Multi-Stage Care for Heart Failure Patients

Whether it’s a bridge to transplant, a destination therapy or even a bridge to recovery, the insertion of a left ventricular assist device (LVAD) involves a complex perioperative process, in which cardiac anesthesiologists play an essential role throughout, says cardiac anesthesiologist Lundy Campbell, MD.

Careful Monitoring Helps Prevent Right Ventricle Failure

It begins, of course, with preoperative care, which demands careful coordination among the cardiac anesthesiologist, cardiologist and heart surgeon due to these patients’ poor heart function. “These are very sick patients and we have to consider all the things that can go wrong,” says Campbell.

During surgery and immediately after bypass, monitoring becomes a critical component. “We’re the ones doing TEE (transesophageal echocardiography) especially to observe right ventricular activity,” says Campbell, noting that the most immediate danger is right ventricle failure as activity in the left ventricle suddenly reaches levels the heart has not seen in some time.

“When we first see these patients, their left ventricle output is a quarter of what it should be,” says Campbell. “Then we put the LVAD in, and suddenly the right ventricle has to keep up with the LVAD. Sometimes, it can’t ramp up quickly enough for the increased blood flow, and this leads to right ventricle failure.”

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continued on page 7
**EDUCATION**

**The UCSF Anesthesia Internship Year Broadens Its Scope**

Nationally, an increasing number of anesthesia residency programs offer the opportunity to complete an internship as part of the residency. At UC San Francisco’s Department of Anesthesia and Perioperative care, the option became available in the 2008-2009 academic year.

During their internship year at UCSF, physicians move through an intensive five months of internal medicine, as well as rotations in, intensive care, surgery, emergency medicine, and neurology. Their year ends with the Anesthesia Education Month during which residents spend time participating in didactics, simulation training, anatomy lab and hands on experiences in the operating room.

This final month helps ease the transition into their first year of residency, says Kristina Sullivan, MD, who directs the internship program.

**Expanding the Didactics During the Intern Year**

“We have never been a program to teach to a test,” says Sullivan, “But starting in 2014 the ABA [American Board of Anesthesiology] will split the single written board exam into basic and advanced portions, the first of which will be taken after the CA-1 year. The emphasis will be on basic science and physiology. This fits well with our interest in creating a strong basic science curriculum during internship as a necessary foundation for the upcoming residency years.”

To build on that foundation, Sullivan and a few of the Health Professions Education residents are creating a lecture series on organ-based basic and clinical sciences that will incorporate some of the material covered on the board examination. The extra sessions will begin in September 2013 and will continue during the Anesthesia Education Month in June 2014.

“Our expectation is that the series will give the interns a great foundation for practicing medicine both during and after their internship and will have the added benefit of helping them master key concepts they’ll need to know for the board exam,” says Sullivan.

**Strength in Community**

In addition to being academically strong and closely integrated with other departments, the internship program yields additional benefits for the interns and their incoming classmates.

Typically, the interns have emerged from their year at UCSF with polished communication skills and a strong sense of professionalism.

“Of course, we get great residents who have completed their internship at other institutions as well,” says Sullivan. “But having an internship here helps smooth the transition for everybody, because our interns offer a network of support for incoming residents who spent their internship year elsewhere.”

The UCSF interns know the faculty and staff at the institution and are familiar with the systems and technology used here.

“I have seen an evolution,” Sullivan continues. “Not only do the outgoing interns help the incoming first-year residents, they’ve also developed a community that supports the incoming interns.”

Each internship class has been giving to the next class to the point that two women among this year’s first-year residents have revamped the whole orientation program for the incoming interns. First-year residents from the categorical program now run activities at the internship retreat.

“It’s a nice legacy of people giving each other support and knowledge, and helping one another navigate their way through residency,” says Sullivan. “You can’t quantify the value of that.”
FROM THE CHAIR

Expertise “Lost in Translation”

In US hospitals, nearly 100,000 people die unnecessarily every year – the equivalent of one 747 crashing fatally 4-5 days a week. If that were in fact happening in the airline industry and someone developed a safety device or process to decrease the crashes, it would be unconscionable if we didn’t immediately adopt it.

In medicine, a different standard seems to apply. In 2003, when Claude Lenfant, MD, stepped down from his post as the longest-serving director of the National Heart, Lung and Blood Institute, he lamented the fact that it took more than 15 years to achieve widespread adoption of beta blockers, statins and aspirin into clinical practice despite overwhelming evidence regarding their value in preventing heart attacks. Lenfant referred to this as “Lost in Translation.”

A decade later, we are barely crossing the threshold of the science of implementation. Even in highly touted academic medical centers like our own, many of us resist substantive change in how we practice because we are, perhaps justifiably, skeptical of some outside force impinging on our clinical judgment.

Skepticism, however, is different from being obstinate and Thomas Lee, President of Partners HealthCare System – “clinical arm” of the Brigham and Massachusetts General Hospitals in Boston – has fixed his sights squarely on this problem in his description of delivery system reform. In particular, he believes delivery system reform depends on providers translating validated research discoveries into clinical practice. The first stages of reform – insurance and payment reform, which depended on legislators, regulators and the courts – will die a slow death unless we now change the delivery system to efficiently deliver higher quality, more patient-centered care.

It is an extraordinary challenge. Consider just one example: while engaging in value-stream mapping as part of using LEAN principles to eliminate waste and improve quality in a patient-centered manner, our department was struck by the archaic and arcane processes that we use in delivering care to patients undergoing arthroplasty. For your average hip replacement, a patient will see five different sets of anesthesia providers as they move through preoperative care, regional blocks, intraoperative anesthesia, post anesthesia care, and the acute pain service. We are seen as an anesthesia service and our patients and our surgical colleagues have the right to expect that each step along the way, we anesthesiologists are aware of what each other’s plans are.

However, there are still far too many barriers to be overcome and gaps to be bridged for us to honestly believe our care is seamlessly integrated. The key step in getting to that point is creating what many have referred to as a genuine learning organization, one set up to optimize and disseminate learning and expertise.

Within our own department, we have expertise in abundance across our three campuses, so we must do more to create a learning organization. It is hard, complicated human work that requires leadership and commitment, but it is also the only way to eliminate waste and to avert complications and readmissions.

Art Wallace, MD, at the San Francisco VA Medical Center offers a fine example of how to make it happen. He has played an instrumental role in fleshing out and pushing forward the concept of a “systems based medicine resource group.” In brief, the concept defines an organizational structure and a process that facilitates innovation, rigorous testing and then rapid dissemination of proven advances.

None of this is meant to imply that every care improvement improves efficiency or reduces costs or that efficiency improvements can’t negatively affect quality. Nor should attempts to reduce practice variation and improve efficiency supersede clinical judgment. If we are to truly put our patients first, then clinical judgment trumps all – but only if it is the result of genuine and ongoing reflection about what is best for our patients, rather than being classified as clinical “judgment” because it is what we’ve done before.

In short, when we step outside standardized, evidence-based practice, we need to justify why we’ve done so by demonstrating how it improved patient care. We owe that to our patients, just as we owe it to them to make the types of changes in our delivery system that this time in history demands.

As an academic medical center, we speak often of our commitment to teaching, but we need to also re-commit ourselves to learning. If we do so, we can be leaders in the critical third phase of healthcare reform – the one that will have the biggest effect on our patients and is the reason we entered this profession in the first place.
What are today’s most prominent challenges for managing and measuring the efficacy of Code Blue and rapid response teams?

There are really two primary challenges. The first is failure to rescue, something every medical center has to consider. In particular, we need to continually examine the incidence of cardiac arrest to understand to what degree it indicates issues with patient care prior to arrest.

The other big challenge is improving survival at discharge, as opposed to only achieving high immediate survival rates. Post-resuscitation survival depends on a very good critical care system that practices modalities known to improve outcomes. Even at UCSF, where we have outstanding outcomes compared to national data, survival at discharge must always be an area of concern.

Addressing these challenges at any hospital is a shared responsibility between the primary service and Code Blue and Rapid Response teams – and ICU teams.
ANTIBODIES
Marks Takes Another Step Forward in Fight Against Bioterrorism

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

For many years, an effective antidote for botulism – one that can be easily stored, readily disseminated and has few significant side effects – has proven elusive. The only available solution, derived from horses, has a considerable side effect profile and is difficult to administer quickly and broadly.

But James Marks, MD, PhD – who in addition to his clinical duties at San Francisco General Hospital is an expert in creating antibodies – has long been pursuing an alternative antidote using monoclonal antibodies. Having received considerable NIH and Department of Defense support in the aftermath of 9/11, the Marks lab recently received another significant boost when the Public Health Emergency Medical Countermeasures Enterprise (PHEMCE) Implementation Plan, released in December 2012, stated that it is dedicated to the development of monoclonal antibodies to fight botulism.

“It’s a big turning point,” says Marks. “The first public recognition from Health and Human Services that we need something more than horses.”

Complicated Work

Of late, Marks has been working with XOMA, a biotechnology company in Berkeley to create antidotes from monoclonal antibodies developed in his lab for three serotypes (A, B, and E) of the seven identified to date: A–G. Types A, B and E together make up over 95 percent of the toxins that cause human disease.

It’s complicated work, because the antibodies not only have to be potent enough to cope with extreme toxicity, but also must address multiple subtypes within each of the A, B, and E serotypes. Moreover, single antibodies do 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.

In 2012, XOMA completed Phase One clinical trials for the type A antibodies. “It’s the first three antibody combination ever taken into humans,” says Marks, noting that there were no drug-related serious adverse events.

Similarly, XOMA is working on developing B and E antidotes from antibodies identified in the Marks Lab, both of which will enter Phase One clinical trials in 2014. In addition, Marks recently received a $5 million, 5-year grant from NIH to work with XOMA to push forward lead antibodies for serotype F, which the Marks’ lab discovered in some of its previous work.

Finding Safer, Broader, Easier Solutions

Marks appears most excited about a proposal to combine antidotes for A, B, and E in a powdered form that will last longer than a liquid formulation and will address a major criticism of the monoclonal program: single specificity. Single specificity is problematic because in most cases, physicians cannot yet quickly identify which serotype is at play and, so, which antidote to deliver. (Marks is also working on solving the rapid identification challenge.)

The PHEMCE plan states that if clinical trials for serotypes A, B and E are successful, the NIH will support their combination into one product. Marks believes this is crucial, because the horse antitoxin is less safe and challenging to administer in a mass casualty situation; it requires slow, intravenous infusion.

“It’s simply not practical in a mass intoxication scenario,” says Marks.

Consequently, he intends to spend the next few years further defining the complex spectrum of BoNT serotypes and sub-serotypes; generating broad spectrum, high affinity recombinant antibodies that together bind and neutralize all BoNTs; and identifying and advancing lead antibodies into pre-clinical development.

“We are extremely encouraged by the initial clinical trials and looking forward to completing the development of antidotes that are sorely needed,” says Marks.
Thomas Fernandez
Visiting Assistant Professor

Thomas Fernandez arrives at UCSF as a visiting professor having completed his BSc in Pharmacology, and MB ChB at the University of Auckland, New Zealand. He completed residency in Auckland achieving distinction in the Australian and New Zealand College of Anesthetists final exam. He also completed fellowships in vascular and liver transplant anesthesia at Auckland City Hospital, joining the faculty there in 2012.

His Auckland department requires a year of overseas experience. Fernandez chose UCSF, rather than something closer to home, because, he says, “I wanted to try something unique and different.”

Well aware of the history and expertise of the UCSF Department of Anesthesia and Perioperative Care, Fernandez feels privileged to be a part of such a reputable team. He is also impressed with San Francisco – the diversity and friendliness of its people and the easy access to outdoor activities.

While here, he hopes to gain exposure to a greater variety of complex cases and surgical sub-specialties. He also intends to pursue his teaching and global health interests; he is performing a review of anesthesia training around the world.

“I’m very impressed with both the UCSF faculty and residency program,” he says. “The focus on teaching and the complexity of patients produces highly skilled and competent clinicians.”

Chee Teik Lee
Visiting Assistant Professor

Chee Teik Lee has had an adventurous journey to UC San Francisco, where he is a visiting assistant professor, and serves as an attending at UCSF Medical Center. Born in Malaysia, he traveled to Australia for college/medical school at the University of Melbourne, where he also completed his residency and fellowship.

“One of the reasons I came to UCSF was to see how things are done differently here,” he says, noting that while anesthesia is similar around the world, the types of procedures and surgeries that anesthesiologists work on can differ greatly. “The one that is quite interesting is gastric bypass, which is not a public health benefit in Australia.”

While he understands why there are limitations at UCSF in terms of the types of case exposure, Lee is interested in ear, nose and throat and maxillofacial surgeries, “I’m also interested in getting more involvement in thoracic and neuroanesthesia” he says.

A lover of travel, photography and the outdoors, Lee is taken with the San Francisco Bay Area and is contemplating staying on as a permanent faculty member.

Lingzhong Meng
Associate Professor of Clinical Anesthesia

Drawn by UC San Francisco’s excellent reputation and faculty – and by the vibrant academic atmosphere – Lingzhong “LZ” Meng, MD, arrived at UCSF in February 2013 after stints at Duke University and UC Irvine (UCI) Medical Center.

“I wanted to find an institution with excellent resources and reputation to support my academic and clinical pursuits – and with people I know and am thrilled to work with,” says Meng. “Also, my family and I travel a lot between China and the United States, and it’s more convenient to do that from the West.”

Meng’s previous research examines how to better monitor the brain in patients undergoing anesthesia so clinicians can make care decisions more objectively.

“I want to define the tool that can monitor the essential cerebral physiology,” he says. “To optimize the physiology, we need to be able to monitor from the outset. They are sequential. No other way around.”

He stresses that a strong fundamental understanding of human physiology is the key to better patient care. “We can’t just treat by the numbers—you know, ‘if blood pressure is low, give a drug to increase the number,’” he says. “Every time we intervene we need to ask whether our patient benefits. To do that, we have to understand the essential physiology and explore the way to monitor it.”

As director of neuroanesthesia at UCI – as well as during his time at Duke – Meng taught and mentored others in neuroanesthesia and cerebral physiology. “I’ve always enjoyed teaching,” he says. “It’s an opportunity to share, and it motivates me to become better.”

In addition, Meng enjoys a lifelong attachment to philosophical thought, an approach he applies to every aspect of his life, from medicine to home life. Since arriving in San Francisco – and while enjoying the diverse culture, foods, and close proximity of everything – he maintains a daily exercise schedule that enables him to engage in his passion.

“Every day, I use philosophical thinking to try to understand everything I do in depth,” he says. “Opportunities go to those who have prepared and stay fit.”

James Gordon Ramsay
Professor of Clinical Anesthesiology

James (Jamie) Ramsay, MD, arrived at UC San Francisco in 2013 after more than 20 years at Emory University Hospital in Atlanta. While there, he served for most of his tenure as director of the Cardiac Surgical Intensive Care Unit, and for 10 years as chief of the anesthesiology service. At UCSF Medical Center at Parnassus, he is now medical director of the cardiac surgical ICU.

A Canadian by birth, Ramsay trained in anesthesiology at McGill University in Montreal, where his mentor was the renowned cardiac anesthesiologist Earl Wynands, an expert on ischemia and high-dose opioids. “Cardiac anesthesia meshed with my interest in cardiac intensive care, which I enjoyed as a junior resident and during my final, elective year of training in Canada,” says Ramsay.

After that year, he did a year of laboratory research at Oxford University with Pierre Foex on a McLaughlin Traveling Fellowship, before returning to McGill from 1986-1990, during which time he worked on perioperative studies of ischemia with Professor Wynands.

Emory recruited Ramsay because of his experience and interest in cardiac surgical critical care, and in his early years there he became part of a UCSF-led multi-center study that was collecting
Multi-Stage Care for Heart Failure Patients

Campbell says that if failure occurs, it usually occurs pretty quickly, often within 30 minutes of bypass. As a preventive measure, during surgery physicians often use drugs like inhaled nitric oxide, dobutamine or milrinone that increase cardiac function and decrease pulmonary artery pressure. In addition, the TEE monitoring helps the surgical team determine next steps, such as whether there’s a need for continued inotropic drugs postoperatively or a need to also add extracorporeal membrane oxygenation (ECMO) until the right ventricle recovers. In a more severe situation, the team might even consider insertion of a temporary RVAD.

“HeartWare device (shown at right),” Campbell says that if failure occurs, it usually occurs pretty quickly, often within 30 minutes of bypass. As a preventive measure, during surgery physicians often use drugs like inhaled nitric oxide, dobutamine or milrinone that increase cardiac function and decrease pulmonary artery pressure. In addition, the TEE monitoring helps the surgical team determine next steps, such as whether there’s a need for continued inotropic drugs postoperatively or a need to also add extracorporeal membrane oxygenation (ECMO) until the right ventricle recovers. In a more severe situation, the team might even consider insertion of a temporary RVAD.

“Once the patient is in the ICU, we might do another echocardiogram, or use pulmonary artery catheters to monitor cardiac output and look at pulmonary artery pressures so we can adapt the care as necessary,” says Campbell.

As the right ventricle’s ability to handle input improves, the patient comes off medication, and the heart functions on its own; often within six months it is functioning normally.

Of course, once discharged from the ICU, much of that time is spent in the outpatient setting, under the care of a cardiologist and cardiac surgeon, though sometimes patients need other procedures and return to the hospital.

“We rejoin the team at that point, to do everything from more TEE monitoring to using an arterial line to manage blood pressure,” says Campbell.

Advances in VAD Technology and Techniques Transform Care

The good news, says Campbell, is that advances in technology and techniques have opened new options for patients. He cites, for example, the recently FDA-approved HeartWare device (shown at right), which is so small and quick to install it can eliminate the need for a heart-lung machine.

“A large dose of adenosine can stop the heart briefly, the surgeon quickly places the device, and the heart starts beating again allowing us to place a VAD without the use of a bypass machine altogether,” says Campbell.

He also notes that there have even been cases where the LVAD has served as a genuine bridge to recovery. Its presence has enabled the left ventricle to heal so much that transplant became unnecessary and, eventually, the LVAD was removed.

“The technology is getting so good, that in the future, patients will probably rather get a VAD than a transplant,” says Campbell. “It’s a phenomenal technology.”
Aiming to Improve Pain Management

In 2011, UC San Francisco held its first Pain Summit – an interprofessional meeting aimed at providing content, reviewing clinical pain cases to improve quality and safety, discussing critical aspects of pain care and identifying gaps in providing optimal pain care. The summit was a tremendous success and with the naming of UCSF as one of 12 NIH Centers of Excellence in Pain Education (CoEPE), the university now has more resources to continue the Pain Summits on an annual basis.

This year’s summit, held May 16, 2013, used a rich array of speakers in the morning and breakout workshops in the afternoon to explore multidisciplinary approaches to treating both acute and chronic pain. The goal is to improve pain management among all UCSF clinicians.

With Principal Investigator Mark Schumacher, PhD, MD, serving as emcee, the day began with Sheila Antrum, RN, MHSA, chief nursing and patient care services officer at UCSF Medical Center talking about the need to create systems that ensure best practices make their way to all clinicians who work with patients, because patients have very clear expectations about having their pain managed.

Chief Medical Officer Josh Adler, MD, was next. He spoke on a number of different topics, and issued a challenge to those present: based on patient surveys that put UCSF in the 50th percentile in terms of managing pain, he encouraged providers in the audience to use “multimodal analgesia” to improve those scores, while also improving patient safety in the administration of pain treatments.

Next, Schumacher explained that the purpose of the CoEPE and the day’s summit was to not only improve patient safety but to also contribute to meeting a national need for clinicians to receive more and better pain education.

The UCSF CoEPE will create a roadmap for improving pain education across all four schools at UCSF; explore the establishment of pain assessment and treatment competencies; weave expanding knowledge into educational programs that emphasize case studies, rather than lectures; and create structured educational seminars or simulated sessions that are intended to develop pain management competencies. The group will also create a bi-annual newsletter and web site to keep the entire school aware of the group’s work and of advances in pain management.

From there, a series of speakers took on a wide range of topics:

- Sheri VanOsdol, PharmD, BCPS, from the School of Pharmacy spoke about methods for making patient-controlled analgesia (PCA) safer by increasing the PCA lock-out interval. She then spoke about the need to look beyond opioids.
- Adam Cooper, RN, BSN, MSN, a clinical nurse specialist at UCSF Medical Center spoke about progress that had been made over the past two years on safely keeping patients’ pain under control, in part by refining tools that patients use to self-report their pain levels.
- Schumacher retook the podium to discuss multimodal analgesia, with a focus on the growing number of non-opioid strategies.
- Adimika Meadows Arthur, MPH, administrative director of the pain service line discussed the challenges involved in trying to integrate and streamline pain services across UCSF in a way that delivers higher quality care for lower costs.

Featured speaker Stefan Friedrichsdorf, MD, director of the Department of Pain Medicine, Palliative Care and Integrative Medicine at Children’s Hospitals and Clinics of Minnesota at the 2013 UCSF Pain Summit

- The effective dose is what relieves the pain
  - Different children may respond differently to same dose
  - Effective dose must be adjusted to child’s needs
  - Dose of strong opioids: only the sky is the limit

- At analgesic dosing -> no sedation expected

- Assess response frequently
  - Pain Scales
Stefan Friedrichsdorf, MD – the day’s primary guest and director of the Department of Pain Medicine, Palliative Care and Integrative Medicine at Children’s Hospitals and Clinics of Minnesota – gave an entertaining presentation about some of the latest findings on pain pharmacology and the neurological pathways of pain.

John Maa, MD, director of the Surgical Hospitalist Program at UCSF Medical Center presented a case study of an adult with severe abdominal pain, who is also at risk for opioid abuse.

Diana Coffa, MD, from San Francisco General Hospital detailed the risk factors for opioid abuse, including making clinicians aware of some myths that still exist about who is truly at risk.

Friedrichsdorf returned to discuss integrated pain management in children, with an emphasis on understanding the transition from acute to chronic pain. He then concluded the morning by co-moderating a panel of clinicians from UCSF Benioff Children’s Hospital – along with Karen Sun, MD, chief of the Division of Pediatric Hospital Medicine at UCSF Benioff – that looked at what is working well at UCSF and where improvements need to be made. The panel included:

- David Becker, MD, a pediatric integrative medicine physician at the Osher Center for Integrative Medicine
- Penny Ngo, PharmD, of the Integrated Pediatric Pain and Palliative Care Service
- Lisa Gray, Child Life Specialist
- Nurse Dawn Pizzini
- Maurice Zwass, MD, chief of pediatric anesthesia
- Adimika Meadows Arthur, MPH, administrative director of the UCSF Pain Service Line
- Sarah Palyo, PhD, and her fellow pain management team members from the SF VA Medical Center, presented their model of an intensive pain rehabilitation program.
- Alain Lartigue, MD, Pain Clinic Director
- Kathryn Schopmeyer, PT, DPT, Pain Clinic Physical Therapist
- Kathleen Campbell, RN, Pain Clinic Care Coordinator
- Tracy Lin, PharmD, Pain Clinic Pharmacist

After a lunch break, the summit continued by offering a series of focused, small group breakout sessions that highlighted the various options available for multimodal analgesia, from massage, acupuncture and acupressure to interventional and pharmacological solutions.

Schumacher considered the day an unqualified success, especially based on a pre-and post-test, that showed most attendees had filled in important gaps in their understanding of pain assessment and management.

“With the launch of the pain medicine website, a video copy of the Pain Summit 2013 will soon be available to those unable to attend,” he says.

For more information about the CoEPE, please contact us at: ucsfcoepe@anesthesia.ucsf.edu.
### Active Research Grants

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#### Additional Information:

- **Effects of brain beta amyloid on postoperative cognition**
- **Unfolded protein response and neuron ischemic tolerance**
- **Accuracy of pulse oximeters with profound hypoxia**
- **Postoperative delirium in high-risk patients**
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<td><strong>Evaluating good sleep for ICU sedation</strong></td>
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<tr>
<td>$168,500</td>
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<thead>
<tr>
<th>Rachel McKay</th>
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<tbody>
<tr>
<td><strong>Principal Investigator</strong></td>
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<tr>
<td><strong>Effect of Anesthetic Choice (Sevoflurane versus Desflurane) on Speed and Sustained Nature of Airway Reflex Recovery in the Context of Antagonized Neuromuscular Block</strong></td>
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<tr>
<td>$244,720</td>
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<tr>
<th>Susan Vacas</th>
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<tbody>
<tr>
<td><strong>Principal Investigator</strong></td>
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<tr>
<td><strong>An International, Placebo-Controlled Factorial Trial to Assess the Impact of Clonidine and Aspirin in Patients Undergoing Noncardiac Surgery Who Are at Risk of Perioperative Cardiovascular Event</strong></td>
</tr>
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<td>$64,000</td>
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<table>
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<tr>
<th>Claus Niemann</th>
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<tbody>
<tr>
<td><strong>Principal Investigator</strong></td>
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<tr>
<td>HRSA, Individual Grant, 9/1/2011–8/31/2014</td>
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<tr>
<td><strong>The effect of therapeutic hypothermia on deceased donor renal graft outcomes – a randomized controlled trial from the Region 5 donor management goals workgroup</strong></td>
</tr>
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<td>$2,001,108</td>
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<tr>
<th>Ludmila Pawlikowska</th>
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<tbody>
<tr>
<td><strong>Principal Investigator</strong></td>
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<tr>
<td><strong>Genetic analysis of metabolic syndrome by admixture mapping in African American</strong></td>
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<td>$1,253,349</td>
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<tr>
<th>Arun Prakash Budde</th>
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<tbody>
<tr>
<td><strong>Principal Investigator</strong></td>
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<tr>
<td>Anesthesia Dept, Individual Grant, 7/1/2010–6/30/2014</td>
</tr>
<tr>
<td><strong>Investigating the Role of Innate Immune Cells and Pathways in Lung Ischemia Reperfusion (IR) Injury</strong></td>
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<tr>
<th>Jeffrey Sall</th>
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<tbody>
<tr>
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<tr>
<td>NIH/NICHD, Research Career Award, 2/1/2010–1/31/2014</td>
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<tr>
<td><strong>Volatile anesthetic alteration of neural precursor cell cycle and fate decisions</strong></td>
</tr>
<tr>
<td>$478,440</td>
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<tr>
<th>William Young</th>
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<tbody>
<tr>
<td><strong>Principal Investigator</strong></td>
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<tr>
<td>NIH/NINDS, Individual Grant, 1/1/2009–12/31/2013</td>
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<tr>
<td><strong>Hemodynamics of Cerebral Arteriovenous Malformations</strong></td>
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<td>$1,702,140</td>
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<th>Xiaobing Yu</th>
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<tbody>
<tr>
<td><strong>Principal Investigator</strong></td>
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<tr>
<td>Foundation for Anesthesia Education &amp; Research, Research Career Award, 11/1/2013–10/31/2014</td>
</tr>
<tr>
<td><strong>Integrative Study of Brain Vascular Malformations</strong></td>
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<tr>
<th>Eunice Zhou</th>
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<tbody>
<tr>
<td><strong>Principal Investigator</strong></td>
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<tr>
<td>UCSF Committee on Research, Individual Grant, 8/20/2012–6/20/2014</td>
</tr>
<tr>
<td><strong>The Pancreatic Cancer Secretome: Unbiased Biomarker Discovery and Detection</strong></td>
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<td>$29,178</td>
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<th>Hua Su</th>
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<tbody>
<tr>
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<tr>
<td>NIH/NICHD, Individual Grant, 8/1/2013–7/31/2015</td>
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<tr>
<td><strong>Recognition memory following early childhood anesthesia</strong></td>
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<tr>
<th>Mark Schumacher</th>
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<tr>
<td><strong>Principal Investigator</strong></td>
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<tr>
<td>Altarum Institute/Palladian Partners, Individual Grant, 6/15/2012–10/14/2014</td>
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<tr>
<td><strong>Interprofessional Development of pain education competencies</strong></td>
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<td>$266,292.90</td>
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<tr>
<td>Anesthesia Dept, Individual Grant, 7/1/2010–6/30/2014</td>
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<tr>
<td><strong>Predictors of spontaneous cerebral AVM hemorrhage</strong></td>
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<th>Feng Chen</th>
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<tr>
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<tr>
<td>NIH/NICHD, Individual Grant, 9/1/2013–3/31/2014</td>
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<td><strong>Integrative Study of Brain Vascular Malformations</strong></td>
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**James Marks**

Principal Investigator  
Evolving Diagnostic Antibodies for Botulinum Neurotoxins  
$1,345,613

**Mervyn Maze**

Principal Investigator  
Masimo Corporation, Clinical Trial, 6/1/2011–12/1/2013  
Detecting sleep hygiene with SEDline monitor  
$191,040

**Mervyn Maze**

Principal Investigator  
Masimo Corporation, Clinical Trial, 6/1/2011–12/1/2013  
Providing good sleep for ICU sedation  
$232,987

**Ludmila Pawlikowska**

Principal Investigator  
Genetic analysis of metabolic syndrome by admixture mapping in African American  
$1,253,349

**Arun Prakash Budde**

Principal Investigator  
Anesthesia Dept, Individual Grant, 7/1/2010–6/30/2014  
2013-2014 Department of Anesthesia Hamilton Endowment Fund Award  
$78,729

**Arun Prakash Budde**

Principal Investigator  
Foundation for Anesthesia Education & Research, Fellowship Grant, 1/1/2013–12/31/2013  
2013 Medical Student Anesthesia Research Fellowship Program  
$6,200

**Xiaobing Yu**

Principal Investigator  
Foundation for Anesthesia Education & Research, Research Career Award, 11/1/2013–10/31/2014  
Investigating the Role of Innate Immune Cells and Pathways in Lung Ischemia Reperfusion (IR) Injury  
$175,000

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**Rachel McKay**

Principal Investigator  
Effect of Anesthetic Choice (Sevoflurane versus Desflurane) on Speed and Sustained Nature of Airway Reflex Recovery in the Context of Antagonized Neuromuscular Block  
$244,720

**William Young**

Principal Investigator  
NIH/NINDS, Individual Grant, 1/1/2009–12/31/2013  
Hemodynamics of Cerebral Arteriovenous Malformations  
$1,702,140

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**Eunice Zhou**

Principal Investigator  
UCSF Department of Anesthesia and Perioperative Care | Anesthesia News | 2013 | 11
Peers Reviewed Publications


Brosnan H, Bickler PE. Xenon Neurotoxicity in Rat Hippocampal Slice Cultures Is Similar to Isoflurane and Sevoflurane. *Anesthesiology*; 2013 Apr 12.


Radke OC, Schneider T, Keller AR, Koch T. Spontaneous breathing during general anesthesia prevents the ventral redistribution of ventilation as detected by electrical impedance tomography: a randomized trial. Anesthesiology. 2012 Jun;116(6):1227-34.


In Memoriam: William L. Young

It is with profound sadness that we announce the passing of our dear colleague, William L. Young, MD, who was the James P. Livingston Endowed Chair in the Department of Anesthesia and Perioperative Care.

Dr. Young was the 2009 recipient of the American Society of Anesthesiologists Excellence in Research Award, the highest honor the ASA can bestow on an investigator. It is hard to imagine a more deserving recipient. An accomplished anesthesiologist, Bill was also a prolific investigator whose work had an impact on the scholarly development of neuroanesthesia as well as on our ability to understand the mechanisms, pathophysiology and care of patients with neurovascular disease. His establishment of the multidisciplinary UCSF Center for Cerebrovascular Research provided the vehicle for extending the boundaries of our specialty’s influence to include neurosurgery, radiology, neurology and other various neuroscience fields. In 2008, when interviewed for our department’s 50th anniversary, Bill said, “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.” It is this approach that distinguished his career – and which points the way for anesthesiology to continue to thrive. Bill grew up in Munster, Indiana, and attended both undergraduate and medical school at Indiana University. In 1985, after clinical anesthesia training at New York University Medical Center, he joined the faculty at the Columbia University College of Physicians and Surgeons, where he had completed clinical and research fellowships. He quickly evolved into a productive and successful NIH-funded investigator in the specialty of anesthesiology. In 2000, he relocated to UCSF where he became the James P. Livingston Professor and Vice Chair of Anesthesia and Perioperative Care. His unwavering dedication to excellence had an enormous impact on faculty members in our department and across the entire UCSF campus. For one, his productivity in research and NIH grant funding was incredibly consistent. He had continuous NIH funding since 1990, two concurrent NIH grants since 1994, and at least three, and up to five, NIH grants concurrently since 1999. He was the principal director of a program project grant, “Integrative Study of Brain Vascular Malformations,” which was renewed for a second five years. This remarkable run began when Bill was an early recipient of the FAER award system; his success supported the direction that FAER and the ASA pursued in those days.

Bill’s focus and calm dedication to excellence were inspiring, and he served as a role model for our entire faculty. The substance of his research was even more impressive. After early studies on the cerebral effects of anesthetics, he gradually moved to more unexplored pathophysiological areas in anesthesia, neurocritical care and intraoperative neurosurgery. This led to the understanding of reperfusion hyperemia or perfusion pressure breakthrough, which is associated with AVM treatment. The work also led to epidemiological, clinical risk prediction and imaging studies. When he arrived at UCSF, Bill approached cerebrovascular biology of vascular remodeling and angiogenesis using molecular and genetic techniques. Studying patients with giant cerebral aneurysms, he used “network” models, including innovative collaborations with bioengineers and imaging scientists. Bill was also someone the NIH turned to when it needed leaders. Since 1997, he served on various NIH review committees and, since 2005, he’d been a member of the Clinical Neuroscience and Disease (CND) Study Section. In 2008, he was selected to co-chair the first-ever NINDS workshop on vascular malformations of the brain. The workshop, which took place in Madrid, involved an international roster of some 50 clinical and basic science experts. In addition, Bill was instrumental in expanding the number of anesthesiologists conducting high-level basic and clinical research – filling a critical need that has been well recognized by ASA leadership and several Rovenstine Lecturers. He had remarkable success in helping junior faculty obtain career development awards, including serving as primary mentor on seven funded NIH K awards (K08, K23 and K25) and three American Heart Association development awards. He was one of the first to be recognized by the NIH for mentoring efforts by receipt of a K24 award in 1999. Several of his trainees are faculty in institutions that include Columbia, Cornell and UCSF. His editorial responsibilities were extensive, serving on the editorial boards of the Journal of the American Heart Association, Stroke and Neurosurgical Anesthesia – and previously on the Associate Editorial Board of Anesthesiology. He was also co-editor of a major text titled Cerebrovascular Disease and was one of four consulting editors for the 7th edition of Anesthesia, for which Ronald D. Miller is the primary editor. Perhaps the most intriguing evidence of Bill’s multifaceted approach to his work and his world was that he was a professional grade jazz pianist. He provided post-dinner music for our department’s 50th anniversary party, with more than 300 attendees. Why hire someone else when Bill could do the job as well as anyone? We should also acknowledge Bill’s wife, Chantal, who provided remarkable support in what was a remarkable career. By using the unique skill-sets gained from his training in anesthesia, Bill Young made major contributions to understanding both the biology and management of neurovascular disorders that many anesthesiologists must manage. He would say, “If anesthesiologists take care of vascular disease patients, then we should strive to understand the totality of the disease process and not accept any a priori limitations to the nature of the questions we ask nor investigations we pursue.” Indeed, his journey began at the bedside, thus instigating the most innovative and productive physiologic approach to understanding these disorders to date, conducted at the level of program director of an NIH program project grant. Reaching the limits of current physiologic technology, Bill recognized real progress would only occur through a thoughtful laboratory and bedside approach. He will be greatly missed.
New Interns & Residents

CLASS OF 2017

Ashish Agrawal
Marc Buren
Matthew Careskey
Denise Chang
Monica Chen
Gregory Chinn
Lusine Danakian
Marisa Hernandez-Morgan
Jordan Higgins
Nicole Jackman
Jeffrey Kim
Michael (Tre) Martyn
Kyle Sanders
Paul Su

CLASS OF 2016

Benedict Alter
Odmara Barreto-Chang
Atisa Beihaghi
Erika Brinson
Sarah Burke
Nicole Chao
Eve Cohen
Adrian Coon
Alessandro De Camilli
Tina Dong
Matthew Dudley
Kevin Efros
Melanie Hall
Christopher (Kit) Johnson
Tom Joseph
Shannon Klebe
Thomas (TJ) Krall
Laurent Menut
Andrea Olmos
Kristin Pappas
Jeremy Pearl
Ann Shah
Garrett Terracciano
Maxwell Thompson
Margie Vartanian
Adam Weiss
Dr. Ronald D. Miller’s colleagues, former students, and friends have chosen to honor his years of service to the University of California, San Francisco’s Department of Anesthesia and Perioperative Care by establishing a fundraising initiative for the Ronald D. Miller Distinguished Professorship in Anesthesia.

Please join us as we honor Dr. Ronald D. Miller and support the Ronald D. Miller Distinguished Professorship in Anesthesia. This fund will provide meaningful resources for continued excellence in clinical/translational research in anesthesiology and medicine overall. This goal is consistent with Dr. Miller’s dedication to clinical/translational research at UCSF’s Department of Anesthesia and Perioperative Care.

To make a gift or pledge to this initiative, or if you would like more information please contact Kevin McAteer, Executive Director of Development, Health Sciences at (415) 502-2404 or kmcateer@support.ucsf.edu.

Ronald D. Miller, MD