Residents Become Part of the UCSF Health QI Solution

The UCSF Department of Anesthesia and Perioperative Care has embraced UCSF Health and UCSF Graduate Medical Education (GME) efforts to incentivize hands-on design and implementation of quality improvement (QI) projects during residency training. The goal: ensure UCSF anesthesia residents finish their training with a thorough understanding of QI, while making an immediate and measurable contribution to improving the quality and safety of care.

Second-year residents (R3s) lead the projects with the guidance of Linda Liu, MD, who oversees the department’s efforts and two faculty mentors: Matthias Braehler, MD, PhD, and Alexandra Anderson, MD. In 2016, an anesthesia resident team successfully instituted a program to reduce post-operative nausea and vomiting (PONV), which they presented at the Western Anesthesia Resident’s Conference. This year’s team is working to ensure that the medical center’s anesthesiologists quickly implement emerging guidelines for reversing neuromuscular blockades.

“The residents pick the projects, but we make sure they align with departmental goals and we provide residents with resources,” says Liu. “The projects build on a strong culture of quality and patient safety that the medical center and GME have fostered.”

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With the losses of Drs. Bill Hamilton, Ted Eger, and Ernie Guy, 2017 was a difficult year for our Department and specialty. Dr. Guy was among the initial UCSF Anesthesia faculty hired after the Department was established in 1958, having been recruited by Dr. Stuart Cullen from the University of Iowa. He became the Chief of Anesthesia at SFGH from 1959–1973. In 1967, Dr. Hamilton was then recruited from the University of Iowa to follow Dr. Cullen as the Chair of Anesthesia at UCSF, building on Dr. Cullen’s initial successes to expand the Department’s clinical, research, and educational missions, while recruiting top notch talent whose work would yield important advances to the field. Among Dr. Hamilton’s recruits was Dr. Ted Eger, who would go on to establish the concept of MAC, and whose seminal research on anesthetic uptake and distribution was still ongoing in 2017. We celebrated Dr. Eger’s achievements at a memorial symposium on February 2, 2018.

While these losses have been devastating, we have been inspired by the hard work and dedication of these great people. Each was committed to advancing the field and to teaching the next generation(s) of anesthesiologists. Rooted firmly in this rich history, today we continue to strengthen our clinical enterprise, improve the educational experience of our learners, and make important research discoveries, while striving for a diverse, equitable, and inclusive environment for all of our patients, staff, learners, and faculty.

This issue describes some of this work. In the clinical arena, we report how advanced imaging is being used to improve outcomes for trauma patients, as well as how ongoing quality improvement efforts are improving clinical outcomes overall. We highlight the work of Lance Pangilinan, a valued member of our respiratory care therapist group at ZSFG since 2011. In the education domain, we focus on our newly established ACGME Acute Pain and Regional Anesthesiology fellowship, now in its first year. Finally, our research section describes Dr. Helen Kim’s breakthrough work on the connection between cerebral cavernous malformations (CCMs), and bacteria in the gut.

As always, thank you for reading – we welcome your feedback and appreciate your ongoing support.

Sincerely,
Michael A. Gropper, MD, PhD
Chair, UCSF Anesthesia and Perioperative Care

Message from the Chair
Celebrating the Visionaries

Building on a Culture of Patient Safety
Resident QI projects have been in place at UCSF Medical Center for almost a decade and have garnered national recognition for their early engagement of learners in improvement work and for the close partnership between GME and the health system. Residents receive a small financial reward for successfully completed projects and, this year, the number of projects by residents across specialty areas grew to 32.

“The process helps residents learn what it means to be a provider in this generation where ‘systems thinking’ is a critical competency,” says Niraj Sehgal, MD, MPH, vice-president and chief quality officer for UCSF Health. “Residents observe and experience our systems failures more than anyone; they should be actively engaged in designing the solutions to make us safer.”

Resident teams begin with submission of a proposed project to an internal review board that includes medical center and GME leadership. “While we want to make sure the projects align with Medical Center goals, the review process is more about helping to set up the projects and the residents for success,” says Sehgal.

As the entire UCSF Health System has become steeped in lean methodology, the process has evolved. Residents create project descriptions in a structured template, designed to find consensus on a problem that needs solving and on the problem drivers – before brainstorming a solution. Through multiple iterations, the mentors and the board help ensure each project has attainable goals for improving care in a patient population.

The PONV Project
Last year’s anesthesia resident team ultimately settled on PONV, because “A random audit of baseline data from the preceding year found we were only treating high-risk patients for PONV about 48 percent of the time,” says resident Phil Aguilar, MD.

The team set a goal that UCSF anaesthesiologists would identify all patients at high risk for PONV and administer at least 2 antiemetics to those patients preoperatively or intraoperatively 70 percent of the time. To properly identify the patients, the residents used a widely used, four-factor risk score: Non-smoker; female; a history of PONV or motion sickness; and the need for postoperative opioids. Patients with at least three of the factors are considered high risk.
“One challenge we had was that first-year residents may not know about this risk assessment and our electronic health record [EHR] had no automatic prompts during preoperative charting,” says resident Lisa Sun, MD.

Thus, the residents worked with a technology team to highlight the risk factors in the EHR during the preoperative assessment and then the QI team taught the entire department how to document both risk assessment and the administering of anti-emetics in the EHR.

The QI team also:

- Presented three lectures on PONV risk assessment and mitigation at the beginning of the year and repeated the information multiple times during Grand Rounds.
- Created a reference card for all anesthesia carts, which lays out the risk factors, and specifies the number and types of anti-emetics for each situation, along with proper dosage, side effects and costs.
- Reminded all residents, via a weekly page, to document their risk assessment and mitigation efforts.
- Added extra medications to carts to make as many options as possible easily accessible.
- Checked their data every two months and used the findings to provide feedback to the entire department on how it was doing.

By the end of the year, 79 percent of high-risk patients were receiving at least two anti-emetics prophylactically. Anecdotally, the PACU nurses felt there was less PONV and when residents began tracking the amount of rescue anti-emetics, the rates had come down to 10-15 percent.

“Even with zero risk factors, there is still a 10 percent chance of nausea in PACU,” says Aguilar.

To sustain improvement, the group has made sure that the reminder cards and extra drugs will remain in the carts, and the buttons in the EHR will also remain. In addition, resident Andrew Bishara, MD, is using the data to create a machine learning predictive algorithm for PONV in the EHR.

“[PONV awareness] has become more ingrained in how people think and that’s the key thing,” says Aguilar.

Reversing Neuromuscular Blockade

The 2017 project aims to ensure that UCSF anesthesia providers reverse patients who have had non-depolarizing neuromuscular blocking agents, unless patients have passed a standard of strength using a quantitative monitor. Failing to reverse a weakened respiratory system – or not confirming that the patient is fully recovered – risks aspiration, post-operative pneumonia and reintubation. In addition, multiple studies have associated failure to reverse with prolonged length of stay.

“That’s why there is a big push for the ASA to make this a standard of care,” says Anderson.

“At the beginning of the year, Matthias Braehler gave a lecture about current research and best practices,” says resident Jack Jeng, MD. “We wanted to make sure there was no disconnect between what we learn and what we do.”

Planning began in January, with project rollout beginning in July. Much of the initial six months was spent hashing out how best to measure outcomes and how, based on the available literature, to collect and track the data.

“Last year, based on our criteria, we did the right thing 71.6 percent of the time, so with the GME QI committee, we decided we would aim for a 10 percent relative improvement, to almost 79 percent,” says Jeng.

As they began to shape their project, the residents found inconsistent compliance might have had as much to do with a failure to document than with actually not reversing, says Anderson. Thus a goal of the project was to not just properly check and reverse all patients who need it, but to also document work being done.

To bring all residents on board, the team presented their project during Grand Rounds in July, including explaining how and why they arrived at what they believed would be the simplest possible approach to achieve their goal. That is: For every patient who receives a non-depolarizing muscle relaxant, success is defined as either, a) documenting with a quantitative monitor that the patient is fully recovered, or b) if a monitor is not available or if a patient is not fully recovered, then the patient must receive reversal medication.

“Reports from our EHR system are really impressive and with the help of our tech folks, we’ve been able to completely redesign documentation, which makes tracking project goals much easier, without increasing the time spent. In fact, in some cases we’ve been able to reduce the amount of clicks,” says Jeng. “And documenting is a great reminder that this is what you should be doing every case. Our hope is that awareness will change practice.”

He adds that support from department leadership and the investment of residents – who do a huge proportion of cases every year – are important success factors. “We [the residents] are the ones doing the work. If we’re in agreement that this is the best potential change, it is more likely to happen.”

“The residents have been amazing,” says Anderson. “They figured out all the specifics of what they would need and communicated effectively with the IT people to create a build that promotes compliance and enables us to track progress.”

A Commitment to QI

“The anesthesia faculty and residents are very dedicated to this program and have influenced other improvement work within and outside their department,” Sehgal says. “Michael Gropper, Linda Liu, Matt Aldrich and others deserve a ton of credit for helping cultivate and spread systems thinking.”

“The success of these projects and the support of the department has us thinking more broadly about QI and about expanding QI opportunities and incentives for the entire department,” says Liu.
Research Opens Window for Prevention of Cerebral Cavernous Malformations

In May 2017, epidemiologist Helen Kim, PhD, MPH, and her colleagues published a breakthrough study in *Nature* that was the first to establish a connection between cerebral cavernous malformations (CCMs), a disorder of blood vessels in the brain, and the microbiome – bacteria in the gut. The article, “Endothelial TLR4 and the Microbiome Drive Cerebral Cavernous Malformations,” caused a stir because it suggested there might be a way to prevent these malformations, which can cause life-threatening hemorrhagic strokes, seizures, headaches and/or neurological deficits.

An associate professor in the UCSF Department of Anesthesia and Perioperative Care and director of the department’s Center for Cerebrovascular Research (CCR), Kim is also the co-leader of the NIH-funded Brain Vascular Malformation Consortium study on cerebral cavernous malformations. The study is now in its ninth funded year and has been following patients with familial CCM and collecting detailed clinical, imaging, genotype and gene expression data. By contributing data from patients with familial CCM, Kim’s team played a major role in demonstrating why the animal findings highlighted in the *Nature* article offer real promise for prevention in humans.

**Overlapping Findings Lead to Fruitful Collaboration**

In 2014, Kim and her team published an article in *Cerebrovascular Diseases*, which suggested that common genetic variation in inflammatory and immune response genes influences disease severity in familial CCM patients who all carry the same disease-causing mutation in *CCM1/KRIT1* (Q455X). This gene mutation is especially prevalent in Hispanic families with ties to the Southwestern United States. Kim’s collaborator and co-leader, Leslie Morrison, MD, a neurologist from the University of New Mexico, recruited the familial CCM patients with the *CCM1/KRIT1* Q455X mutation.

“We’ve known for a long time that patients who have the same gene mutation, who are of similar age, or even from the same family, can have completely different disease presentations. One person could have many brain lesions and be completely asymptomatic, while their relative with a similar number of lesions could have a long history of seizures, headaches or a hemorrhagic stroke. So we hypothesized that there must be additional genetic or environmental modifiers of CCM disease severity.”

Working from that hypothesis, the UCSF team ran a genome-wide panel of half a million genetic variants in 180 CCM subjects, and focused on 56 inflammatory and immune response genes, looking for an association of common variants in these genes with history of hemorrhage, total number of lesions and total number of large lesions. “The strongest findings and ones that survived correction for multiple testing were genetic variants in the toll-like receptor 4 (TLR4) and CD14 genes, which code for proteins that work together to recognize pathogens and activate the innate immune response,” says Kim.

Simultaneously, a team at the University of Pennsylvania led by Mark Kahn, MD, had uncovered TLR4 as an important upstream activator of a signaling pathway they showed is necessary for CCM lesion formation in their mouse models. “They recognized the limitations of their mouse models… [including] that their neonatal mice only develop lesions in the hind brain and, well, animals are not humans,” says Kim. That’s when they contacted Kim’s team to further explore the relevance of these findings in the cohort of familial CCM patients that she has been studying.

In parallel, the Penn team devised a series of experiments in their mouse models – including analyzing bacteria in mouse feces – which led them to identifying a gram negative bacterium whose presence correlated with their mice developing CCM lesions. Changing the gut bacteria using antibiotics and fecal transplants or anti-TLR4 blocking agents dramatically prevented the mice from developing lesions. “These results are super exciting as they imply that changing the gut bacteria can have a profound effect on CCM lesion formation,” says Kim.

**Next Step: Advance Human Studies**

Now the challenge is to test this hypothesis in humans, something Kim’s team is uniquely prepared to do as part of its ongoing CCM study.

“In collaboration with the Penn group, we will collect and analyze stool specimens from study participants and use RNA sequencing to determine whether certain bacteria are present at higher frequency and if those bacteria are correlated with greater lesion burden in humans with CCM,” says Kim.

“If they are, it suggests that if you change a person’s microbiome by diet or antibiotics, you may be able to prevent new lesion formation in familial cases. This would be groundbreaking as there is currently no approved medical therapy for treating patients with familial or... Continued on next page
Sporadic forms of CCM.”

She adds that several observations in humans suggest that the microbiome may be an important environmental modifier of CCM disease severity. In another 2014 paper published by Kim’s group, they found an inverse correlation between cardiovascular risk factors, in particular obesity, and risk of greater lesions.

“At the time, the results seemed paradoxical but diet studies have shown that obese individuals have lower levels of gram-negative bacteria in the gut than lean individuals,” says Kim. This could provide a biological explanation for the observed correlation – that leaner patients with more gram-negative bacteria in their gut – the type of bacteria that activates the TLR4 signaling pathway – have a greater number of CCM lesions.

“In our next phase, we hope to get funding to test these hypotheses further in humans,” says Kim. She and her collaborators are currently conducting a pilot study in which they are collecting microbiome samples from familial CCM patients.

“This work is especially exciting, because, in parallel, two research groups came to the same conclusion,” says Kim. “That indicates we are on the right path, and brings us closer to a potential medical therapy that could have life-changing implications for patients living with CCM.”

“A New ACGME-Accredited Regional Anesthesia and Acute Pain Medicine Fellowship

This year, the UCSF Department of Anesthesia and Perioperative Care became one of the first in the country to establish an ACGME-accredited fellowship in Regional Anesthesia and Acute Pain.

Clinical faculty member Pedram Aleshi, MD, oversees the fellowship and was instrumental in its creation. Iman Hadaya, MD, is the School’s first official ACGME fellow in this sub-specialty. We profile them below.

Pedram Aleshi:
Regional Anesthesia Specialist, Patient Advocate

A few years ago, a group of regional anesthesia physicians from academic institutions in the United States and Canada, began discussing the idea of getting ACGME accreditation for a regional anesthesia and acute pain fellowship. All were from institutions that already had a fellowship in place, but felt ACGME accreditation was a logical next step. They defined what such a fellowship should look like and applied, with overall ACGME approval coming in October 2016 and a deadline in early December for individual program applications.

“That gave us less than a month and a half to get our own application in,” says Pedram Aleshi, MD, of the UCSF Department of Anesthesia and Perioperative Care and a member of the group. UCSF was one of only nine programs in the country to have its application approved for 2017.

Accreditation changes a fellowship that had been in place for a number of years. Perhaps the most significant change is an increased emphasis on acute pain and on multimodal pharmacologic approaches to treat it. “We have a much larger arsenal of tools to treat pain after complex surgeries, and with the opioid crisis, this is especially important,” says Aleshi. “Using that arsenal effectively demands another level of expertise and our fellows will be much better trained in this aspect of treating pain.”

These types of changes, says Aleshi, will be a boon for prospective fellows and for the sub-specialty more generally. “Once you’re ACGME fellowship-trained, hiring institutions have a much clearer idea of what they’re getting and the quality of graduates of fellowships improves tremendously.”

Seeing Anesthesia Through Patients’ Eyes

In addition to his duties overseeing the regional anesthesia and acute pain fellowship and the department’s regional anesthesia service, Aleshi – originally from Iran before he moved to California...
Regional Anesthesia

continued from previous page

during high school – is well known for the attention he pays to his patients’ experience. In June 2017, he won the UCSF Great Experience Award, a monthly award that honors caregivers for their attention to patients and their families.

He was nominated because a patient – a single mom, worried about her kids – wrote him a long letter, expressing her gratitude for the personal, caring approach he took to administering her anesthesia. “I feel those few minutes before surgery are a great opportunity to connect with people and make their worst day a much, much better experience,” says Aleshi.

In part, he attributes his attention to this aspect of care to his personality and training. “The physician staying calm comes from within and…when I talk to patients in the OR, some residents say my voice and being there is half an anesthetic for a patient,” he laughs. His fellowship training in OB anesthesia also is a factor. “You’re taking care of awake patients, who are in distress and I think part of my interest comes from that, from learning how important it is to calm someone down when they’re under stress,” he says.

But he says conversations with his wife, Diane Sliwka, MD, have been instrumental in his thinking more deeply about how to effectively communicate with patients. At UCSF Health, Sliwka is the executive medical director of Patient Experience and chief physician experience officer. Not only do the two frequently discuss patient experience, but after attending a patient communication course his wife designed, Aleshi pushed for tailoring the course to anesthesia providers.

“We’ve now offered that [tailored] course twice,” he says. “Each time we had 14-15 people and most thought it was great and very helpful.”

His goal now is to measure the impact the course has on patient experience. He completed a pilot study in which he surveyed patients to compare the experience of those who had anesthesia from providers who had taken the training versus providers who had not. Those providers who took the course did much better. Aleshi also devised anesthesia-related questions for the Press-Ganey survey the hospital has been using for the last few years.

“My good days are when I make more connections with people. That emotional correction is gratifying and I love knowing that I’ve made a difference in how my patients feel, how they go to sleep and wake up,” he says.

Iman Hadaya, MD

UCSF Department of Anesthesia and Perioperative Care  |  Anesthesia News  |  Spring 2018  | 6
In the spring of 2017, Lance Pangilinan, RRT, was awarded the ZSFG Respiratory Care Services (RCS) PHIL Award for outstanding clinical practice. According to the FACES Foundation, which sponsors the award, the PHIL Award is the only nationally recognized hospital-based program dedicated to honoring outstanding respiratory therapists.

Since 2011, Pangilinan has been a valued member of the Priscilla Chan and Mark Zuckerberg San Francisco General Hospital and Trauma Center’s Department of Respiratory Care Services (RCS). In addition, as a part of the RCS research team, he has co-authored five published abstracts and two peer reviewed publications on control of compression volume loss during mechanical ventilation, incorporation of capnography with mask oxygen delivery systems and the efficacy of aerosolized prostacyclin to treat hypoxemia in severe Acute Respiratory Distress Syndrome (ARDS). In addition, he presented two abstracts at the 2016 International Respiratory Congress.

“It’s an amazing feeling,” says Pangilinan, of winning the PHIL Award. “It wasn’t expected and I appreciate my peers for making me the recipient. It’s still very surreal to be recognized across the nation as one of best respiratory therapists.”

Family Tradition Leads to Career in RT

Pangilinan was not locked in on respiratory therapy when he began his freshman year at San Francisco State University, after growing up in Daly City and attending high school in San Francisco.

“Like a lot of first-year college students, I didn’t know what I wanted to do, though I did think it would be something in the medical field,” he says. “My mom and sister are nurses and several family members are RTs in the Bay Area.”

After completing what at the time was a two-year program, he began working at ZSFG in 2011. It was there he developed a real passion for being part of the respiratory field. “I grew to love it,” he says. “I think it’s because I was working in an environment where I can practice evidence-based medicine and see the full effect it has on patients.”

Moving Into Research

Contributing to the evidence base has become increasingly important to Pangilinan, who has been involved with a number of studies. Compression volume has been one important focus area.

“When we ventilate patients, it’s important to get accurate compression volume readings, but not all ventilators are the same,” he says. “We did a study that found some of the ventilators measure compression volume differently and if we don’t factor in a loss in compression volume, we can under-ventilate patients.” His hope is that studies like this can make RTs more aware of the tools they are using so they can better serve their patients.

Another area of research Pangilinan has become involved with is capnography – monitoring the concentration of carbon dioxide (CO2) in the respiratory gases. “As CO2 builds, acidity starts to drop and it can cause altered mental status and cause a patient to code; by keeping CO2 in a safe range, we can prevent patients from coding” he says.

To that end, Pangilinan was part of a team testing various capnography monitoring devices for accuracy. “All of them worked well, but one was superior,” says Pangilinan.

Helping New Residents with Ventilation

Pangilinan says that respiratory therapists also have an important role to play in familiarizing new residents with protocols for delivering safe ventilation. “Our QA director, Rich Kallet, who helped develop the protocol for ARDS and has had a number of important papers, leads these classes,” says Pangilinan. “As an institution, we know these protocols well and we’re here to help residents understand how to apply them.”

Pangilinan says the ZSFG RTs’ pride in their professionalism and in their commitment to ongoing learning has earned the trust of their physician and CRNA colleagues. “Residents put a lot of faith in us to help them and I’m proud that they sometimes look for our help with lifesaving treatments,” he says.
Ask the Expert

Benn Lancman, MBBS

Benn Lancman, MBBS, is director of trauma anesthesia at Priscilla Chan and Mark Zuckerberg San Francisco General Hospital and Trauma Center (ZSFG).

How is advanced imaging changing the baseline skill set for trauma anesthesia?

In the majority of serious trauma cases, speed is critical, as is the need to more deeply understand the many variables that contribute to safe, high-quality care in injured patients. That’s why both point-of-care ultrasound (POCUS) and trans-esophageal echocardiography (TEE) are quickly becoming indispensable skills.

POCUS

Over the last 10-15 years, how we approach vascular access during trauma has changed. Traditionally, when getting an arterial line we’re taught to feel for the pulse in the wrist, and if it’s strong getting it in isn’t really a problem. But trauma patients are often bleeding and in shock. They can be hypotensive and tachycardic. These factors all contribute to making it near impossible to insert an arterial line using a blind technique. This isn’t even considering the number of patients who have extremity injuries, which can significantly limit the potential access sites. By using POCUS, the pulse doesn’t matter. You can see the vessel on the ultrasound screen and we’re not relying on tactile sensation. POCUS is becoming an indispensable tool for the rapid reliable insertion of venous and arterial lines in our sickest patients.

In addition, at places like ZSFG, it’s not uncommon for our patients to have other chronic diseases or complications, so venous access for blood or other resuscitation fluid can be challenging, even on a good day. Ultrasound enables us to go from being able to find no vessels to palpate to being able to find deeper vessels and insert much larger IVs than we could have done blind. This facilitates surgery in a more efficient and timely fashion.

TEE

The use of TEE is also on the rise, because there is increasing evidence that it allows us to assess so many more variables. In any trauma case, anesthesiologists are interested in the delivery of oxygen to tissues. Traditionally, we’ve used blood pressure as a surrogate for cardiac output, but pressure does not always equate with flow. In a traumatically injured patient, blood pressure can be an unreliable correlate for flow, so our decision about how to treat needs to consider additional variables like ongoing blood loss, direct cardiac injury, the types of anesthetic agents we’re using, patient comorbidities – a multitude of considerations. Often, the only way to get a rapid assessment of the different facets involved in delivering oxygen to tissues is visualize the heart with echo.

That – and the literature’s support for use of focused TEE for major hemodynamic instability – is why, over the last 15 years or so, there’s been a big push to make sure anesthesiologists are capable of using TEE in the operative setting. For traumatic patients receiving massive transfusions, it’s a critical tool for assessing ongoing volume status and tailoring the resuscitation to the patient.

Providing Education, Experience

The question becomes how to make sure all trauma anesthesiologists get the training and experience they need. Certainly, vascular access using POCUS is now considered standard of care and our residents get a sufficient level of exposure to use ultrasound for that purpose, but TEE is a little more complicated.

The American Society of Anesthesiologists, through the Society of Cardiovascular Anesthesiologists, is trying to create standards for how many TEE procedures per year are adequate to maintain a proper skill level. It’s definitely a concern because without proper experience, people can misinterpret the data and this can negatively influence treatment decisions. There are really two parts to the challenge: How do we get the pictures? And who will interpret the pictures?

To be clear: we’re not trying to replace diagnostic scans that cardiologists do or to replace their role in diagnosing cardiac disease. Our focus is on clinical questions to address trauma, where speed is essential. A diagnostic TEE takes 30-40 minutes; we have a different lens in that we’re trying to rapidly assess dynamic factors and act on them.

We need to get our trainees and attendings the necessary experience, but because ZSFG is not a cardiac center, it can be a challenge to get providers enough TEE exams to meet the benchmark. One part of the solution, therefore, is high-fidelity simulators, which do a fantastic job of simulating the psychomotor and cognitive steps. Trans-thoracic echo will also be an important piece, because it provides many more opportunities to non-invasively look at images of the heart.

We are getting to the point where we’re comfortable using emergent TEE; it’s no longer the realm of enthusiasts like myself, but becoming standard for any anesthesiologist. In fact, beyond trauma, I expect we will also eventually use echo for focused preoperative exams in high-risk patients undergoing elective procedures. Today we listen to the heart and lungs with a stethoscope, but if we have a tool we’re just as comfortable with that gives us much higher quality, more detailed information about the cardiorespiratory system, why not use that?
New Faculty

Career Faculty

Claudia Benkwitz, MD, PhD
Associate Professor
Joined Faculty October 2017
ADVANCED DEGREE
PhD, University of Bonn and Wuerzburg, Germany
MEDICAL SCHOOL
University of Bonn and Wuerzburg, Germany
INTERNSHIP
Pediatrics
Janet Weis Children’s Hospital
RESIDENCIES
Anesthesiology, University of Wuerzburg, Germany
Anesthesiology, Harvard Medical School
FELLOWSHIPS
Research Fellow
University of Wuerzburg, Germany
Pediatric Anesthesiology
Stanford University School of Medicine
Advanced Training in Pediatric Cardiac Anesthesia
Stanford University School of Medicine
PREVIOUS EMPLOYMENT
Research Scientist
University of Wuerzburg, Germany
Instructor
Lucile Packard Children’s Hospital
Assistant Professor
Monroe Carell Children's Hospital
Vanderbilt University

Amber Borucki, MD
Assistant Clinical Professor
Joined Faculty August 2017
MEDICAL SCHOOL
Rush Medical College
INTERNSHIP
Internal Medicine
University of Illinois College of Medicine at Advocate Christ Medical Center
RESIDENCY
Anesthesiology
University of Chicago
FELLOWSHIPS
Pediatric Anesthesiology
Boston Children’s Hospital
Combined Pediatric & Adult Pain Fellowship
Boston Children’s Hospital
Brigham & Women’s Hospital
Beth Israel Deaconess Medical Center
PREVIOUS EMPLOYMENT
Pediatric and Adult Anesthesiologist
Reno Tahoe Anesthesia
St. Mary’s Regional Medical Center

Odmara Barreto-Chang, MD, PhD
Clinical Instructor and Research Fellow, Training in Clinical Research (TICR) Program
Joined Faculty August 2017
ADVANCED DEGREE
PhD, Neurosciences
Stanford University School of Medicine
MEDICAL SCHOOL
Stanford University School of Medicine
INTERNSHIP
General Surgery
Stanford University School of Medicine
RESIDENCY
Anesthesiology
UCSF

Carolina Bagga, MD
Associate Physician Diplomate
Joined Faculty December 2017
MEDICAL SCHOOL
New York University School of Medicine
INTERNSHIP
Anesthesiology
UCSF
RESIDENCY
Anesthesiology
UCSF
FELLOWSHIP
Pediatric Anesthesiology
Stanford University School of Medicine
PREVIOUS EMPLOYMENT
Attending Anesthesiologist
Anesthesia Medical Group of Santa Cruz

Christopher Abrecht, MD
Assistant Clinical Professor
Joined Faculty August 2017
MEDICAL SCHOOL
New York University
INTERNSHIP
Internal Medicine
California Pacific Medical Center
RESIDENCY
Anesthesiology
Brigham and Women’s Hospital
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<td>Vancouver General Hospital</td>
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<tr>
<td>Rishi Kothari, MD</td>
<td>Clinical Instructor</td>
<td>Non-ACGME Liver Transplant Anesthesiology Fellow</td>
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<td>JOINED FACULTY August 2017</td>
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<tr>
<td>Marilyn Michelow, MD</td>
<td>Assistant Clinical Professor</td>
<td>Joined Faculty November 2017</td>
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</table>
John Monks, MD  
Assistant Professor  
Joined Faculty September 2017  
MEDICAL SCHOOL  
Duke University School of Medicine  
INTERNSHIP  
Internal Medicine  
UCSF  
RESIDENCY  
Anesthesiology, UCSF  
PREVIOUS EMPLOYMENT  
Attending Anesthesiologist  
East Bay Anesthesiology Medical Group  
Alta Bates Summit Medical Center

Megha Parekh, MD  
Clinical Instructor  
Non-ACGME Trauma & Acute Care Fellow  
Joined Faculty October 2017  
MEDICAL SCHOOL  
Georgetown University School of Medicine  
INTERNSHIP  
Otolaryngology-Head and Neck Surgery  
UCSF  
RESIDENCIES  
Otolaryngology-Head and Neck Surgery  
UCSF  
Anesthesiology  
UCSF

Ann Cai Shah, MD  
Assistant Clinical Professor  
Joined Faculty August 2017  
MEDICAL SCHOOL  
Harvard Medical School  
INTERNSHIP  
Anesthesiology  
UCSF  
RESIDENCY  
Anesthesiology  
UCSF  
FELLOWSHIPS  
Pain Medicine  
UCSF

Prasad Shirvalkar, MD, PhD  
Assistant Clinical Professor  
Joined Faculty October 2017  
ADVANCED DEGREE  
PhD, Icahn School of Medicine at Mount Sinai  
MEDICAL SCHOOL  
Icahn School of Medicine at Mount Sinai  
INTERNSHIP  
Neurology  
New York Presbyterian-Weill Cornell College and Memorial Sloan Kettering Cancer Center  
RESIDENCY  
Neurology  
New York Presbyterian-Weill Cornell College and Memorial Sloan Kettering Cancer Center  
FELLOWSHIPS  
Post-doctoral Fellowship, Neuroscience  
Rockefeller University  
Pain Medicine  
UCSF

Wendy Smith, MD  
Assistant Clinical Professor  
Joined Faculty November 2017  
MEDICAL SCHOOL  
Stony Brook University Medical Center  
INTERNSHIP  
Anesthesiology  
UCSF  
RESIDENCY  
Anesthesiology  
UCSF  
FELLOWSHIPS  
Critical Care Medicine  
UCSF  
Cardiac Anesthesiology  
UCSF

Solina Tith, MD  
Associate Physician Diplomate  
Joined Faculty October 2017  
MEDICAL SCHOOL  
Oregon Health and Science University  
INTERNSHIP  
Anesthesiology and Pain Medicine  
University of Washington  
RESIDENCY  
Anesthesiology and Pain Medicine  
University of Washington  
PREVIOUS EMPLOYMENT  
Acting Assistant Professor  
University of Washington
Visiting Faculty

Tyler Law, MS, MD
Visiting Clinical Instructor
Global Health
Anesthesiology Fellow
HEAL Initiative Global Health Fellowship
Joined faculty July 2017

ADVANCED DEGREE
MS, Health Policy, Planning and Financing
London School of Economics
London School of Hygiene and Tropical Medicine

MEDICAL SCHOOL
Queen’s University, Kingston, Canada

RESIDENCY
Anesthesiology (Including 2-year resident certificate course in Global Health)
University of Toronto

Linda Zhou, MBBS
Visiting Assistant Professor
Joined Faculty November 2017

MEDICAL SCHOOL
University of Otago, New Zealand

RESIDENCY
Anesthesiology
Various Hospitals in New Zealand, including
The Wellington Public Hospital, Hutt Valley Hospital, and Wanganui Hospital

FELLOWSHIP
Cardiothoracic Anesthesia
Wellington Public Hospital, New Zealand

PREVIOUS EMPLOYMENT
Consultant Anesthetist
Wellington Public Hospital, New Zealand

New Residents CLASS OF 2020

Syed Ali
Sanjay Belani
Danielle Binler
David Bluhm

Jared Brown
Amy Chen
Catherine Chiu
Chris Cosden

Michael Curtis
Anjali Dixit
Nellie Forman
Jasmine Fu

Kathryn Iwata
Erica Langnas
Won Lee
Liz Liu

Kevin Ma
Benjamin Marsh
Dylan Masters
Vivian Pham

Elliot Schwartz
Ashley Sharp
David Steinhardt
Faculty Fall 2017

Christopher Abrecht, MD
CAMPUS APPOINTMENT
Department of Anesthesia and Perioperative Care Pain QI Champion

Pedram Aleshi, MD
CAMPUS AWARD
UCSF Health Great Experience Award (June 2017)

Charlene Blake, MD, PhD
CAMPUS AWARD
Excellence in Teaching Award
The Academy of Medical Educators
UCSF School of Medicine

Catherine Chen, MD, MPH
CAMPUS APPOINTMENT
Core Faculty Member, UCSF Philip R. Lee Institute for Health Policy Studies
EXTRAMURAL AWARD
OptumLabs Data Warehouse Research Credit ($60,000)

Marla Ferschl, MD
CAMPUS APPOINTMENT
Director, Fetal Anesthesia Service

Seema Gandhi, MD
CAMPUS AWARD
UCSF Sustainability Award
Dr. Gandhi’s work aims to reduce waste generated from daily operations in the UCSF ORs. She explored three areas of concern: operating room (OR) energy use, perioperative waste and anesthesia gas reduction.
CAMPUS APPOINTMENT
Member, UCSF School of Medicine Faculty Council (2017-2020)

Adrian Gelb, MB ChB
CAMPUS AWARD
2017-2019 Edward A. Dickson Faculty Emeritus Professorship

George Gregory, MD
CAMPUS HONOR
The George A. Gregory Global Health Endowment Established

Irfan Kathiriya, MD, PhD
EXTRAMURAL AWARD
Hellman Family Award for Early Career Faculty

Philip Kurien, MD
CAMPUS APPOINTMENT
Department of Anesthesia and Perioperative Care Severinghaus Assistant Professor, 2016-2018

Benn Lancman, MBBS
(with Julin Tang, MD)
CAMPUS AWARD
SFGH Foundation Hearts Grant Tranesophageal Echocardiography Simulator to Improve the Care for Traumatically Injured Patients

Merlin Larson, MD
EXTRAMURAL APPOINTMENT
Chairman of Task Force on History, California Society of Anesthesiologists
EXTRAMURAL APPOINTMENT
Chairman of Liaison Committee, Wood Library Museum of Anesthesiology, Schaumburg, Illinois

Jacqueline Leung, MD, MPH
EXTRAMURAL AWARD
Interviewed for Anesthesiology Journal podcast (Click here to listen)

Jennifer Lucero, MD
CAMPUS APPOINTMENTS
UCSF School of Medicine Differences Matter Community Ambassador

Dorre Nicholau, MD, PhD
CAMPUS AWARD
2016-2017 UCSF School of Medicine Maxine Papadakis Award for Faculty Professionalism and Respect

Oliver Radke, MD, PhD
EXTRAMURAL APPOINTMENT
Doktor Medicinae Habilitatus University of Dresden, Germany

Gabriel Sarah, MD
CAMPUS APPOINTMENT
UCSF School of Medicine High Intensity Teaching Position, Medical Student Longitudinal Coach
Member, UCSF Academic Senate, Committee on Academic Freedom
Member, UCSF School of Medicine Faculty Council (2016-2019)

Mark Schumacher, PhD, MD
EXTRAMURAL APPOINTMENT
Member, Committee on Pain Management and Regulatory Strategies to Address Prescription Opioid Abuse


Julin Tang, MD
(with Benn Lancman, MBBS)
CAMPUS AWARD
SFGH Foundation Hearts Grant Tranesophageal Echocardiography Simulator to Improve the Care for Traumatically Injured Patients.

Jessica Tashjian, MD
CAMPUS APPOINTMENT
UCSF School of Medicine Teaching Scholars Program

Elizabeth Whitlock, MD, MS
EXTRAMURAL AWARD
2017 International Anesthesia Research Society (IARS) Meeting Best Clinical Abstract Award
“Persistent Pain is Associated with Accelerated Memory Decline and Dementia in a Longitudinal Cohort of Elders.”
Journal of the American Medical Association (JAMA), Reuters, & NYT features, “Association Between Persistent Pain and Memory Decline and Dementia in a Longitudinal Cohort of Elders” Foundation for Anesthesia Education and Research (FAER) Mentored Research Training Grant
Dr. Whitlock’s study uses epidemiologic data from the Health and Retirement Study (a publicly-funded study of aging in America which has followed over 37,000 elders throughout late life) to look at the cognitive change people experience both before and after heart procedures

Arthur Wood, MD
CAMPUS APPOINTMENT
UCSF School of Medicine John A. Watson Scholar

Wei Zhou, MD, PhD
CAMPUS APPOINTMENT
Department of Anesthesia and Perioperative Care Severinghaus Assistant Professor, 2016-2018
Residents

Ashish Agrawal, MD (Anesthesia Residency Class of 2017, 2017-2018 Anesthesia Critical Care Medicine Fellow)

CAMPUS AWARD
UCSF Clinical and Translational Science Institute (CTSI) Research Funding
“Comparison Of Two Techniques To Measure Optic Nerve Sheath Diameter In Patients At Risk For Increased Intracranial Pressure.”

Gregory Chinn, MD (Anesthesia Residency Class of 2017)

CAMPUS AWARD
Mark A. Rosen Award for Resident Scholarship

Jeffrey Kim, MD (Anesthesia Residency Class of 2017)

CAMPUS AWARD
Stuart C. Cullen Award for Excellence in Clinical Anesthesia

Masood Memarzadeh, MD (Anesthesia Residency Class of 2017 and 2017-2018 Pediatric Anesthesia Fellow)

CAMPUS AWARD
Jeffrey A. Katz Award for Work Ethic and Professionalism in Patient Care

Michael Wu, MD (Anesthesia Residency Class of 2018)

EXTRAMURAL AWARD
2017 Society for Obstetric Anesthesia and Perinatology (SOAP) Meeting
Most Outstanding Case Report Award

“Thrombosed Mechanical Heart Valves Requiring Emergent Cesarean Delivery and Extracorporeal Membranous Oxygenation”

Dr. Wu prepared his case report under the guidance of Assistant Professor Atisa Britton, MD (then an OB Anesthesiology Fellow), Assistant Professor Jessica Tashjian, MD, and Associate Professor Pedram Aleshi, MD.

Anesthesia and Perioperative Care Resident-Led UCSF Patient Care Fund Proposal Awarded

“Provide Non-Pharmacological Anxiolysis In The Perioperative Setting Using Evidence-Based Music/Media Therapy With Mobile Modules”

Michael Jung, MD (Anesthesia Residency Class of 2019)

Steven Hur, MD (Anesthesia Residency Class of 2019)

McLean House II, MD (Anesthesia Residency Class of 2019)

WARC 2017
UCSF Anesthesia residents authored the following presentations at the WARC 2017 meeting, held at OHSU.

“Airway Fire During Jet Ventilation and CO2 Laser”

Steven Hur, MD (Anesthesia Residency Class of 2019)

Valeria Cárcamo-Cavazos, MD (Anesthesia Residency Class of 2019)

Michael Jung, MD (Anesthesia Residency Class of 2019)

“An Unusual Hyperechoic Structure Seen Adjacent To The Pulmonic Valve With Intraoperative Transesophageal Echocardiography”

Jacob Cecil, MD (Anesthesia Residency Class of 2019)

“Case Report: Respiratory Failure, Metabolic Acidosis, And Fluid Overload Caused By Bladder Fluid Irrigation During Holmium Laser Removal Of The Prostate”

Andrew Vargas, MD (Anesthesia Residency Class of 2019)

“Cerebral Oxygen Desaturation Associated With Sternal Retraction During Coronary Artery Bypass Grafting”

Josemíne Carey, MD (Anesthesia Residency Class of 2017)

“Cooled Radiofrequency Ablation For Pain Associated With Avascular Necrosis Of Femoral Head In Children”

Esther Lee, MD (Anesthesia Residency Class of 2018)

Tina Yu, MD (Anesthesia Residency Class of 2018)

“Improving Compliance To Evidence-Based Anti-Emetic Prophylaxis For Patients At High Risk For Post-Operative Nausea And Vomiting”

Charles Aguilar, MD (Anesthesia Residency Class of 2018)

Esther Lee, MD (Anesthesia Residency Class of 2018)

“Thrombosed Mechanical Heart Valves Requiring Emergent Cesarean Delivery and Extracorporeal Membranous Oxygenation”

Michael Jung, MD (Anesthesia Residency Class of 2019)

Jason Lang, MD (Anesthesia Residency Class of 2018)

Sandeep Sabhlok, MD (Anesthesia Residency Class of 2018)

Andrew Bishara, MD (Anesthesia Residency Class of 2018)

Jane Yu, MD (Anesthesia Residency Class of 2018)

“Informing Pediatric Surgeons About Anesthesia-Related Neurotoxicity: An Educational Intervention’s Effect On Elective Surgeries In Children Under One Year Of Age”

Allison Thoeny, MD (Anesthesia Residency Class of 2017)

“Left Ventricular Hypertrophy Secondary To Tracheal Bronchus”

Alec Peniche, MD (Anesthesia Residency Class of 2017)

“Refractory Intraoperative Hypoxemia Secondary To Tracheal Bronchus”

L. Mclean House II, MD (Anesthesia Residency Class of 2019)

“Assessing Patient Satisfaction With Anesthesia-Related Neurotoxicity: An Educational Intervention’s Effect On Elective Surgeries In Children Under One Year Of Age”

Marisa Hernandez-Morgan, MD (Anesthesia Residency Class of 2017)

“Comparing Two Techniques To Measure Optic Nerve Sheath Diameter In Patients At Risk For Increased Intracranial Pressure.”

Michael Jung, MD, MBA (Anesthesia Residency Class of 2019)
“Triple Threat: Hemiplegic Migraine, Paradoxical Vocal Cord Dysfunction And Postoperative Seizure In A Patient Undergoing ERCP”

Lisa Sun, MD
(Anesthesia Residency Class of 2018)

“Urgent Awake Fiberoptic Intubation For Acute Airway Obstruction: Lessons Learned In Airway Management”

Jay Rajan, MD
(Anesthesia Residency Class of 2019)


A record number of abstracts were accepted from UCSF Anesthesia Residents and Fellows at the January 2017 NANS Meeting.

Christopher Abrecht, MD
(2016-2017 Anesthesia Pain Fellow)
January 2017 North American Neuromodulation Society Meeting
Abstract “Salvage Using In Situ Electrodes from Traditional Paresthesia-Based Manufacturers: A Case Series”

Deepali Dhar, MD
(2016-2017 Anesthesia Pain Fellow)
January 2017 North American Neuromodulation Society Meeting
Abstract “Use of Psychological Preparation/Intervention Intraoperatively to Improve Patient Comfort During Spinal Cord Stimulator Implant”

Keeley Dohmeier, MD
(2016-2017 Anesthesia Pain Fellow)
January 2017 North American Neuromodulation Society Meeting
Abstract “High-Frequency 10 kHz Spinal Cord Stimulation Used to Treat Refractory, Chronic Pancreatitis Pain”

Alec Peniche, MD
(Anesthesia Residency Class of 2018)
January 2017 North American Neuromodulation Society Meeting
Abstract “Integrating Intrathecal Pump Patient Activator into Postoperative Pain Management: Lessons and Challenges”

Ann Shah, MD
(Anesthesia Residency Class of 2016, 2016-2017 Anesthesia Pain Fellow)
January 2017 North American Neuromodulation Society Meeting
Abstract “Case Series: DRG Stimulation Salvage for Failed SCS in Patients with CRPS”

Prasad Shirvalkar, MD, PhD
(2016-2017 Anesthesia Pain Fellow)
January 2017 North American Neuromodulation Society Meeting
Abstract “Managing Electrical Interference with Neuromodulation Devices in the Operating Room”

January 2018 North American Neuromodulation Society (NANS) Meeting

Neelesh Anand, MD
(2017-2018 Anesthesia Pain Fellow)
EXTRAMURAL AWARD
1st Place Poster: Burst Stimulation Reducing Pain and Degree of Amputation in Peripheral Vascular Disease: A Case Report

2018 North American Neuromodulation Society (NANS) Meeting

Respiratory Care Services Division

Byron Decuire, RRT III

Inaugural Member,
UCSF School of Medicine
Differences Matter Program

CAMPUS AWARD
UCSF Office of Diversity and Outreach, Diversity and Inclusion Certification
UCSF Office of Diversity and Outreach Chancellor’s Leadership Forum
Diversity Video Feature (April)

Eula Lewis, BS, RRT, CTTS, AE-C

CAMPUS AWARD
(with Stephanie Tsao, NP)
SFGH Foundation Hearts Grant
“GOOD NIGHT: Obstructive Sleep Apnea (OSA) Group Medical Visit for the San Francisco Health Network (SFHN)”

EXTRAMURAL HONOR
Featured in the American Association for Respiratory Care (AARC) Times Magazine

Lance Pangilinan RRT-ACCS, RCP

EXTRAMURAL AWARD
FACES Foundation PHIL Award for Outstanding Clinical Practice

Staff

Claire Harmon
Research Administration Manager

CAMPUS AWARD
UCSF Office of Diversity and Outreach, Diversity and Inclusion Certification

Cynthia Chin
Residency Program Coordinator

CAMPUS AWARD
UCSF School of Medicine Star Achievement Award

California Society of Anesthesiologists

District Directors, Delegates, and Alternate Delegates from the UCSF Department of Anesthesia and Perioperative Care

District 6

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<tr>
<th>Name</th>
<th>Office</th>
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<tr>
<td>Lee-Lynn Chen</td>
<td>Director</td>
<td>2019</td>
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<tr>
<td>Christina Inglis-Arkell</td>
<td>Delegate</td>
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<tr>
<td>Seema Gandhi</td>
<td>Delegate</td>
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<td>Adrian Gelb</td>
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<td>2020</td>
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<td>Matthias Braehler</td>
<td>Delegate</td>
<td>2018</td>
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<td>Matt Haight</td>
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<td>2018</td>
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<td>Gabriel Sarah</td>
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<td>Manuel Pardo</td>
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<td>Claas Siegmüller</td>
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<td>Wendy Woo</td>
<td>Alternate</td>
<td>2020</td>
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<tr>
<td>Alexandra Anderson</td>
<td>Alternate</td>
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<tr>
<td>David Shimabukuro</td>
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<tr>
<td>Joshua Cohen</td>
<td>Alternate</td>
<td>2018</td>
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<tr>
<td>Valli Mummaneni</td>
<td>Alternate</td>
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<tr>
<td>Muhammad Shaikh</td>
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<tr>
<td>Melanie Henry</td>
<td>Alternate</td>
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<td>Thoha Pham</td>
<td>Alternate</td>
<td>2020</td>
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District 9

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<tr>
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<tr>
<td>Jan Hirsch</td>
<td>Director</td>
<td>2020</td>
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Peer Reviewed Publications


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<tr>
<th>Name</th>
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<th>End Date</th>
<th>Title</th>
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<tr>
<td>Catherine Chen</td>
<td>Principal Investigator</td>
<td>Anesthesia Department, 7/1/2016–6/30/2018</td>
<td>7/1/2017</td>
<td>6/30/2018</td>
<td>Postoperative Opioid-Prescribing Patterns, Multimodal Analgesia, and the Prescription Opioid Epidemic</td>
<td>$40,000</td>
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<tr>
<td>Michael Bokoch</td>
<td>Principal Investigator</td>
<td>Anesthesia Department, 7/1/2016–6/30/2018</td>
<td>7/1/2016</td>
<td>6/30/2018</td>
<td>Fostering Quality and Safety in Anesthetic Practice in the Developing World</td>
<td>$27,052</td>
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<td>Richard Fidler</td>
<td>Principal Investigator</td>
<td>UC Center for Accelerated Innovation, 9/1/2016–8/31/2018</td>
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<td>Adrian Gelb</td>
<td>Principal Investigator</td>
<td>Dickson Emeritus Professorship Award, 7/1/2017–6/30/19</td>
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<td>6/30/19</td>
<td>Endothelial Inflammatory Pathways in Septic Vasculopathy and Organ Injury</td>
<td>$750,000</td>
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<td>Zhonghui Guan</td>
<td>Principal Investigator</td>
<td>Massachusetts General Hospital, 8/8/2016–9/30/2018</td>
<td>8/8/2016</td>
<td>9/30/2018</td>
<td>Species Inspired Research for Innovative Treatments (SPIRIT)</td>
<td>$326,000</td>
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<td>Monica Harbell</td>
<td>Principal Investigator</td>
<td>Anesthesia Department, 10/1/2016–9/30/2018</td>
<td>10/1/2016</td>
<td>9/30/2018</td>
<td>Comprehensive Anesthesia Research Training</td>
<td>$1,375,243</td>
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<tr>
<td>Michael Jung, Steven Hur, McLean House</td>
<td>Principal Investigator</td>
<td>Anesthesia Department, 7/1/2017–6/30/2018</td>
<td>7/1/2017</td>
<td>6/30/2018</td>
<td>Predictors of spontaneous cerebral AVM hemorrhage</td>
<td>$2,297,210</td>
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<td>Judith Hellman</td>
<td>Principal Investigator</td>
<td>San Francisco Foundation Award, 1/1/2015–ongoing</td>
<td>1/1/2015</td>
<td>ongoing</td>
<td>San Francisco Foundation Award</td>
<td>$325,000</td>
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**Grants**

**Helen Kim**

Co-Leader  
NIH/NINDS, 9/30/2014–7/31/2019  
Brain Vascular Malformation Consortium—Project 1: Modifiers of Disease Severity and Progression in Cerebral Cavernous Malformation  
$581,288  
Director  
NIH/NINDS, 9/30/2014–7/31/2019  
Brain Vascular Malformation Consortium—Administrative Unit  
$521,313

**Mark Latronica**  
Principal Investigator  
Anesthesia Department, 7/1/2017–6/30/2018  
Anesthesia Department Research Award  
$34,996

**Michael Lawton**  
Principal Investigator  
NIH/NINDS, 9/30/2014–7/31/2019  
Brain Vascular Malformation Consortium—Predictors of Clinical Course  
$6,796,554

**Jae-Woo Lee**  
Principal Investigator  
NIH/NHLBI, 5/1/2017–1/31/2021  
Human Mesenchymal Stem Cell Microvesicles for the Treatment of Acute Lung Injury  
$2,219,548

**Jacqueline Leung**  
Principal Investigator  
NIH/NIA, 6/1/2015–1/31/2019  
The Effects of Light vs Deep Anesthesia on Postoperative Cognitive Outcomes  
$444,033

**Michael Lipnick**  
Principal Investigator  
Hellman Fellows Fund, 7/1/2016–6/30/2018  
Anesthesia & Global Health Equity: Creating a Model for Research and Medical Education  
$49,812

**Bin Liu**  
Principal Investigator  
NIH/NCI, 8/6/2012–7/31/2018  
Internalizing human antibody-targeted nanosized siRNA therapeutics  
$1,607,090

**Mervyn Maze**  
Co-Principal Investigator  
UCSF REAC, 7/1/2016–6/30/2018  
The Effects of Exercise “Prehabilitation” on Cognitive and Functional Recovery after Surgery in Older Adults  
$40,000

**Claus Niemann**  
Principal Investigator  
Oregon Health & Science University, 1/1/2016–12/31/2018  
Donor Management Research Institute  
$1,988,668

**Jonathan Pan**  
Principal Investigator  
NIH/NINDS, 9/30/2014–7/31/2019  
Brain Vascular Malformation Consortium—Genetic and Statistical Analysis Core (GSAC)  
$416,197

**Ludmila Pawlikowska**  
Co-Leader  
NIH/NINDS, 9/30/2014–7/31/2019  
Brain Vascular Malformation Consortium—Genetic and Statistical Analysis Core (GSAC)  
$416,197

**Lawrence Poree**  
Principal Investigator  
NIH/NIGMS, 9/30/2014–7/31/2019  
A Post-Approval Study to Evaluate Targeted SCS (DRG) Stimulation for the Management of Moderate to Severe Chronic, Intractable, Pain of the Lower Limbs due to CRPS Types I and II (TARGET)  
$206,536

**Arun Prakash Budde**  
Principal Investigator  
NIH/NIGMS, 2/1/2015–1/31/2019  
Role of Innate Immune Cells and Pathways in Ventilated Lung Ischemia Reperfusion Therapy  
$790,560

**Jenn Krombach**  
Principal Investigator  
UCSF-ZSFG Risk Reduction Award, 7/1/2016–6/30/2018  
Improvement & Expansion of an Integrated Electronic Checklist System for Routine and Emergency Anesthesia Procedures  
$125,000

**Daisuke Kudo**  
Brain Aneurysm Foundation, 10/1/2017–9/30/2018  
Contribution of Microbiota in the Pathophysiology of Intracranial Aneurysm  
$30,000

**Philip Kurien**  
Principal Investigator  
Anesthesia Department, 7/1/2017–6/30/2018  
Anesthesia Department Research Award  
$50,000

**Benn Lancman and Julin Tang**  
San Francisco General Hospital Foundation, 7/1/2017–6/30/2018  
Transesophageal Echocardiography Simulator  
$98,156

**Sakura Kinjo**  
Principal Investigator  
Anesthesia Department, 7/1/2017–6/30/2019  
Anesthesia Department Clinical Research Award  
$34,702

**Mervyn Maze**  
Co-Principal Investigator  
UCSF REAC, 7/1/2016–6/30/2018  
The Effects of Exercise “Prehabilitation” on Cognitive and Functional Recovery after Surgery in Older Adults  
$40,000

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### Grants

*continued from previous page*

#### Jeffrey Sall

**Principal Investigator**  
NIH/NIGMS, 3/1/2015–2/29/2020  
Testosterone’s role in sex-specific outcomes after early anesthesia  
$1,524,496

**Principal Investigator**  
UC Davis, 1/1/2017–12/31/2019  
Prevention of Cerebral Injury in Pediatric Diabetic Ketoacidosis  
$28,600

**Principal Investigator**  
Tasley Pharmaceuticals, Inc., 8/17/2017–8/17/2022  
Pre-CTA for A Double-Blind, Randomized and Placebo-Controlled Study to Evaluate the Safety and Efficacy of T89 in Preventing Acute Mountain Sickness (AMS) During Rapid Ascent  
$1,500

#### Andrew Schober

**Principal Investigator**  
Anesthesia Department, 7/1/2017–6/30/2019  
Anesthesia Department Clinical Research Award  
$40,000

#### Mark Schumacher

**Principal Investigator**  
Anesthesia Department, 7/1/2017–6/30/2018  
Anesthesia Department Research Award  
$80,000

#### Una Srejic

**Principal Investigator**  
Anesthesia Department, 7/1/2015–6/30/2018  
Anesthesia Department Clinical Research Award  
$20,000

#### Hua Su

**Principal Investigator**  
NIH/NINDS, 1/1/2014–12/31/2018  
Hemodynamics of Cerebral Arteriovenous Malformations  
$1,633,785.65

**Principal Investigator**  
NIH/NHLBI, 1/16/2015–12/31/2018  
Cell Type-Specific Influences on HHT Pathogenesis  
$1,582,037

#### Jessica Tashjian

**Principal Investigator**  
Anesthesia Department, 7/1/2017–6/30/2018  
Anesthesia Department Clinical Research Award  
$12,930

#### Arthur Wallace

**Principal Investigator**  
NCIRE, 3/1/2012–3/1/2018  
Perioperative Outcomes Epidemiologic Consortium  
$150,000

**Principal Investigator**  
ECOM Medical, 8/1/2016–7/31/2019  
Impedance Cardiography: Clinical Evaluation of Endotracheal Cardiac Output Monitor (ECOM)  
$10,000

#### Eunice Zhou

**Principal Investigator**  
Merrimack Pharmaceuticals, 8/1/2016–7/31/2018  
Cross Reactive Human mAbs to Tumor Associated Antigens  
$300,000

#### Wei Zhou

**Principal Investigator**  
Anesthesia Department, 7/1/2017–6/30/2018  
Anesthesia Department Research Award  
$61,341

**Principal Investigator**  
International Anesthesia Research Society, 7/1/2016–6/30/2018  
The Roles and Applications of Orexin/Hypocretin System in Anesthesia  
$150,000

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William “Bill” Kennon Hamilton, MD 1922–2017

William (Bill) Kennon Hamilton, MD, was born December 15, 1922 in Guthrie Center, Iowa and died peacefully June 29, 2017, in Carmichael, California, having lived a long, useful, and productive life. Bill earned his B.A. (1943) and M.D degrees (1946) from the University of Iowa. Following an internship, he entered the United States Army and served in Germany in the 97th General Hospital as Chief of Anesthesia. He returned to the University of Iowa and completed his anesthesia residency from 1949-1951, and subsequently joined their Anesthesia faculty. At the age of 35, he was appointed Chair of the University of Iowa Anesthesia Department. Early in his career, a polio epidemic in Iowa greatly affected him and spawned a lifelong interest in pulmonary physiology and pulmonary care, and in the development of intensive care units, then a new concept. His research interests included the effects of anesthetics on the venous system and measures to make anesthesia more effective and safe. In 1967, he joined the faculty of the University of California, San Francisco as Professor and Chair of the Department of Anesthesia, a position he maintained until 1983.

As the Chair of Anesthesia at UCSF, Dr. Hamilton built the department into one of the premier Anesthesia Departments in the world. While maintaining his commitment to superior patient care, teaching, and research, he greatly increased the number of faculty to meet the academic and clinical needs of the University.

Bill’s commitment was first and foremost to the care of patients. Despite his administrative commitments, he continued to provide anesthesia for patients and was often asked to do so for faculty members and their families. To foster continued advances in clinical care, he taught the importance of integrating physiology and pharmacology into the daily practice of anesthesia and intensive care, as well as the need to do research that improved the care of patients.

Dr. Hamilton was one of the first academic anesthesia department chairs to provide anesthesia faculty with both financial support and time for research. Before the terms existed, Dr. Hamilton “thought outside the box” to support “translational” “bench to bedside” research. With an unwavering focus on exemplary patient care, he sent faculty to other centers to learn new techniques and allowed some faculty to work in other clinical departments with like goals in mind.

Dr. Hamilton also influenced the practice and teaching of anesthesia in many other countries, including Canada. Many physicians from these countries came to San Francisco to work and study with him and his faculty. They returned home and became outstanding clinicians and teachers, chairs of anesthesia departments, and deans of medical schools. Thus, through his dedication to teaching and learning, he influenced medicine, not only in the United States, but also in many other countries.

In 1983, Dr. Hamilton became the first Vice Dean for Clinical Affairs at the University of California, San Francisco, serving as a liaison between the medical school and the hospital. He was enormously successful in helping advance the academic and clinical missions of both entities. As a result, the relationship between the hospital and medical school flourished. This has significantly benefited future generations of clinicians and, more importantly, patients.

Dr. Hamilton was an outstanding teacher. His insight into problems and ability to help students learn, not only for the day, but for the future, was exemplary. He received many accolades for his outstanding contributions to medicine, but the awards he most cherished were “teaching awards.”

In 1992 Bill retired from the University to spend time with his wonderful and equally charismatic wife of 46 years Shyrlee, who was Bill’s best friend and confidant. She contributed to his success in many ways. Unfortunately, Shyrlee died in 2002, which left a significant void in Bill’s life. When asked what he was doing in retirement he said, “Making music in two concert bands, golfing three times a week, napping in the afternoons most days.”

Bill was a great mentor, teacher, clinician, administrator, and friend. He supported and developed many young (and some old) faculty and allowed them to flourish. His guidance and leadership will be sorely missed.

Dr. Hamilton is survived by his son and daughter-in-law Douglas and Rebecca Hamilton, of Sacramento, CA, by his daughter Deborah Hamilton, of Lagunitas, CA, and by his grandchildren Courtney and Andrew Hamilton, of Sacramento, CA.

continued on next page
Edmond I Eger II, MD, 1930–2017

Edmond I. “Ted” Eger, II, the anesthesiologist and scientist who pioneered development of modern inhaled anesthetics, died peacefully at his home in Tiburon, California, on August 26, 2017, one week shy of his 87th birthday. Dr. Eger’s research is the basis for the safe use of modern inhaled anesthetics administered to more than 300 million patients every year. His death was due to pancreatic cancer.

Edmond I Eger II was born Sept. 3, 1930, in Chicago, the son of an advertising executive. The young Ted Eger received ether anesthesia at ages 6 and 10, experiences that would haunt him and guide him into a career to improve anesthesia care. In both cases, he felt restrained, suffocated, and drawn into a black vortex as consciousness disappeared.

Eger graduated from Hyde Park High School at the age of 15, having led his school checker team to two consecutive victories in the All-Chicago Checker Championship. He graduated in the lower 20 percent of the class, however, and after his first (and only) day of selling women’s shoes, he resolved to improve his study habits. He enrolled in Roosevelt College and was able to transfer to the University of Illinois one year later, from which he graduated Phi Beta Kappa with a major in chemistry and a minor in mathematics. Later that year, he enrolled in Northwestern Medical School, from which he graduated in 1955. He had expected to pursue a career as a general internist, when an epiphany during an externship directed him to a career in anesthesia instead: assisting with the care of a patient receiving the anesthetic thiopental by infusion, the patient’s breathing gradually slowed and finally stopped, whereupon Eger discovered that he could move air in and out of the patient’s lungs by squeezing the anesthesia circuit, thus keeping him alive. This power of controlling a person’s breathing, coupled with the haunting memory of his own sense of suffocation during anesthesia, inspired him to embark on a career in anesthesiology. He was determined to improve on what he had experienced as a child.

Following a one-year internship at St. Luke’s Hospital in Chicago, Dr. Eger began residency training at the University of Iowa with a new baby and wife, Dolly Ross Eger, in tow (after 25 years of marriage, they divorced in 1983). Under the leadership of Iowa’s Dr. Stuart Cullen, Dr. Eger began publishing his first research papers and also began working with another anesthesia resident, Dr. John Severinghaus, who successfully challenged Dr. Eger’s initial notions about the physiology of uptake and distribution. Dr. Eger followed him to UCSF to work as his research fellow and spent the next 50 years applying precise mathematical detail to answer the questions that Dr. Severinghaus had posed while they were residents.

Working at the University of California, San Francisco, Dr. Eger methodically characterized the effects of drugs used in anesthetic practice. This work began with halothane and methoxyflurane in the 1960s and extended to enfurane and isoflurane in the 1970s, and to desflurane in the 1990s. Early in his career, Eger (and Lawrence Saidman) were challenged by Severinghaus to develop a standard measure of anesthetic potency. 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. Their studies introduced the concept of...
“MAC” for the “minimum alveolar concentration” of anesthetic required to prevent movement in response to surgical stimulation. Eger also characterized the processes governing the onset, uptake, and distribution of inhaled anesthetics into the lungs and body tissues, including the brain, and how quickly anesthetics are removed at the end of anesthesia. This provided precise guidance on how to administer inhaled anesthetics safely and effectively during surgery. Dr. Eger developed these concepts for the anesthetics available in the 1960s, and then used these concepts to identify new drugs meriting commercial development: isoflurane, sevoflurane, and desflurane.

Eger’s research, with numerous collaborators, led to more than 500 peer-reviewed publications, including nine of the 100 most frequently cited anesthesia-related publications. His research trainees include the editors-in-chief of Anesthesiology and Anesthesia and Analgesia; two medical school deans; four recipients of the Distinguished Service Award from the American Society of Anesthesiologists; four recipients of the Excellence in Research Award from the American Society of Anesthesiologists; and 24 chairs of departments of anesthesiology. Dr. Eger has received numerous awards for his research and leadership roles in anesthesia, including the Distinguished Service Award (1991) and the Excellence in Research Award from the American Society of Anesthesiology, and is an Elected Fellow of the Royal College of Surgeons, London. In 2010, he gave the Second Annual John W. Severinghaus Lecture in Translational Science (“After You Please”).

Eger is the author, co-author, or co-editor of seven books. The first, Anesthetic Uptake and Action, published in 1975, remains the definitive description of the principles of anesthetic pharmacology. The last, The Wondrous Story of Anesthesia, edited with Lawrence Saidman and Roderick Westhorpe, provides a definitive history. In 1990, Dr. Eger was interviewed by former Chair of Anesthesia at UCSF, Dr. William K. Hamilton, for the Wood Library’s John W. Pender Collection of the Living History of Anesthesiology. Fifty-five years ago, Eger founded and subsequently supported the Western Anesthesia Residents Conference, an annual meeting hosted by departments of anesthesia located in the western US inviting Anesthesia Residents to present results of their research. This Conference has thrived and grown over the years to a vibrant annual meeting well-attended by residents, department chairs, and anesthesia research faculty. The conference recently honored Eger by naming an annual lectureship after him.

Eger spent his final two decades as an investigator pursuing the mechanism of action of inhaled anesthetics, one of the oldest mysteries in pharmacology. He gave a legendary series of lectures on anesthetic uptake and distribution to the first-year anesthesia residents at UCSF. Eger discovered tantalizing clues about how fundamentally different various anesthetics are, while also proving that anesthetics have less person-to-person variability than do other drugs. He showed that modern inhaled anesthetics can anesthetize any animal at doses similar to those in humans, that plants and even the most primitive forms of life, blue-green algae, can be anesthetized. No other drug behaves like this. But despite these clues and decades of work, the puzzle of exactly how anesthetics work remains unsolved.

An avid lover of nature, Eger hiked throughout the Sierra Nevada and completed the entire John Muir Trail three times; one of his favorite places was Yosemite’s Half Dome, which he last climbed on his 75th birthday with his entire family. Dr. Eger is survived by his wife of 21 years, Dr. Lynn Spitler; four children, Cris Cadence Waste, Dr. Doreen J. Eger, Edmond Eger III, and Dr. Renee R. Eger; two step-children, Dr. Diane Anderson and Paul Spitler; seven grandchildren, six step-grandchildren, and a half-brother, Larry Eger.

Dr. Eger’s obituary provided by Steven L. Shafer, MD, and Lynn Spitler, MD.

**Following are some personal remembrances from those whose lives were touched by Dr. Eger:**

*From Michael Bokoch, MD, PhD, Assistant Professor, UCSF Anesthesia and Perioperative Care, UCSF Anesthesia and Perioperative Care Residency Class of 2015*

What a joy and inspiration to have met and learned from Dr. Eger – and had an oral board exam from him! Makes me feel lucky indeed to be part of this incredible UCSF family.

*From David J. Cullen MD, MS, Former Chair of Anesthesiology, Tufts University and St. Elizabeth’s Medical Center, UCSF Anesthesia Residency Class of 1969 (Chief Resident)*

Ted Eger was the most influential, important, and substantive mentor in my entire lifetime of 77 years (so far).

As a medical student at the University of Michigan, 1961-65, I was initially curious about anesthesia when I learned a monograph had been written about anesthesiology by a man named Stuart Cullen. Having the same last name, but being unrelated (unlike my dear colleague, Bruce Cullen), I was intrigued and completed a one month anesthesia elective in my senior year which convinced me to pursue training in anesthesiology. During my residency interview in 1964 with Dr. Robert Dripps, Department Chair at the University of Pennsylvania, he told me there were only 3 top departments in the country at that time; Penn, Columbia, and UCSF. Coming from Detroit, choosing San Francisco over Philadelphia and New York was an easy decision, and, most fortunately, led to my relationship with Ted Eger.

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Starting residency in July, 1966, I soon realized what a remarkable training program I had entered because so much of the teaching, guidance and directed learning was based on the new discoveries establishing a scientific foundation for administering anesthesia more safely, led by Drs. Severinghaus and Eger. I developed an understanding of uptake and distribution, equipotency, and the early attempts to discern the mechanism/s by which anesthesia works. The technical skills, neat tricks, the art of the many facets of problem solving all were important too. But Ted’s work clearly led us to understand what every general anesthetic (almost always using one or another inhalation anesthetic) was based on; i.e. a far more fundamental and scientific basis which greatly enhanced our understanding of what we were doing to the “black box” that is the brain, about which so little was known at time.

Thus, I applied for, and was accepted as Ted’s research fellow for 1967-68 which also included full access to all the wonders of the Cardiovascular Research Institute, especially Dr. Severinghaus and his lab. I mention this because, with Ted’s guidance, mentorship, direction, leadership, and inspiration, I was able to develop research protocols which piqued my own interest and which he supported, such as the interaction between the inhalation anesthetics and hypoxia, hypo and hypercarbia, and severe anemia. In turn, I also participated fully in Ted’s pioneering and extraordinary studies of the many effects of inhalation anesthetics in human volunteers, conducted at UCSF, and with N. Ty Smith at Stanford. The level of technical sophistication used in these studies was so far beyond anything I could have imagined. Over time, many of these technical achievements have become clinical standards of care.

He taught me so much about data analysis and extracting relevant information from the literature. Importantly, he instilled in me the need for critical thinking, always questioning why we made the clinical decisions we made, and often asking me to justify, if I could, why I did what I did when he supervised my clinical work. There should be a justifiable answer for almost every detail involved in the choices one made to provide the safest and most effective anesthetic possible, given the circumstances. When no good answer could be provided, he prompted us to research the literature, or else to think about how to study the question. This approach served me well throughout my entire career.

To sum up, because of Ted’s influence, my learning curve soared that year beyond my wildest expectations, allowing me to continue research studies during my 3rd year of residency, and while in the Air Force for 2 years, and enabled my recruitment to Massachusetts General Hospital and Harvard Medical School as an academic anesthesiologist and critical care intensivist for many years. I have no doubt that my career would have been far less interesting and successful without the tools implanted in me by Ted Eger. I am sure the same can be said for every one of Ted’s fellows, let alone the innumerable residents he taught directly, and the worldwide influence his research, teaching and publications have had on our specialty. He truly was a giant in advancing our specialty and we were all so fortunate to live, work and thrive under his influence. In addition, he was a “mensch” of the highest order, a truly wonderful mentor, friend, and colleague. He will be sorely missed.

From Janet A. Dewan PhD, MS, CRNA, Associate Nurse Anesthesia Program Director, Northeastern University

I was fortunate to enjoy professional time and relaxed dinners with Dr. Eger when he lectured at the AANA meetings. I have been quoting him, posting his articles, since 1981, when I first taught Uptake and Distribution of Inhaled Anesthetics to Nurse Anesthesia Students. Although I still reference him proudly in the inhalation anesthesia sequence, I now have added material from The Wondrous Story of Anesthesia to his influences, and use it in my History of Anesthesia lectures. His signed copy of that book is one of my anesthesia treasures.

Reading his work is enlightening on many levels but my lasting memory of his greatest influence on me as a teacher of anesthetists stems from a personal encounter a few years ago at a meeting. I saw what a spontaneously open to ideas scientist and human he was. I told Dr. Eger that every year when my new graduate nursing students come to our program I ask, in the first class, that they all take out a piece of paper and write down how they think general anesthesia works. I end up with a variety of semi pharmacologic/physiologic explanations, and some more spiritual ones. I save these and at graduation time ask the students if their ideas have changed...emphasizing there is still a mystery. When I told this to Dr. Eger I thought he might chuckle visualizing the beginning student attempt at expressing understanding of a phenomenon not completely explained. But, no he immediately and enthusiastically said “Oh keep doing that, one of them may have an insight that is needed. ” I saw in him a man, who knows much more about the actions of anesthetics than I ever will, but who looked at every opportunity as one to uncover new ideas, even from beginning students who have never delivered an anesthetic. I read my students’ theories with a more open and inquisitive mind, now, because of his comment.

Thank you Dr. Eger for making a complex topic understandable, for recognizing the vast continuum of knowledge, evidence and skill that has evolved into the anesthesia practice we have today, and for making us all see there are discoveries yet to come.

continued on next page
From Stuart Forman, MD, Professor of Anesthesia, Massachusetts General Hospital

In 2007, I had the honor of hosting Ted Eger at MGH as our Ether Day Grand Rounds speaker. Ted also insisted on delivering a second talk in the Ether Dome entitled “A Personal History of Anesthesia”, in which he described his professional journey and love for our clinical specialty and research to a rapt standing-room-only audience. The photo Steve included in his email (above) was taken in the Ether Dome at that event.

Upon receiving Steve’s email, I located my introductory comments for Ted’s Ether Dome talk. Here is the text of my comments as they related to Ted’s career, as of 2007:

Professor Edmond “Ted” Eger trained in Chicago and then served several years as a physician in the military before moving to San Francisco to pursue an Academic Anesthesiology career. Ted has made an astounding number of contributions to our understanding of anesthetic pharmacology during his more than four decades at UCSF. He literally “wrote the book” on anesthetic uptake and distribution. In 1965 Professor Eger and his colleagues at UCSF took a firm stand, defining a specific clinical endpoint, “lack of movement in response to a standard noxious stimulus,” and used this anchoring point to measure and compare the potency of various inhaled agents. “Minimal alveolar concentration” or “MAC” remains THE standard by which anesthetic potency is measured, and the stimulus-response paradigm has enriched our understanding of how to meaningfully measure anesthetic depth. Of course, Ted has not restricted his scholarship to the clinical actions of anesthetics. He has spearheaded investigations of anesthetic mechanisms, and he continues to lead a very productive Program Project Grant applying a systems neurobiology approach to the problem. Along the way, Ted has written numerous books, published over 500 peer reviewed papers, and created a legacy of trainees that include Lawrence Saidman, Robert Stoelting, Bruce Cullen, Michael Cahalan, and many other national and international leaders in Anesthesia research and education. The ASA has honored Ted with both the Excellence in Research Award and the Distinguished Service Award. He was elected Fellow to the Royal Colleges of Surgeons in both London and Ireland. And Ted, seemingly ageless, is still going strong, mentoring another generation of Academic Anesthesiologists.

From Claire Harmon, UCSF Anesthesia and Perioperative Care Research Administration Manager

My contact with Ted Eger consisted mostly of helping him and the team of investigators complete annual progress reports and renewal applications for his NIH program project grant, Sites and Mechanisms of Inhaled Anesthetic Actions. My boss and I also met regularly with Dr. Eger to go over the grant’s finances. It was in one of these meetings that I discovered that Dr. Eger and I had similar tastes in books. From that point until the grant ended several years later, he and I exchanged books regularly, and I always enjoyed our discussions about them. I appreciated that we were simply two enthusiasts.

From Brian Hite, MD, UCSF Anesthesia Residency Class of 2000

Yes. I think I did the last closed circuit anesthetic at Moffit with him in 1999-2000. He taught me old school anesthesia. I even mastered the inhaled desflurane induction. Yes, we will intubate the trachea and ventilate the patients lung with mechanical respirator.

From Evan Koch, CRNA, MSN:

Ted Eger taught without ever intending to. He caused people to question things. He gently inspired people to reach beyond anything they ever thought could be accomplished. And Ted was ecumenical. “The Wondrous Story of Anesthesia” was the first history to include both CRNAs and anesthesiologists, Ted’s way of saying that both groups have been responsible for advancing the art and science of anesthesia. Ted was widely admired by CRNAs. He spoke at national and regional meetings many times. The American Association of Nurse Anesthetists presented Ted with its Public Service in Anesthesia Award for his good work, friendship, and honesty. Ted Eger was a true mentor to our entire profession, and he will be missed.

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From Hannah Kwon, UCSF Anesthesia and Perioperative Care Residency Class of 2009

Dr. Ted Eger...possibly one of the most memorable attendings during my residency training. Even at almost 80 years old (at the time), he continued to come into the ORs to teach us personally. I still remember his introductory lecture to us CA-1s about inhaled anesthetics and him speaking about how we uptake the inhaled agent through our lungs, it enters our circulation and then in our brains, and then “magic happens.” He pushed us all as first year anesthesia residents to do things we were uncomfortable with, to challenge us and show us the true limits of various anesthesia techniques. I was just another resident in training there, but I feel so lucky to have experienced this GIANT and his love for teaching first hand. What an amazing man. RIP Dr. Eger.

From Esther Lee, MD, UCSF Anesthesia and Perioperative Care Residency Class of 2018

The UCSF Anesthesia Class of 2018 will always remember the wit, humor, tact and sharpness of Dr. Eger during his lectures on inhaled anesthetics. Forever grateful to have learned from one the greatest giants in anesthesia.

From Errol Lobo, MD, PhD, Professor, UCSF Anesthesia and Perioperative Care, UCSF Anesthesia and Perioperative Care Residency Class of 1992

When we come in as residents or new faculty, we are still impressionable, and most of us incorporate some of the traits (characteristics), some good of our attendings and mentors. In my third week as a resident at UCSF, Professor Eger was my attending. It was a time when all residents did their pre-ops as patients were usually admitted the night before their scheduled surgery. I had this one patient who was scheduled for a knee replacement, and when I attempted to do my pre-op, I encountered the surgical attending for the case. He did not like the fact that I had an afro and a beard, so as I entered the patient’s room, he berated me calling me the “N” word and more. As a new resident, I was traumatized and wanted nothing to do with the case. Even though Professor Eger may not have understood the implications of the ugly “N” word for me, he told me to raise my head up and never to submit to bullies and to give the best anesthetic of my young anesthetic career and he would be present every moment of the case. This event and Professor Eger’s response to it made me tougher and gave me more respect for my chosen specialty – anesthesiaology. Professor Eger could have taken the easy route and got the assignment changed as most others would. I never did thank Dr. Eger, but I will never forget this event.

From Rachel McKay, MD, Professor, UCSF Anesthesia and Perioperative Care, UCSF Residency Class of 1998

Dr. Eger valued his interactions with motivated learners of all sorts (even faculty), but he especially enjoyed having the opportunity to teach and interact with the anesthesia residents. I thought others might appreciate this transcript of the Second Annual John Severinghaus Lecture on Translational Science, given at the ASA in 2009. Although at the time everyone was aware of his resourcefulness, and significant contributions to the fields of anesthesia and surgery, honestly I was struck by his candor and introspection in describing his journey.

One of my favorite lines here: “Research should equal fun.” He reminded us about this from time to time, both in words and by example.

From Ronald D. Miller, MD, Professor Emeritus, UCSF Anesthesia and Perioperative Care, Chair, UCSF Anesthesia and Perioperative Care, 1984-2009

Ted Eger, Bill Hamilton and I lived near each other in Marin County. During the gasoline shortages in the 1970s, we shared a ride to and from work at UCSF.

This means that the 3 of us had many lengthy conversations; I only wish those conversations had been recorded. I and we will miss them both.

From William North, CRNA:

I met Dr. Eger at Charity Hospital in New Orleans in 1983. He was a genius in his field.

From Steven L. Shafer, MD, Professor of Anesthesiology, Perioperative And Pain Medicine, Stanford University

Ted was among the leaders of a generation of clinical scientists who transformed our specialty from an art to a science. Some of this generation have passed. Some of this generation are still with us. Of those, some are even on this list! Thank you for your decades of work creating the scientific specialty of modern anesthesia.

We will miss Ted, the scientist, clinician, teacher, and friend.

Ted’s contributions will live on. Tomorrow, when you anesthetize your patient with isoflurane, sevoflurane (yes, sevoflurane), or desflurane, when you adjust the partial pressure to 1 MAC, when you use the principles of anesthetic uptake and distribution to awaken your patient, pause for a moment of joy that one of us, Ted Eger, contributed so much to the safety of our practice and wellbeing of our patients.

From Jenson Wong, MD, Associate Professor, UCSF Anesthesia and Perioperative Care, UCSF Anesthesia and Perioperative Care Residency Class of 2005

I was really sad and surprised to hear about Ted. I thought I’d share this selfie I took with him at graduation this year. I took the pic to share it with my mom, who knew Ted when she was working in Joan Kendig’s lab at Stanford in the 1990s and early 2000s.

From San Yuan, MD, UCSF Anesthesia and Perioperative Care Residency Class of 1988:

continued on next page
I am deeply sadden by this news; another giant of anesthesia has fallen!

I still remember the night when we all went over to his house on Twin Peaks to discuss the Nitrous Oxide’s effect on methionine synthetase.

True gentlemen and scholars are hard to come by nowadays. And Ted typifies that image.

From David Zvara, MD, Professor and Chair, University of North Carolina at Chapel Hill
Thank you for sending this. I knew Ted. He was a remarkable physician and colleague.

Ernest Philip Guy, age 96, died peacefully in his home on September 5, 2017. He is survived by his wife of 73 years, Patty, and daughters Phyllis and Patricia, as well as many nieces and nephews. Ernie was the son of Rev. and Mrs. R. E. Guy of Jackson, Tennessee; he was the ‘middle of the pack’ and the last surviving sibling of their seven children.

After graduation from Union University in Jackson, Tennessee, Ernie joined the Army Air Corp, becoming a flight instructor. Fulfillment of his lifelong dream of being a doctor began when he entered medical school at University of Tennessee followed by his residency at John Gaston Hospital in Memphis, Tennessee. He entered a general practice partnership with his brother-in-law in Henderson, Tennessee. Five years later, he decided to specialize in Anesthesia and was accepted at University of Iowa. When the Chairman of the Anesthesia department moved to chair the department at the University of California, San Francisco (UCSF), Ernie was invited to join the new staff. He became Chief of Anesthesia and Chief of Staff at the San Francisco General Hospital (SFGH) in his role as Associate Professor at UCSF, providing on-the-job training to residents in Anesthesia while managing the SFGH emergency services. During that time, he worked on various committees planning for and re-designing a new hospital, updating hospital policies, and helping hospital management through a tumultuous political time. He was often invited by the American Board of Anesthesiology to be an examiner, certifying new Anesthesiologist. After 18 years in San Francisco, Ernie joined the DeKalb Anesthesia Group in Decatur, Georgia, retiring in 1985 to make beautiful wood furniture and to pursue his love of gardening, creating a masterpiece in his own yard.

Always a devout Christian, Ernie was an ordained Deacon serving in churches as well as teaching Sunday School classes. He was a Trustee of the Golden Gate Baptist Seminary in Sausalito, California, working to expand the educational program and raising funds to ensure the future of the Seminary. He often challenged traditional approaches in an effort to expand the churches’ and the seminary’s thinking to keep them modern while maintaining essential Christian values.

Whether working in the university or private practice, or serving his religious community, among his many talents, teaching was possibly his greatest. Whether you were his student, his child, his nephew or niece, or a member of his Sunday School class, his methodology was to take the devil’s advocate position to challenge your thinking. This approach often frustrated the receiver but helped the student learn the lesson. He greeted each person with delight, an open heart, and an open mind. To say he will be missed is an understatement; but, more importantly, he will be remembered.

Dr. Guy’s obituary provided by his family.

Following are some persoal remembrances from Dr. Guy’s UCSF colleagues:

From Terry Vitez, MD, UCSF Anesthesia Residency Class of 1974
He was one of our favorites. He had a unique way of approaching problems and was always supportive of the residents.

From C. Philip Larson, MD, UCSF Anesthesia Residency Class of 1962; Former Vice Chair of Anesthesia and Chief of Anesthesia at SFGH; Former Chair, Anesthesia at Stanford
He was a great faculty member and teacher. He spent many years at SFGH and really was an important contributor to the anesthesia service there. I am sending you a contribution to the Dept Research Fund in his memory.

From Richard Barber, MD, UCSF Anesthesia Faculty 1967-1979
Ernie was a dear friend, a superb clinical anesthetist, and the most ingenious and dedicated teacher I was ever privileged to work with. He was truly one of a kind. He was as dedicated to his faith and supportive of his church as he was to his role as physician and teacher. Heaven will be made better by his presence. My deepest sympathy to his family.

From Richard Weiskopf, MD, UCSF Anesthesia Residency Class of 1969, UCSF Anesthesia Fellowship 1970-1971, UCSF Anesthesia and Perioperative Care Faculty Senate Emeritus
Ernie Guy was an excellent clinician, educator, and role model. He was also a kind, generous person. I was fortunate to be a resident when he was Chief of Service at SFGH, and learned a great deal from him, about many things.
Department Events

Anesthesia Saturday Grand Rounds

May 19, 2018

8 Hours of CME/CUE Credit

Four 2-hour Sessions:
- Pediatric Anesthesia
- Obstetric Anesthesia
- Anesthesia Critical Care
- Trauma / Emergency Anesthesia

Link to more information and registration:
https://anesthesia.ucsf.edu/events/anesthesia-saturday-grand-rounds

Previous Events

H. Barrie Fairley Seminar in Respiratory Care
Dedication Ceremony

Access the presentation here:

Global Health

Recent Work in Guatemala and Tanzania

As part of Operation Rainbow, UCSF Anesthesia and Perioperative Care Professor Errol Lobo, MD, PhD, class of 2018 residents Michael Wu, MD, PhD and Esther Lee, MD, and Mercy Vigil, CRNA, recently volunteered to provide anesthesia for orthopedic surgeries in Huehuetenango, Guatemala. For Dr. Wu, the trip was one of the highlights of his residency — something he thinks everyone should be a part of at some point.

UCSF Anesthesia and Perioperative Care Visiting Clinical Instructor and HEAL Initiative Global Health Fellow Tyler Law, MD, helped teach a SAFE (Safer Anesthesia from Education) Obstetric Anesthesia Course in Tanzania (September). The three-day course was taught to over 40 nurse anesthetists, who often work as the sole anesthesia provider in a rural area. A one-day Train of Trainers (TOT) course for Tanzanian physician anesthesia faculty and residents was also held. This course was designed to impart the fundamentals of how to teach a SAFE course — so that when the international faculty left, these physicians would be equipped to run further iterations of the course.

SAFE-OB has been run in dozens of countries, reaching hundreds of providers, and aims to teach standardized, high-yield, locally relevant content.

John Severinghaus
Pioneers of Anesthesia Lecture, “Eight Sages Over 5 Centuries Share Oxygen’s Discovery”

Access the presentation recording here:
https://lecture.ucsf.edu/ets/Catalog/Full/0fb68472f87049b6aa173be45d892c3521