit of its goal of
promoting educational excellence in the UCSF
community. Because of the rigor of the selection
process, Academy membership is known to be a sign
of outstanding performance; academy members are
recognized as highly accomplished educators.

Martin Bogetz, MD 2001
Manuel Pardo, MD 2001
Harriet Hopf, MD 2004
Marek Brzezinski 2007

2000

Timeline of Sentinel
Contributions

John Severinghaus Research Fellowship
underwritten by Radiometer

2000 Awards and Honors

Isobel Russell
Director, Cardiac Anesthesia, 2000

Thomas Shaughnessy
Director, Respiratory Therapy,
2000

Dan Swangard
Director, Preoperative (Prepare) Clinic,
2000

UCSF DEPARTMENT OF ANESTHESIA AND PERIOPERATIVE CARE
American Society of Anesthesiologists Awards

ASA Award for Excellence in Research
This award recognizes outstanding research that has had or is likely to have a major impact on the practice of anesthesia and/or research representing a mature and sustained contribution to the extension and advancement of the science of anesthesiology.

John W. Severinhaus, MD 1986
Edmond I. Eger, MD 1989
Daniel I. Sessler, MD 2002

ASA Distinguished Service Award
Annually since 1945, ASA has determined whether to bestow its most prestigious honor, the Distinguished Service Award (DSA), on a member for outstanding clinical, educational or scientific achievement or for contributions to the specialty and/or exemplary service to ASA. The DSA is presented by the president during the ASA Annual Meeting at the time of the Emery A. Rovenstine Memorial Lecture to the individual selected by the House of Delegates at the previous year’s Annual Meeting. The award is the ASA’s highest tribute paid to an anesthesiologist for meritorious service and achievement. This will be the first year in which the Rovenstine Lecturer is also bestowed with the Distinguished Service Award.

Stuart C. Cullen, MD 1964
William K. Hamilton, MD 1986
Edmond I. Eger, MD 1991
Robert K. Stoelting, MD 2003
Ronald D. Miller, MD 2008

ASA Annual Emery A. Rovenstine Memorial Lecture
The Rovenstine Lecture is a longstanding high point of the Annual Meeting and honors Dr. Rovenstine, the distinguished past chair of the Department of Anesthesiology at New York University Medical Center and Director of Anesthesiology at Bellevue Hospital in New York City. Dr. Rovenstine was a founding member and president of the American Board of Anesthesiology, ASA president in 1943-44 and the 1957 recipient of the ASA Distinguished Service Award. Because of his seminal contributions to the specialty, especially as an administrator and educator, this prestigious lectureship was established in his name. The ASA president chooses the lecturer as part of his/her duties, and the lecture is always one of the highlights of the Annual Meeting.

William K. Hamilton, MD 1978
Ronald D. Miller, MD 2008

ASA John W. Severinghaus Lecture on Translational Science
In 2008 the ASA approved the naming of its Annual Meeting Tuesday afternoon translational research plenary session to henceforth be known as the “John W. Severinghaus Lecture on Translational Science”, one of only two eponymous lectures at their annual meeting. Dr. Severinghaus will give the inaugural lecture at the 2008 Annual Meeting.

Intraoperative TEE. An Interactive Text and Atlas
Michael Cahalan

Developer, Perioperative Cardiac Risk Reduction Program at over 100 Medical Centers
Arthur Wallace
New Anesthesia Faculty

Career Faculty

Jon Matthew Aldrich, MD
Clinical Instructor
Joined Faculty August 1, 2008
Medical School:
Stanford University School of Medicine
Palo Alto, California
Internship:
Surgery
University of California, San Francisco
Residency:
Anesthesiology
University of California, San Francisco
Fellowship:
Critical Care Medicine
University of California, San Francisco

Marla Ferschl, MD
Clinical Instructor
Joined Faculty August 1, 2008
Medical School:
University of Chicago Pritzker School of Medicine
Chicago, Illinois
Internship:
Internal Medicine
University of Chicago Pritzker School of Medicine
Chicago, Illinois
Residency:
Anesthesiology
University of California, San Francisco
Fellowship:
Critical Care Medicine
University of California, San Francisco

Judith Hellman, MD
Associate Professor in Residence
Joined Faculty August 1, 2008
Medical School:
Columbia University College of Physicians and Surgeons
New York, New York
Internship:
Internal Medicine
Oregon Health Sciences University
Portland, Oregon
Residencies:
Internal Medicine
Oregon Health Sciences University
Portland, Oregon
Anesthesiology
Massachusetts General Hospital
Boston, Massachusetts
Fellowship:
Critical Care Medicine
Massachusetts General Hospital
Boston, Massachusetts
Previous Employment:
Instructor in Anesthesia
Harvard Medical School
Boston, Massachusetts
Assistant Professor of Anesthesia
Harvard Medical School
Boston, Massachusetts

Benjamin Houseman, MD, PhD
Assistant Professor in Residence
Joined Faculty January 1, 2008
Advanced Degree:
PhD, Chemistry
University of Chicago
Chicago, Illinois
Medical School:
University of Chicago Pritzker School of Medicine
Chicago, Illinois
Internship:
Resurrection Medical Center
Chicago, Illinois
Residency:
Anesthesiology
University of California, San Francisco

Visiting Faculty

Kerstin Kolodzie, MD
Visiting Assistant Professor
Joined Faculty December 1, 2007
Medical School:
University of Hamburg
Hamburg, Germany

Timeline of Sentinel Contributions

2001

Chairs, Chiefs, and Directors

Cardiac Protection using Anesthetic Preconditioning
Brian Cason
(Hickey R)

Cloning of Capsaicin Receptor/Its Facilitation
Mark Schumacher

Michael Gropper
Director, ICU, Moffitt, 2001

Linda Liu
Director, Respiratory Therapy, 2001

Renee Navarro
Chief of Medical Staff, SFGH, 2001
Internship:
Technion-Israel Institute of Technology,
The Ruth and Bruce Rappaport Faculty of Medicine, Rambam Healthcare Campus
Haifa, Israel

Residency:
Anesthesiology
University of Hamburg,
University Medical Center Hamburg-Eppendorf
Hamburg, Germany

Previous Employment:
Attending Anesthesiologist
University of Hamburg,
University Medical Center Hamburg-Eppendorf
Hamburg, Germany

Joerg Schaeuble, MD
Visiting Assistant Professor
Joined Faculty December 1, 2007

Medical Schools:
Johann Wolfgang v. Goethe University Frankfurt, Germany
Albert Ludwigs University of Freiburg
Freiburg, Germany

Internship:
Internal Medicine & Surgery
Hospital Villingen-Schwenningen
Villingen-Schwenningen, Germany

Residencies:
Anesthesiology
Hospital of Waldshut
Waldshut, Germany

Anesthesiology
District Hospital
Tafers, Switzerland

Internal Medicine
District Hospital
Niederbipp, Switzerland

Anesthesiology
Cantonal Hospital of St. Gallen
St. Gallen, Switzerland

Fellowship:
Emergency Medicine
Cantonal Hospital of St. Gallen
St. Gallen, Switzerland

Previous Employment:
ICU Attending
Cantonal Hospital of St. Gallen
St. Gallen, Switzerland

Attending Anesthesiologist
University Hospital Basel
Basel, Switzerland

Academic Department
Chairs from UCSF

Bernard Brandstater
American University of Beirut; Loma Linda University

Michael Cahalan
University of Utah

David Cullen
St. Elizabeth’s Medical Center and Tufts University

Bruce Cullen
University of California, Irvine

Gerald Edelist
University of Toronto

John Eisele
University of California, Davis

H. Barrie Fairley
Stanford University

Greg Kronberg
Wilford Hall Medical Center

C. Philip Larson
Stanford University

Ronald D. Miller
UCSF Anesthesia and Perioperative Care

Musa Muallem
American University of Beruit Medical Center

Nancy Nussmeier
Syracuse University

Richard Palahniuk
University of Manitoba; University of Minnesota

Michael Roizen
University of Chicago; Cleveland Clinic

Stephen Rupp
Virginia Mason Medical Center

Lawrence Saidman
University of California, San Diego

David Schwartz
University of Illinois

Donald Stanski
Stanford University

Wendell Stevens
University of Iowa; University of Oregon

Robert Stoelting
Indiana University

Gale Thompson
Virginia Mason Medical Center

John Wade
University of Manitoba

Jeanine Weiner-Kronish
Massachusetts General Hospital

Paul White
University of Texas Southwestern Medical Center

Incentive-Productivity-Based Compensation System
Implemented
John Feiner

Improving Wound Healing Outcomes
through Increased Oxygen Delivery
Harriet Hopf

Patricia Roth
Director, Anesthesia Workroom, 2001

William Shapiro
Chief, Mount Zion, 2001

Julin Tang
Director, ICU, SFGH, 2001

William Young
James P. Livingston Endowed Chair in Anesthesia, 2001
## UCSF Anesthesia Residents

### Class of 2011

<table>
<thead>
<tr>
<th>Name</th>
<th>Medical School</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daniel Abelson, MD</td>
<td>University of California, San Francisco, School of Medicine</td>
</tr>
<tr>
<td>Michele Arnold, MD</td>
<td>University of California, San Francisco, School of Medicine</td>
</tr>
<tr>
<td>Daniel Chiem, MD</td>
<td>University of California, San Diego, School of Medicine</td>
</tr>
<tr>
<td>Joshua Cohen, MD</td>
<td>University of Illinois at Chicago College of Medicine</td>
</tr>
<tr>
<td>Robert Ellis, MD</td>
<td>Virginia Commonwealth University School of Medicine</td>
</tr>
<tr>
<td>Robert Feinglass, MD</td>
<td>University of California, San Francisco, School of Medicine</td>
</tr>
<tr>
<td>Madina Gerasimov, MD</td>
<td>New York University School of Medicine</td>
</tr>
<tr>
<td>Amy Gin, MD</td>
<td>New York Medical College</td>
</tr>
<tr>
<td>Roger Hong, MD</td>
<td>Joan &amp; Sanford I. Weill Medical College of Cornell University</td>
</tr>
<tr>
<td>Cristina Inglis-Arkell, MD</td>
<td>University of California, San Diego, School of Medicine</td>
</tr>
<tr>
<td>April Jung, MD</td>
<td>Drexel University of Medicine</td>
</tr>
<tr>
<td>James Kim, MD</td>
<td>Georgetown University School of Medicine</td>
</tr>
<tr>
<td>So Young Kim, MD</td>
<td>Columbia University College of Physicians and Surgeons</td>
</tr>
<tr>
<td>Tse-Sun Ku, MD</td>
<td>University of California, San Francisco, School of Medicine</td>
</tr>
<tr>
<td>Sara LaFleur, MD</td>
<td>Tufts University School of Medicine</td>
</tr>
<tr>
<td>Sarah Langley, MD</td>
<td>Stanford University School of Medicine</td>
</tr>
<tr>
<td>Meagan Lansdale, MD</td>
<td>Stanford University School of Medicine</td>
</tr>
<tr>
<td>Anuj Malhotra, MD</td>
<td>Duke University School of Medicine</td>
</tr>
<tr>
<td>Jemiel Nejim, MD</td>
<td>University of California, Los Angeles, David Geffen School of Medicine</td>
</tr>
<tr>
<td>Swetha Pakala, MD</td>
<td>University of California, San Francisco, School of Medicine</td>
</tr>
<tr>
<td>Jacob Pletcher, MD</td>
<td>Indiana University School of Medicine</td>
</tr>
<tr>
<td>Anna Rabinowitz, MD</td>
<td>University of Pennsylvania School of Medicine</td>
</tr>
<tr>
<td>John Turnbull, MD</td>
<td>University of California, San Francisco, School of Medicine</td>
</tr>
<tr>
<td>Adrienne Valesano, MD</td>
<td>Georgetown University School of Medicine</td>
</tr>
<tr>
<td>Elaine Yang, MD</td>
<td>New York University School of Medicine</td>
</tr>
<tr>
<td>Afshin Zadfar, MD</td>
<td>State University of New York at Buffalo, School of Medicine and Biological Sciences</td>
</tr>
</tbody>
</table>

### Chairs, Chiefs, and Directors

- **2002**
  - **Daniel Burkhardt**
    - Director, Acute Pain Service, 2002
  - **Errol Lobo**
    - Director, Vascular Anesthesia, 2002
  - **Martin London**
    - Chair, UCSF Committee on Library, 2002

### Timeline of Sentinel Contributions

#### 2002

- **Profound Isovolemic Hemodilution**
  - Richard Weiskopf
    - (Feiner J, Lieberman J, Hopf H, Leung J, Kelly S)

- **ARDSnet Trial Published**
  - Michael Matthay
    - (Gropper M)
Stuart C. Cullen Award

<table>
<thead>
<tr>
<th>Name</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steven D. Jabaly, MD</td>
<td>1980</td>
</tr>
<tr>
<td>Glenn Plummer, MD</td>
<td>1981</td>
</tr>
<tr>
<td>Manuel Fernandez, MD</td>
<td>1982</td>
</tr>
<tr>
<td>Lydia Cassots, MD</td>
<td>1983</td>
</tr>
<tr>
<td>George Lampe, MD</td>
<td>1983</td>
</tr>
<tr>
<td>Brian Cason, MD</td>
<td>1984</td>
</tr>
<tr>
<td>Edward Eisler, MD</td>
<td>1985</td>
</tr>
<tr>
<td>Jeanine Wiener-Kronish, MD</td>
<td>1986</td>
</tr>
<tr>
<td>Ginger Fogert, MD</td>
<td>1987</td>
</tr>
<tr>
<td>Scott Kelley, MD</td>
<td>1989</td>
</tr>
<tr>
<td>Isabel Muhiudeen, MD, PhD</td>
<td>1989</td>
</tr>
<tr>
<td>Jaul Riaz, MD</td>
<td>1989</td>
</tr>
<tr>
<td>Amanda Sue Carlisle, MD</td>
<td>1990</td>
</tr>
<tr>
<td>John R. Feiner, MD</td>
<td>1991</td>
</tr>
<tr>
<td>Barry D. Bergouist, MD</td>
<td>1992</td>
</tr>
<tr>
<td>Erin P. Foley, MD</td>
<td>1992</td>
</tr>
<tr>
<td>Peter S. Nosé, PhD, MD</td>
<td>1992</td>
</tr>
<tr>
<td>Gretchen E. Holingsworth, MD</td>
<td>1993</td>
</tr>
<tr>
<td>Oscar Fernandez, MD</td>
<td>1993</td>
</tr>
<tr>
<td>Neil Seeley, MD</td>
<td>1994</td>
</tr>
<tr>
<td>Julie Naikao, MD</td>
<td>1994</td>
</tr>
<tr>
<td>Manuel Pardo, MD</td>
<td>1995</td>
</tr>
<tr>
<td>William Cammarano, MD</td>
<td>1996</td>
</tr>
<tr>
<td>Richard Green, MD</td>
<td>1997</td>
</tr>
<tr>
<td>Thomas Buchheit, MD</td>
<td>1998</td>
</tr>
<tr>
<td>John F. Donovan, MD</td>
<td>1999</td>
</tr>
<tr>
<td>Daniel M. Swangard, MD</td>
<td>1999</td>
</tr>
<tr>
<td>Dhanesh K. Gupta, MD</td>
<td>2000</td>
</tr>
<tr>
<td>Brian W. Hite, MD</td>
<td>2000</td>
</tr>
<tr>
<td>James Mac Sams, MD</td>
<td>2001</td>
</tr>
<tr>
<td>Donal P. Ryan, MD</td>
<td>2002</td>
</tr>
<tr>
<td>Lundy J. Campbell, MD</td>
<td>2003</td>
</tr>
<tr>
<td>Grete H. Porteous, MD</td>
<td>2004</td>
</tr>
<tr>
<td>Leonard Razzu Almond, MD</td>
<td>2005</td>
</tr>
<tr>
<td>Patrick M. Fujimoto, MD</td>
<td>2006</td>
</tr>
<tr>
<td>Jon Matthew Aldrich, MD</td>
<td>2007</td>
</tr>
<tr>
<td>Scott Finkelstein, MD</td>
<td>2008</td>
</tr>
</tbody>
</table>

William K. Hamilton Award

<table>
<thead>
<tr>
<th>Name</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Robert F. Hickey, MD</td>
<td>1973</td>
</tr>
<tr>
<td>Robert L. Willenkin, MD</td>
<td>1974</td>
</tr>
<tr>
<td>Robert H. Smith, MD</td>
<td>1975</td>
</tr>
<tr>
<td>Wendell C. Stevens, MD</td>
<td>1976</td>
</tr>
<tr>
<td>Marilyn Hutter, MD</td>
<td>1977</td>
</tr>
<tr>
<td>A. Roderick Forbes, MB</td>
<td>1978</td>
</tr>
<tr>
<td>Dennis T. Mangano, PhD, MD</td>
<td>1979</td>
</tr>
<tr>
<td>Neal H. Cohen, MD, MPH</td>
<td>1980</td>
</tr>
<tr>
<td>H. Barrie Fairley, MB, BS</td>
<td>1980</td>
</tr>
<tr>
<td>Cedric R. Bainton, MD</td>
<td>1981</td>
</tr>
<tr>
<td>Sol M. Shnider, MD</td>
<td>1982</td>
</tr>
<tr>
<td>Scott Robinson, MD</td>
<td>1983</td>
</tr>
<tr>
<td>H. Barrie Fairley, MB, BS</td>
<td>1984</td>
</tr>
<tr>
<td>Michael Cahalan, MD</td>
<td>1985</td>
</tr>
<tr>
<td>Stephen Rupp, MD</td>
<td>1986</td>
</tr>
<tr>
<td>Cedric R. Bainton, MD</td>
<td>1987</td>
</tr>
<tr>
<td>Donald Koblin, MD</td>
<td>1988</td>
</tr>
<tr>
<td>George A. Gregory, MD</td>
<td>1989</td>
</tr>
<tr>
<td>Maurice Zwass, MD</td>
<td>1990</td>
</tr>
<tr>
<td>Isabel A. Muhiudeen, MD, PhD</td>
<td>1991</td>
</tr>
<tr>
<td>George A. Gregory, MD</td>
<td>1992</td>
</tr>
<tr>
<td>Isabel A. Muhiudeen, MD, PhD</td>
<td>1992</td>
</tr>
<tr>
<td>Anil De Silva, MD</td>
<td>1993</td>
</tr>
<tr>
<td>Anil De Silva, MD</td>
<td>1994</td>
</tr>
<tr>
<td>Robert W. Allen, MD</td>
<td>1995</td>
</tr>
<tr>
<td>James E. Caldwell, MB, ChB</td>
<td>1996</td>
</tr>
<tr>
<td>William Cammarano, MD</td>
<td>1997</td>
</tr>
<tr>
<td>William Cammarano, MD</td>
<td>1998</td>
</tr>
<tr>
<td>Joan E. Howley, MD</td>
<td>1999</td>
</tr>
<tr>
<td>Kathryn Rouine-Rapp, MD</td>
<td>2000</td>
</tr>
<tr>
<td>Merlin D. Larson, MD</td>
<td>2001</td>
</tr>
<tr>
<td>Merlin D. Larson, MD</td>
<td>2002</td>
</tr>
<tr>
<td>Daniel M. Swangard, MD</td>
<td>2003</td>
</tr>
<tr>
<td>Mark Grabovac, MD</td>
<td>2004</td>
</tr>
<tr>
<td>George A. Gregory, MD</td>
<td>2005</td>
</tr>
<tr>
<td>Mark D. Rollins, PhD, MD</td>
<td>2006</td>
</tr>
<tr>
<td>Lundy J. Campbell, MD</td>
<td>2007</td>
</tr>
<tr>
<td>John Taylor, MD</td>
<td>2008</td>
</tr>
</tbody>
</table>

Anesthesia Simulator SFGH
Manuel Pardo
(Collins A)

Center for Cerebrovascular Research
William Young

2003

Jeffrey Katz
Perioperative Medical Director, 2003

Manuel Pardo
Sol M. Shnider Endowed Chair for Anesthesia Education, 2003

2004

James Brandes
Director, Orthopedic/Regional Anesthesia, 2004

A. Sue Carlise
Associate Dean, SFGH, 2004
Research Faculty Spotlight

Helen Kim, PhD
Assistant Adjunct Professor

Education and Training:
   MPH, Epidemiology, Emory University, Atlanta GA
   PhD, Epidemiology, University of Washington, Seattle, WA
   Postdoctoral Fellow, Genetic Epidemiology, University of Washington, Seattle, WA

Research Interests:
   Genetic epidemiology of cardiovascular and neurological diseases, and in particular stroke
   Epidemiology and natural history of brain vascular malformations, including AVM and aneurysms
   Functional outcome after brain injury from intracranial hemorrhage or treatment
   Linkage and association studies of complex diseases and intermediate phenotypes
   Methods for detecting and adjusting for population stratification, and evaluating interactions

Susan Lynch, PhD
Assistant Adjunct Professor

Education and Training:
   BS, Industrial Microbiology (minors in Chemistry and Biostatistics), University College, Dublin, Ireland
   PhD, Department of Microbiology, University College, Dublin, Ireland
   Postgraduate Education, Department of Microbiology and Immunology, Stanford University School of Medicine, Stanford, CA

Research Interests:
   Polymicrobial pathogenesis of respiratory diseases including, cystic fibrosis, asthma, ventilator-associated pneumonia, chronic rhinosinusitis and chronic obstructive pulmonary disease.
   Biofilm formation and virulence gene expression of the respiratory pathogen Pseudomonas aeruginosa from both Cystic Fibrosis (CF) and ICU patients
   Understanding of the response of Pseudomonas aeruginosa in a clinical setting, improve diagnosis and provide efficacious strain-specific combinatorial therapeutic options to improve patient outcome.
   Uses culture-independent tools recently developed in the field of microbial ecology together with high-throughput sequencing and statistical analysis to examine the contribution of microbial community structure and function to pathogen behavior, host response and clinical outcome.
   Development of a rapid, multi-species, culture-independent tool to improve diagnosis of respiratory infections and profile antimicrobial resistance in parallel.
   Examines therapeutic strategies in vitro and in vivo that target various virulence systems of Pseudomonas aeruginosa and uses sequential clinical isolates to study how micro- and macro-evolution affects the physiology of this opportunistic pathogen.

Timeline of Sentinel Contributions

Monoclonal Antibody for Treatment of Botulinum Neurotoxins
   James Marks

NIH Training Grant
   Jeanine Wiener-Kronish

2004

Chairs, Chiefs, and Directors

Andrew Gray
Director, Regional Anesthesia, SFGH, 2004

Jeremy Lieberman
Director, Spine Anesthesia, 2004

Renee Navarro
Associate Dean, Academic Affairs, 2004
Ludmila Pawlikowska, PhD
Assistant Adjunct Professor
Education and Training:
Ph.D. Biomedical Sciences, UCSF
Postdoctoral training: Liver Center, Cardiovascular Research Institute and Institute for Human Genetics, UCSF
Research Interests:
Genetic studies of complex disease including brain arteriovenous malformation and subarachnoid hemorrhage
Genetic studies of human longevity and aging-related phenotypes
Admixture mapping of metabolic syndrome traits and inflammatory markers in admixed populations
Molecular genetics of inherited cholestasis

Hua Su, MD
Assistant Adjunct Professor
Education and Training:
MD, Medicine, 1982, Nanjing Medical University, Nanjing, China
MS, Histology and Embryology, 1985, Xian Medical University, Xian, China
Postdoctoral Fellow, Reproductive Physiology, 1986, Beijing Medical University, Beijing, China
Postdoctoral Fellow, Medical Genetics, 1992, University of California, San Francisco, CA
Research Interests:
Viral vector mediated targeted gene expression
Gene and cell based therapies for ischemic heart disease
Gene and cell based therapies for cerebral vascular diseases
Development of rodent arteriovenous malformation model


Hirose R, Xu F, Dang K, Liu T, Behrend M, Brakeman PR, Wiener-Kronish J, Niemann CU. Transient hyperglycemia affects the extent of ischemia-


---

**Timeline of Sentinel Contributions**

**2006**

**Chairs, Chiefs, and Directors**

**Laura Siedman**

Associate Medical Director, Ambulatory Surgery Center, 2006

**John Taylor**

Director, PACU, 2006

**C. Spencer Yost**

Director, ICU, Mount Zion, 2006


Mckay RE, Rapan R. Infl uence of body mass index on recover of protective airway re exes after anesthesia with desfl urane or sevofl urane. Anesthesiol. May;63(5):554-6, 2008.


Mar 2007

Roland Bainton  
Member, Program in Biologic Sciences, 2007

Lee-lynn Chen  
Acting Chief, Mount Zion, 2007

John Kulli  
Perioperative Medical Director, 2007

Implements National Anesthesia, ICU, Analytic Electronic Information System for VAH  
Gerard Ozanne

NIH Training Grant  
Jean-François Pittet (Young W)


Identification of Protein C Activation as a Critical Mechanism for Development of Early Coagulopathy in Trauma Patients

Jean-François Pittet (Chesbro B, Cohen M)
<table>
<thead>
<tr>
<th>Name</th>
<th>Project Role</th>
<th>Agency/Source</th>
<th>Type of Grant</th>
<th>Project Title</th>
<th>Project Period</th>
<th>Total Award</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atpil, Christian</td>
<td>Principal Investigator</td>
<td>Merck &amp; Co., Inc.</td>
<td>Individual Risch Grant</td>
<td>Development of a Predictive Model for Post-Discharge Nausea and Vomiting (PDNV)</td>
<td>06/01/07 - 05/31/08</td>
<td>$727,538</td>
</tr>
<tr>
<td>Atpil, Christian</td>
<td>Principal Investigator</td>
<td>Schering-Plough Corporation</td>
<td>Clinical Trial</td>
<td>A Randomized, Double-Blind, Double Dummy, Dose-Ranging, Active- and Placebo-Controlled Study of Single-Dose Inhalation Microtherapy for the Prevention of Postoperative Nausea and Vomiting (PDNV)</td>
<td>08/01/07 - 07/31/08</td>
<td>$116,499</td>
</tr>
<tr>
<td>Atpil, Christian</td>
<td>Principal Investigator</td>
<td>Anevisa, Inc.</td>
<td>Clinical Trial</td>
<td>A multicenter, randomized, double-blind, placebo-controlled, parallel-group study to evaluate efficacy, safety and tolerability of a single intraoperative local application of CG5503 in patients undergoing primary unilateral total knee arthroplasty</td>
<td>04/30/08 - 06/30/09</td>
<td>$132,288</td>
</tr>
<tr>
<td>Atpil, Christian</td>
<td>Principal Investigator</td>
<td>Anevisa, Inc</td>
<td>IndivRischGrant/Contract</td>
<td>A Phase 3, Multicenter, Randomized, Placebo-Controlled, Parallel-Group, Double-Blind Study to Evaluate the Efficacy, Tolerability, Safety, and Pharmacokinetics of CG5503 in Patients Undergoing Primary Unilateral Total Knee Arthroplasty</td>
<td>04/30/08 - 06/30/09</td>
<td>$209,282</td>
</tr>
<tr>
<td>Bainton, Roland</td>
<td>Principal Investigator</td>
<td>NGMS/NIH</td>
<td>Individual Risch Grant</td>
<td>Physiology and Regulation of Drug Transport Across the Blood Brain Barrier</td>
<td>08/01/07 - 05/31/12</td>
<td>$1,456,540</td>
</tr>
<tr>
<td>Behrendt, Matthias</td>
<td>Principal Investigator</td>
<td>REAC/Springer-H H Mem FDN</td>
<td>Individual Risch Grant</td>
<td>Reduction of Hepatic Ischemia/Reperfusion Injury by Short-Term Pretreatment with Simvastatin</td>
<td>03/01/07 - 02/28/08</td>
<td>$25,000</td>
</tr>
<tr>
<td>Bickler, Philip</td>
<td>Principal Investigator</td>
<td>NGMS/NIH</td>
<td>Individual Risch Grant</td>
<td>Intracellular Signaling in Anesthetic and Hypoxic Preconditioning of Neurons</td>
<td>04/01/07 - 02/29/11</td>
<td>$1,241,507</td>
</tr>
<tr>
<td>Bickler, Philip</td>
<td>Principal Investigator</td>
<td>University of Alaska</td>
<td>Subcontract</td>
<td>Advancing UAV S/NPP</td>
<td>05/01/06 - 04/30/11</td>
<td>$368,781</td>
</tr>
<tr>
<td>Bickler, Philip</td>
<td>Principal Investigator</td>
<td>Various Industry Sponsors</td>
<td>Other Clinical Contract</td>
<td>Accuracy of Pulse Oxiimeters with Profound Hypoxia</td>
<td>09/01/06 - Present</td>
<td>Varies per contract</td>
</tr>
<tr>
<td>Chen, Yongmei</td>
<td>Principal Investigator</td>
<td>NINDS/NIH</td>
<td>Individual Risch Grant</td>
<td>Del-1 Induces Therapeutic Cerebral Angiogenesis</td>
<td>05/01/06 - 10/30/08</td>
<td>$365,576</td>
</tr>
<tr>
<td>Chen, Yongmei</td>
<td>Principal Investigator</td>
<td>American Heart Association</td>
<td>Individual Risch Grant</td>
<td>Nitrin-1 in Neurovascular Regeneration</td>
<td>07/01/08 - 08/30/10</td>
<td>$140,000</td>
</tr>
<tr>
<td>Dubowitcz, Gerald</td>
<td>Principal Investigator</td>
<td>Mt. Zion Health Fund</td>
<td>Individual Risch Grant</td>
<td>Safety and Acceptability of IV method (UCSF Invention SF2006-14) in Operative and Critical Care Anesthesia Practice</td>
<td>04/01/08 - 03/31/09</td>
<td>$40,500</td>
</tr>
<tr>
<td>Egger, Edmond</td>
<td>Principal Investigator</td>
<td>NINDS/NIH</td>
<td>Specialized Center Grant</td>
<td>Sites &amp; Mechanisms of Inhaled Anesthetic Actions</td>
<td>08/01/04 - 07/31/08</td>
<td>$7,321,207</td>
</tr>
<tr>
<td>Eilers, Helge</td>
<td>Principal Investigator</td>
<td>Hellman Family Awards</td>
<td>Individual Risch Grant</td>
<td>Anesthetic Effects on Peripheral Nociceptors</td>
<td>01/01/08 - 12/31/08</td>
<td>$40,000</td>
</tr>
<tr>
<td>Gelb, Adrian</td>
<td>Principal Investigator</td>
<td>Hospira, Inc.</td>
<td>Individual Risch Grant</td>
<td>Depth of Anesthesia with the Sedline Facilitates Motor Evoked Potential (MEP) Monitoring During Corrective Spinal Surgery</td>
<td>12/19/07 - 12/19/09</td>
<td>$80,000</td>
</tr>
<tr>
<td>Gelb, Adrian</td>
<td>Principal Investigator</td>
<td>Johnson and Johnson</td>
<td>Clinical Trial</td>
<td>A Randomized, Double-Blind, Active- and Placebo-Controlled, Parallel Group, Multicenter Study to Evaluate the Efficacy and Safety of Multiple Doses of CG5503 Immediate-Release Formulation in the Treatment of Acute Pain from Tota</td>
<td>12/08/06 - 06/30/08</td>
<td>$235,400</td>
</tr>
<tr>
<td>Gropper, Michael</td>
<td>Project Leader #2</td>
<td>NHLBI/NIH</td>
<td>Specialized Center Grant</td>
<td>Transfusion and Lung Injury (SCORI Grant)</td>
<td>09/30/05 - 08/31/10</td>
<td>$825,757</td>
</tr>
<tr>
<td>Hashimoto, Tomoki</td>
<td>Principal Investigator</td>
<td>NINDS/NIH</td>
<td>Individual Risch Grant</td>
<td>Intracranial Anemia Pathogenesis-Roles of Vascular Remodeling and Infaromatation</td>
<td>02/01/07 - 01/31/11</td>
<td>$1,262,367</td>
</tr>
<tr>
<td>Housman, Benjamin</td>
<td>Principal Investigator</td>
<td>Helen Diller Family Comprehensive Cancer Center</td>
<td>Individual Risch Grant</td>
<td>Using microfluidic technology to study dynamic kinase inhibitor therapy</td>
<td>07/01/08 - 06/30/09</td>
<td>$30,000</td>
</tr>
<tr>
<td>Howard, Marybeth</td>
<td>Principal Investigator</td>
<td>Academic Senate</td>
<td>Individual Risch Grant</td>
<td>Regulation of STAT1 Signaling Pathway by the Stress of Protein Response</td>
<td>07/16/06 - 07/14/08</td>
<td>$28,000</td>
</tr>
<tr>
<td>Kim, Helen</td>
<td>Principal Investigator</td>
<td>REACH/Huntington G &amp; S Mem FDN</td>
<td>Individual Risch Grant</td>
<td>Whole Genome Amplification of Archived, Paraffin-Embedded AM Tissue</td>
<td>03/01/07 - 02/29/09</td>
<td>$25,459</td>
</tr>
<tr>
<td>Kim, Helen</td>
<td>Principal Investigator</td>
<td>American Heart Association</td>
<td>Individual Risch Grant</td>
<td>Genetic Influences on Clinical Outcome in Brain Arteriovenous Malformations</td>
<td>07/01/07 - 06/30/08</td>
<td>$65,000</td>
</tr>
<tr>
<td>Lee, Chunting</td>
<td>Principal Investigator</td>
<td>American Heart Association</td>
<td>Individual Risch Grant/Cooperative Agreement</td>
<td>Gene Influences on Clinical Outcome in Brain Arteriovenous Malformations</td>
<td>07/01/08 - 08/30/13</td>
<td>$782,716</td>
</tr>
<tr>
<td>Lee, Jae Woo</td>
<td>Principal Investigator</td>
<td>Foundation for Anesthesia Education &amp; Research (FAER)</td>
<td>Instruction Grant</td>
<td>Mesenchymal Stem Cells in the Treatment of Acute Lung Injury in Primary Cultures of Human Aneuocer Epithelial Type II Cells and in the Ex Vivo Perfused Human Lung</td>
<td>01/01/08 - 12/31/08</td>
<td>$115,000</td>
</tr>
<tr>
<td>Lee, Jae Woo</td>
<td>Principal Investigator</td>
<td>NHLBI/NIH</td>
<td>Individual Risch Grant</td>
<td>Mesenchymal Stem Cells in the Treatment of Acute Lung Injury</td>
<td>08/04/08 - 07/31/13</td>
<td>$608,850</td>
</tr>
<tr>
<td>Leung, Jacqueline</td>
<td>Principal Investigator</td>
<td>Anesthesia Patient Safety Foundation (APSF)</td>
<td>Individual Risch Grant</td>
<td>Pathophysiology of Postoperative Delirium</td>
<td>01/01/08 - 06/30/09</td>
<td>$149,800</td>
</tr>
<tr>
<td>Litt, Lawrence</td>
<td>Principal Investigator</td>
<td>NC/NIDR</td>
<td>Individual Risch Grant</td>
<td>2D NMR of Energy Rescue from PARP in Brain Slice Hypoxia</td>
<td>06/01/04 - 05/31/09</td>
<td>$1,332,695</td>
</tr>
<tr>
<td>Liu, Bin</td>
<td>Principal Investigator</td>
<td>DoD/Army Ovarian Cancer Research Program</td>
<td>Individual Risch Grant</td>
<td>Mapping a Clinically Significant Intracranial Ependymoma</td>
<td>03/07/06 - 01/31/11</td>
<td>$1,334,984</td>
</tr>
<tr>
<td>Liu, Bin</td>
<td>Principal Investigator</td>
<td>Mesothelioma Applied Research Foundation (MARF)</td>
<td>Individual Risch Grant</td>
<td>Identification of Mesothelioma Specific Cell Surface Antigens</td>
<td>01/01/07 - 12/31/08</td>
<td>$684,066</td>
</tr>
<tr>
<td>Liu, Bin</td>
<td>Principal Investigator</td>
<td>Cancer Research/AACR</td>
<td>Individual Risch Grant</td>
<td>Intramolecular Antibodies Targeting Pancreatic Tumor Cells in Situ</td>
<td>07/01/08 - 06/30/10</td>
<td>$100,000</td>
</tr>
<tr>
<td>London, Martin</td>
<td>Principal Investigator</td>
<td>Anesthesia Patient Safety Foundation (APSF)</td>
<td>Individual Risch Grant</td>
<td>Perioperative Pharmacologic Prophaxis for Cardiovascular Events in the Dept of Veterans Affairs: A Pharmacoeconomic Pilot Project</td>
<td>01/01/06 - 12/31/08</td>
<td>$75,000</td>
</tr>
<tr>
<td>Lynch, Susan</td>
<td>Principal Investigator</td>
<td>American Lung Association</td>
<td>Individual Risch Grant</td>
<td>Analysis of Bacterial Community Dynamics in Adult Patients with Exacerbations of Chronic Obstructive Pulmonary Disease: The Effect of Microbial Community Composition on Pathogen Abundance and Patient Health</td>
<td>07/01/07 - 06/30/09</td>
<td>$80,000</td>
</tr>
<tr>
<td>Lynch, Susan</td>
<td>Principal Investigator</td>
<td>KateBio Pharmaceuticals, Inc</td>
<td>Individual Risch Grant</td>
<td>Collection of Clinical Respiratory Samples and Pseudomonas Aeruginosa for Validation of a Novel Culture Independent Diagnostic</td>
<td>01/07/08 - 10/16/08</td>
<td>$54,647</td>
</tr>
<tr>
<td>Lynch, Susan</td>
<td>Principal Investigator</td>
<td>NIAID/NIH</td>
<td>Individual Risch Grant</td>
<td>Resequencing Microarray for Rapid Detection &amp; Antimicrobial Resistance Profiling</td>
<td>08/01/07 - 07/31/12</td>
<td>$3,562,568</td>
</tr>
<tr>
<td>Lynch, Susan</td>
<td>Principal Investigator</td>
<td>NHLBI/NIH</td>
<td>Individual Risch Grant</td>
<td>Gene Expression and Pathogenicity of P. aeruginosa</td>
<td>12/11/03 - 11/28/08</td>
<td>$1,465,957</td>
</tr>
<tr>
<td>Lynch, Susan</td>
<td>Principal Investigator</td>
<td>KateBio Pharmaceuticals, Inc</td>
<td>IndivRischGrant/Contract</td>
<td>Effect of Humanized and Purified Antibody on Total Bacterial Community Composition of Adult Patients with Cystic Fibrosis</td>
<td>03/01/08 - 02/28/09</td>
<td>$152,415</td>
</tr>
<tr>
<td>Name</td>
<td>Project Role</td>
<td>Agency/Source</td>
<td>Type of Grant</td>
<td>Project Title</td>
<td>Project Period</td>
<td>Total Award</td>
</tr>
<tr>
<td>------</td>
<td>--------------</td>
<td>---------------</td>
<td>---------------</td>
<td>---------------</td>
<td>----------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Lynch, Susan</td>
<td>Principal Investigator</td>
<td>KatoBox Pharmaceuticals, Inc</td>
<td>IndivRschGrant/Contract</td>
<td>Project #2: Effect of Humanized and Polyclonal Antibodies on Total Bacterial Community Composition of Adult Patients with Cystic Fibrosis</td>
<td>07/01/08 - 06/30/09</td>
<td>$133,514</td>
</tr>
<tr>
<td>Marks, James</td>
<td>Principal Investigator</td>
<td>DTRA/ODD Defense Threat Reduction Agency</td>
<td>IndivRschGrant/Contract</td>
<td>Antibody Based Therapy for Botulism</td>
<td>01/18/07 - 01/17/10</td>
<td>$1,187,549</td>
</tr>
<tr>
<td>Marks, James</td>
<td>Principal Investigator</td>
<td>PHS Centers for Disease Control (CDC)</td>
<td>Individual Rich Grant</td>
<td>Preparation of High Affinity Monoclonal Antibodies for Use with the EndoSep MS Assay to Detect and Differentiate Botulinum Neurotoxins</td>
<td>07/01/06 - 05/31/09</td>
<td>$1,075,166</td>
</tr>
<tr>
<td>Marks, James</td>
<td>Project Leader #5</td>
<td>NCIVDH</td>
<td>Specialized Center Grant</td>
<td>Phase I/II Antibodies (SCORE-BREAST)</td>
<td>03/01/03 - 06/30/08</td>
<td>$1,060,697</td>
</tr>
<tr>
<td>Marks, James</td>
<td>Principal Investigator</td>
<td>NIAID/NIH</td>
<td>Individual Rich Grant</td>
<td>Development of Botulinum Neurotoxin Immunotherapy</td>
<td>07/15/03 - 12/21/08</td>
<td>$5,040,609</td>
</tr>
<tr>
<td>Marks, James</td>
<td>Principal Investigator</td>
<td>NIAID/NIH</td>
<td>IndivRschGrant/Contract</td>
<td>Development of a Final Drug Product for a Mixture of Monoclonal Antibodies for Type A Botulinum Neurotoxins</td>
<td>09/06/06 - 07/27/09</td>
<td>$966,891</td>
</tr>
<tr>
<td>Yang, Guo-Yuan</td>
<td>Project Leader</td>
<td>CHDI, Inc.</td>
<td>IndivRschGrant/Contract</td>
<td>Development of Novel Human-Specific Targeting Ligands for Transcytosis</td>
<td>06/07/06 - 05/31/08</td>
<td>$472,763</td>
</tr>
<tr>
<td>Young, William</td>
<td>Principal Investigator</td>
<td>Fox Chase Cancer Center</td>
<td>Subcontract</td>
<td>Adaptive Immunity from High Affinity Anti-HER2/neu Monoclonal Antibodies</td>
<td>09/01/06 - 06/30/11</td>
<td>$382,832</td>
</tr>
<tr>
<td>Marks, James</td>
<td>Principal Investigator</td>
<td>Fox Chase Cancer Center</td>
<td>Subcontract</td>
<td>Defining the Role of Affinity in Antibody-Based Tumor Targeting and Therapy</td>
<td>02/05/07 - 01/31/12</td>
<td>$812,588</td>
</tr>
<tr>
<td>Marks, James</td>
<td>Principal Investigator</td>
<td>Functional Genetics</td>
<td>Subcontract</td>
<td>Determining the Impact of Epitope and Affinity of TSG101 Antibodies on Anti-Viral Activity</td>
<td>06/23/06 - 09/01/08</td>
<td>$236,822</td>
</tr>
<tr>
<td>Marks, James</td>
<td>Principal Investigator</td>
<td>The Lustgarten Foundation for Pancreatic Research</td>
<td>Individual Rich Grant</td>
<td>Lustgarten Foundation for Pancreatic Cancer Research Biomarker Initiative</td>
<td>04/01/08 - 03/09/09</td>
<td>$306,171</td>
</tr>
<tr>
<td>McKay, Rachel</td>
<td>Principal Investigator</td>
<td>Schering-Plough Corporation</td>
<td>Clinical Trial</td>
<td>A Randomized, Double-Blind, Double-Dummy, Dose-Ranging, Active-and Placebo-Controlled Study of Single-Dose Ralopitant Monotherapy for the Prevention of Postoperative Nausea and Vomiting (PONV)</td>
<td>09/01/07 - 08/31/08</td>
<td>$113,399</td>
</tr>
<tr>
<td>Niemann, Claus</td>
<td>Principal Investigator</td>
<td>International Anesthesia Research Society (IARS)</td>
<td>Individual Rich Grant</td>
<td>Ischemia Repetition Injury During Total Knee Arthroplasty: The Impact of Metabolic Syndrome</td>
<td>01/07/07 - 12/31/08</td>
<td>$80,000</td>
</tr>
<tr>
<td>Niemann, Claus</td>
<td>Principal Investigator</td>
<td>HPSA</td>
<td>Individual Rich Grant</td>
<td>Intensive Insulin Therapy in Decreased Donors to Improve Renal Allograft Function and Transplanted Allograft Outcomes</td>
<td>09/01/08 - 08/31/11</td>
<td>$821,251</td>
</tr>
<tr>
<td>Palmer, Pamela</td>
<td>Principal Investigator</td>
<td>The Mayday Fund</td>
<td>Instruction Grant</td>
<td>Pain CARE Center</td>
<td>06/01/05 - 05/31/08</td>
<td>$179,400</td>
</tr>
<tr>
<td>Pittet, Jean</td>
<td>Principal Investigator</td>
<td>NGM/NIH</td>
<td>Individual Rich Grant</td>
<td>Stress Preconditioning and Aloevera Epithelial Injury</td>
<td>12/01/06 - 11/30/08</td>
<td>$1,045,089</td>
</tr>
<tr>
<td>Pittet, Jean</td>
<td>Project Leader #4</td>
<td>NGM/NIH</td>
<td>Specialized Center Grant</td>
<td>TGF-Beta and Lung Epithelial Injury (SCCOR GRANT)</td>
<td>09/30/03 - 06/30/08</td>
<td>$1,769,262</td>
</tr>
<tr>
<td>Pittet, Jean</td>
<td>Program Director</td>
<td>NGM/NIH</td>
<td>Training Grant</td>
<td>Comprehensive Anesthesia Research Training</td>
<td>07/01/07 - 06/30/12</td>
<td>$933,595</td>
</tr>
<tr>
<td>Pittet, Jean</td>
<td>Principal Investigator</td>
<td>Incode BioPharmaceuticals, Inc</td>
<td>IndivRschGrant/Contract</td>
<td>Complement Inhibition and Protein C Pathway</td>
<td>5/13/08 - 12/09</td>
<td>$29,355</td>
</tr>
<tr>
<td>Rallin, Mark</td>
<td>Principal Investigator</td>
<td>Foundation for Anesthesiology</td>
<td>Instruction Grant</td>
<td>A Comparison of Tissue Oxygen Levels in Multiple Organs During Isovolemic Hemodilution with Right and Left-Shifted Hemoglobin-Based Blood Substitutes</td>
<td>01/07/06 - 12/31/08</td>
<td>$355,000</td>
</tr>
<tr>
<td>Rallin, Mark</td>
<td>Principal Investigator</td>
<td>Anesthesia Patient Safety Foundation (APSF)</td>
<td>Individual Rich Grant</td>
<td>Supplemental Oxygen: A Reduction in Pulse Dymetry Sensitivity or an Increased Margin of Safety</td>
<td>01/01/08 - 12/31/08</td>
<td>$150,000</td>
</tr>
<tr>
<td>Raux, Jeremy</td>
<td>Principal Investigator</td>
<td>American Lung Association (ALA)</td>
<td>Fellowshipship</td>
<td>Role of Stress Protein Response on IL-1 Beta-Mediated Inhibition of EILAC Expression and Function in Lung Epithelial Cells</td>
<td>07/01/06 - 06/30/08</td>
<td>$65,000</td>
</tr>
<tr>
<td>Sall, Jeffrey</td>
<td>Principal Investigator</td>
<td>Foundation for Anesthesiology</td>
<td>Instruction Grant</td>
<td>Volatile Anesthetic Toxicity in Hippocampal Derived Progenitor Cells</td>
<td>01/07/07 - 12/31/08</td>
<td>$250,000</td>
</tr>
<tr>
<td>Schumacher, Mark</td>
<td>Principal Investigator</td>
<td>National Headache Foundation</td>
<td>Individual Rich Grant</td>
<td>Regulation of Capsaicin Receptor (TPVIII) Expression in Meningeal Sensory Neurons Under Inflammatory Conditions</td>
<td>04/01/08 - 03/31/09</td>
<td>$16,000</td>
</tr>
<tr>
<td>Song, Yuanlin</td>
<td>Principal Investigator</td>
<td>Academic Senate</td>
<td>Individual Rich Grant</td>
<td>Role of PA-1 in Acute Lung Injury Induced by P. Aeruginosa</td>
<td>03/01/08 - 02/28/09</td>
<td>$23,676</td>
</tr>
<tr>
<td>Sonner, James</td>
<td>Principal Investigator</td>
<td>NGM/NIH</td>
<td>Individual Rich Grant</td>
<td>Genes Underlying the Response to Inhaled Anesthetics</td>
<td>07/15/04 - 06/30/09</td>
<td>$2,061,572</td>
</tr>
<tr>
<td>Stratmann, Greg</td>
<td>Principal Investigator</td>
<td>Anesthesia Patient Safety Foundation (APSF)</td>
<td>Individual Rich Grant</td>
<td>Effectiveness of Three Clinically Applicable Strategies to Improve Safety of Neonatal Anesthesia</td>
<td>01/01/07 - 12/31/08</td>
<td>$150,000</td>
</tr>
<tr>
<td>Su, Hua</td>
<td>Principal Investigator</td>
<td>American Heart Association (AHA)</td>
<td>Individual Rich Grant</td>
<td>Bone Marrow Mesenchymal Stem Cell Mediated Hypoxia-Responsive Angiogenic Gene and Cell Therapy for Ischemic Heart</td>
<td>07/01/05 - 06/30/09</td>
<td>$260,000</td>
</tr>
<tr>
<td>Tang, Jun</td>
<td>Principal Investigator</td>
<td>Pfizer US Pharmaceuticals</td>
<td>Clinical Trial</td>
<td>Boneless in the Treatment of Subjects with Nonsurgical Pneumonia Proven to be Due to Methicillin-Resistant Staphylococcus Auresus</td>
<td>03/24/06 - 12/31/08</td>
<td>$207,194</td>
</tr>
<tr>
<td>Tang, Jun</td>
<td>Principal Investigator</td>
<td>Hospira, Inc.</td>
<td>Individual Rich Grant</td>
<td>A Prospective, Randomized, Controlled Study on the Use of Dexmedetomidine to Facilitate Exubation in Surgical Intensive-Care Unit Patients Who Failed Previous Weaning Attempts Following Prolonged Mechanical Ventilation</td>
<td>09/24/07 - 09/23/10</td>
<td>$154,966</td>
</tr>
<tr>
<td>Tang, Jun</td>
<td>Principal Investigator</td>
<td>Ortho-McNeil, Inc</td>
<td>Clinical Trial</td>
<td>A Phase 2, Open-Label, Non-Comparative Study of Deripenin in the Treatment of Nosocomial and Ventilator-Associated Pneumonia in Hospitals Where Pseudomonas Aeruginosa May be A Prevalent Pathogen</td>
<td>05/21/07 - 08/31/08</td>
<td>$121,705</td>
</tr>
<tr>
<td>Yang, Guo-Yuan</td>
<td>Principal Investigator</td>
<td>The Sturge-Weber Foundation</td>
<td>Individual Rich Grant</td>
<td>Development of Cerovascular Dysplasia Model for SWS Study</td>
<td>08/01/07 - 07/31/08</td>
<td>$60,000</td>
</tr>
<tr>
<td>Yeat, Charles</td>
<td>Principal Investigator</td>
<td>NGM/NIH</td>
<td>Individual Rich Grant</td>
<td>Background Potassium Channels as Anesthetic Targets</td>
<td>03/04/03 - 02/29/08</td>
<td>$888,576</td>
</tr>
<tr>
<td>Young, William</td>
<td>Principal Investigator</td>
<td>NINDS/NIH</td>
<td>Individual Rich Grant</td>
<td>Upstream Regulators of the Prothrombotic State</td>
<td>07/01/05 - 06/30/09</td>
<td>$1,974,062</td>
</tr>
<tr>
<td>Young, William</td>
<td>Principal Investigator</td>
<td>NINDS/NIH</td>
<td>Individual Rich Grant</td>
<td>Hemodynamics of Cerebral Arteriovenous Malformations</td>
<td>09/01/05 - 04/30/09</td>
<td>$1,302,842</td>
</tr>
<tr>
<td>Young, William</td>
<td>Program Director</td>
<td>NINDS/NIH</td>
<td>Program Project Grant</td>
<td>Integrative Study of Brain Vascular Malformations</td>
<td>09/30/03 - 06/30/08</td>
<td>$6,487,825</td>
</tr>
<tr>
<td>Young, William</td>
<td>Principal Investigator</td>
<td>Columbia University</td>
<td>Clinical Trial Sub Award</td>
<td>A Randomized Trial of Unruptured Brain Arteriovenous Malformations</td>
<td>01/13/06 - 07/31/11</td>
<td>$288,600</td>
</tr>
<tr>
<td>Young, William</td>
<td>Project Leader</td>
<td>The Aneurysm and AVM Foundation/TAFF</td>
<td>Individual Rich Grant</td>
<td>PET and Magnetic Resonance Modeling to Assess the Risk of Aneurysm Rupture</td>
<td>11/07/07 - 10/31/09</td>
<td>$50,000</td>
</tr>
<tr>
<td>Young, William and Yang, Guo-Yuan</td>
<td>Project Leaders</td>
<td>California Institute for Regenerative Medicine/CRMI</td>
<td>Specialized Center Grant</td>
<td>Human Stem Cell Derived Oligodendrocytes for Treatment of Stroke and MS</td>
<td>08/01/07 - 07/31/11</td>
<td>$200,000</td>
</tr>
</tbody>
</table>
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

Department Chairman
Editor-in-Chief
Ronald D. Miller, MD

Executive Editor:
Marge O’Halloran

Editor:
Morgen Ahearn

Designer:
UCSF Documents, Media & Mail

Principal Writer:
Andrew Schwartz

Photographers:
Michael Lee
Christine Jegan
Marco Sanchez
Richard Schlobohm
Brant Ward
Various UCSF Anesthesia Staff

Anesthesia News

Department of Anesthesia and Perioperative Care Grand Rounds

First and Third Wednesdays of every month
6:30 a.m.-8:00 a.m.
Room C 701,
521 Parnassus Ave.
San Francisco, California
www.anesthesia.ucsf.edu

Department of Anesthesia and Perioperative Care

310
University of California
San Francisco
Box 0648
San Francisco, CA 94143-0648