STANFORD
SCHOOL OF MEDICINE

The Gas Pipeline

from the Department of Anesthesiology, Perioperative and Pain Medicine

November/December 2013

Balanced Anesthesia

Pursuing Life's Other Passions

see inside, page 2

STANFORD
SCHOOL OF MEDICINE
Department of Anesthesiology, Perioperative and Pain Medicine

The Gas Pipeline
November/December 2013

Editor
Maureen Donohue
email: maureend@stanford.edu

Graphic Designer
Marianne Wyllie
email: mwyllie@cruzio.com

Photo Credits
All photos on cover and this spread:
Alicja Orkiszewski, MD, PhD

Contents

Balanced Anesthesia

My World from Above

By Alicja Orkiszewski, MD, PhD

In a recent e-mail, the department's editor, Maureen Donohue, asked for story suggestions for the next *Gas Pipeline*. In October, during the Stanford alumni reception at the ASA annual meeting in San Francisco, I had the opportunity to catch up with some of my colleagues. Aside from talking shop, the conversation led to our "after hours" interests, so I suggested to Maureen that she begin a hobby or personal interest section in the newsletter. After all, there's more to life than medicine. As you can see, she proposed that I write the first story, so here it goes.

My nonmedical interests have always been two-fold: travel and photography. Over the years I have gone through all kinds of different camera equipment (on some occasions because I lost my camera in a lake or river). I am currently in a committed relationship with my Nikons (D90 and D800). Together we've tackled the deserts of New Mexico, the monumental glaciers of Antarctica, and the seemingly limitless expanse of the African savannah.

▲ *Old and New: South San Francisco Bay*

▲ *Sunrise, White Sand Dunes, New Mexico*

Dr. O's cover photography, from top, left to right: summer in Alaska above Arctic Circle; Victoria Falls, Zambia, medical mission 2012; Mirror Lake, Yosemite; summer in Alaska above Arctic Circle; Dr. O and her Cessna

In 2006, when my husband earned his pilot's license, I inadvertently and somewhat reluctantly became his "co-pilot." With time and experience we built up to flying farther, sometimes just us, other times with friends, and occasionally on very rewarding Angel Flights. What happens when you fuse flying in a Cessna with a woman carrying a camera? The answer: a minor obsession with aerial photography. The more we flew, the more I was amazed by the look of the world from above. I became fascinated by the colors, shapes, and texture of landscape. Seeing a bird's eye view of the world from a few hundred or few thousand feet in the air has given me a completely different perspective on daily life.

And it was the beginning of my "second career" as an aerial photographer.

In addition to covering most of our walls at home with my photographs, in 2009 I presented my work for the first time publically during the ASA conference in New Orleans. Ironically, that exhibition, which came about in connection with my profession as a physician, proved to be the first of five—so far—exhibitions of my aerial abstract photographs, four of which were in Europe; the most recent one was closer to home, in Oakland. Although art and science do not often collide, they seem to be intertwined for me; some of my photographs are currently exhibited at the University of Life Sciences in Warsaw, in my native Poland.

I escape from the everyday grind by ensuring that I nurture this extra-medical passion. I attend a different photography workshop each year. I also find solace in our red and white Cessna and in being a member of PAPA International (Professional Aerial Photographers Association). During vacations and global health missions alike, I seize every opportunity to see the land from above, and once in awhile I publish my photo albums on Blurb for people to enjoy.

As you can see, life outside of work keeps me busy. I genuinely love being a physician but I believe each of us needs a balance in life and a healthy escape from life's stressors. Aerial photography is what works for me. I look forward to hearing your stories.

Wishing you many amazing adventures,

Dr. "O"
Department of Anesthesiology
Oakland Hospital, CA

What happens when you fuse flying in a Cessna with a woman carrying a camera? The answer: a minor obsession with aerial photography.

▲ *Infrared Cessna*

Researchers Demonstrate Efficient Method for Converting Fat Cells to Liver Cells

By Bruce Boldman

▲ *Gary Peltz, MD, PhD*

In a feat of modern-day alchemy with huge potential for regenerative medicine, Stanford University School of Medicine scientists have developed a fast, efficient way to turn cells extracted from routine liposuction into liver cells.

The advance is described in a study published October 21 in *Cell Transplantation*.

The scientists performed their experiments in mice, but the adipose stem cells they used came from human liposuction aspirates and became human, liver-like cells that flourished inside the mice's bodies. This method is distinct from those producing liver cells from embryonic stem cells or induced pluripotent stem cells. Although iPS and embryonic stem cells are pluripotent — they can, in principle, differentiate into every cell type — they carry a palpable risk of forming tumors. However, the cells produced using this new technique, which involves no intermediate pluripotent phase, show no signs of being tumorogenic.

The liver is the body's chemistry set. It builds complex biomolecules we need, and it filters and breaks down waste products and toxic substances that might otherwise accumulate to dangerous levels. Unlike most other organs, a healthy liver can regenerate itself to a significant extent. But this capacity cannot overcome acute liver poisoning or damage from chronic alcoholism or viral hepatitis.

Acute liver failure from acetaminophen alone takes about 500 lives annually and accounts for close to 60,000 emergency-room visits and more than 25,000 hospitalizations annually. Other environmental toxins, including poisonous mushrooms, contribute still more cases.

All aspects of the new fat-to-liver technique are adaptable for human use, said Gary Peltz, MD, PhD, professor of anesthesia and the study's senior author. Creating iPS cells requires introducing foreign and potentially carcinogenic genes. But adipose stem cells merely have to be harvested from fat tissue. The process takes nine days from start to finish — fast enough to regenerate liver tissue in acute liver poisoning victims, who would otherwise die within a few weeks, barring liver transplantation.

Some 6,300 liver transplants are performed annually in the United States, with another 16,000 patients on the waiting list. Every year, more than 1,400 people die before a suitable liver can be found for them. While it can save lives, liver transplantation is complicated, risky and, even when successful, fraught with aftereffects. Typically, the recipient is consigned to a lifetime of taking immunosuppressant drugs to prevent organ rejection.

"We believe our method will be transferable to the clinic," Peltz said. "And because the new liver tissue is derived from a person's own cells, we do not expect that immunosuppressants will be needed."

Liver cells are not something an adipose stem cell normally wants to turn into, Peltz said.

The Stanford team knew it was possible, though. Another way of converting liposuction-derived adipose stem cells to liver-like cells (called i-Heps, for induced hepatocytes) had been developed in 2006 by Japanese researchers. But that method, which relies on chemical stimulation, requires 30 days or longer and is inefficient; it could not produce enough material for liver reconstitution. (Working with iPS cells takes even longer; they must first be generated from adult cells before they can be converted to i-Heps.)

Related News

- Mice with 'humanized' livers improve early drug testing, scientist show. http://med.stanford.edu/ism/2012/october/peltz.html
- Common herbal medicine may prevent acetaminophen-related liver damage, says researcher. http://med.stanford.edu/ism/2009/november/peltz.html

Using a different technique — Peltz refers to it as spherical culture — he and his associates were able to achieve the conversion within nine days with an efficiency of 37 percent, as opposed to the vastly lower yield obtained with the prior method (12 percent) or using iPS cells. (Peltz said improvements since the study's publication now enable yields exceeding 50 percent within seven to eight days.)

Dan Xu, PhD, a postdoctoral scholar and the study's lead author, adapted the spherical culture methodology from early embryonic-stem-cell literature. Instead of growing on flat surfaces in a laboratory dish, the harvested adipose stem cells are cultured in a liquid suspension in which they form spheroids. "This seems to make them happier," Peltz said.

When they had enough cells, the investigators tested them by injecting them into immune-deficient laboratory mice that accept human grafts. These mice were bioengineered in 2007, in a collaboration between Peltz's lab and study co-author Toshihiko Nishimura, MD, PhD, and other scientists at the Tokyo-based Central Institute for Experimental Animals. Only the livers of these mice contained an extra gene that would convert the antiviral compound gancyclovir into a potent toxin. When these mice were treated with gancyclovir, their liver cells died off quickly.

At this point the investigators injected 5 million i-Heps into the mice's livers. To do that — no mean feat, as these tiny organs weigh a scant 1.8 grams — they used an ultrasound-guided injection procedure that is routinely employed in gastroenterological clinics for biopsies.

Four weeks later, the investigators examined the mice's blood and found the presence of a protein (human serum albumin) that is only produced by human liver cells and was shown to be an accurate proxy for the number of new human liver cells in these experimental mice's livers. The mice's blood had substantial human serum albumin levels, which nearly tripled in the following four weeks. These blood levels correspond with the repopulation of roughly 10-20 percent of the mice's pre-destroyed livers by new human liver tissue. (Past studies have shown only miniscule human serum albumin production, at best, in mice given similar amounts of chemically induced i-Heps.)

Blood tests also revealed that the mice's new liver tissue was discharging its waste-filtration responsibility. Examination of the livers themselves showed that the transplanted cells had integrated into the liver, expressed surface markers unique to mature human hepatocytes and produced multi-cell structures required for human bile duct formation. Other tests indicated that the spherically cultured i-Heps resembled natural human hepatocytes more closely than did i-Heps produced from iPS cells.

Importantly, two months after injection of i-Heps produced by spherical culture, there was no evidence of tumor formation. But mice in which IPS-cell-originated i-Heps were introduced developed multiple tumors, which could be felt through the body surface within three weeks.

At 1,500 grams, a healthy human liver is more than 800 times the size of a mouse's and contains about 200 billion cells. "To be successful, we must regenerate about half of the damaged liver's original cell count," said Peltz. With spherical culture, he said, close to a billion injectable iHeps can be produced from 1 liter of liposuction aspirate, readily obtained from a single liposuction procedure. The cell replication that takes place after injection expands that number further, to over 100 billion i-Heps.

That could be enough to substitute for a human liver transplant, Peltz said. Stanford's Office of Technology Licensing has filed a patent on the use of spherical culture for hepatocyte induction. Peltz's group is optimizing the culture and injection techniques, talking to the U.S. Food and Drug Administration, and gearing up for safety tests on large animals. Barring setbacks, the new method could be ready for clinical trials within two to three years, he estimated.

Additional Stanford co-authors were Jeffrey Glenn, MD, PhD, associate professor of medicine; Sara Michie, MD, professor of pathology; Gordon Lee, MD, associate professor of plastic surgery; and research associates Ming Zheng, PhD, and Manhong Wu, PhD.

The study was funded by a grant from the National Institute of Diabetes and Digestive and Kidney Diseases (grant 1R01DK0909921).

See more at: **http://med.stanford.edu/ism/2013/october/liver.html#sthash.otY2lkEA.dpuf**

From the Chairman

By Ron Pearl, MD, PhD
Richard K. and Ericka N. Richards Professor

This month we begin interviewing applicants for anesthesia residency. As the number of superbly qualified applicants continues to increase each year, there remain questions regarding the future of our specialty. In this column, I will discuss the evolution of anesthesiology to perioperative medicine and what we as a department are doing to advance that change.

Discussions regarding the future of anesthesiology are not new. In the 1994 Rovenstine Lecture, Larry Saidman proposed that our specialty should be renamed "perioperative medicine and pain management" and that "we should be defined by the extent and quality of our comprehensive medical approach to the surgical patient" rather than by our procedural skills. Unfortunately, the underlying reasons for change are often discussed in terms of manpower concerns rather than as the natural evolution of our specialty. Forecasting supply and demand of anesthesiologists is problematic. The 1993 Abt consultant report commissioned by the American Society of Anesthesiologists incorrectly predicted a major oversupply of anesthesiologists, and the recent 2010 report by the RAND corporation, which predicts a shortage, may be equally off the mark owing to uncertainties in surgical volume, percentage of procedures requiring anesthesia services, and changes in practice patterns, where mid-level providers may practice with decreased levels of physician supervision, or even independently.

Recent arguments for perioperative medicine have focused on predicted changes in health care, often related to the Patient Protection Act (Obamacare), so that bundled payments for a given episode of care are divided between the hospital and the practitioners, and accountable care organizations pay practitioners based on the value they provide rather than the services they perform. Compensation for anesthesiologists under such systems may decrease when anesthesiologists provide services for less complex patients and surgical procedures, but may increase when anesthesiologists are able to decrease hospital costs and improve patient satisfaction and outcomes. Proponents of perioperative medicine frequently argue that enlarging the scope of anesthesia practice will allow a larger slice of this revenue pie.

However, I believe the most compelling argument for perioperative medicine is personal satisfaction. Anesthesiologists complete eight or more years of intensive training after college before entering practice. Although all anesthesiology practice can be satisfying and rewarding, I believe most physicians want to "practice at the top of their license" and have the greatest possible impact. Being an anesthesiologist is not simply a job, it is a profession that involves dedication to improving the lives of the patients we serve. I believe extending our role from intraoperative anesthesia to the larger venue of perioperative medicine allows us to expand our impact.

Despite two decades of discussion, there is still no consensus on what perioperative medicine involves and how to train anesthesiologists to do it. These issues are increasingly being discussed at meetings such as the ASA, which this year had multiple panels (including one I organized) discussing the perioperative surgical home. Fortunately, I believe the transition to perioperative medicine is a natural and simple one for anesthesia and will not require a radical change in our training and practice, but will simply represent an extension of what we are currently doing.

One aspect of perioperative medicine is preoperative assessment and optimization. Stanford, under the leadership of Steve Fischer, developed the perioperative assessment clinic,

demonstrating improved outcomes and decreased costs. John Pollard developed a similar clinic at the VA, and we recently have opened active perioperative assessment clinics at Packard Children's Hospital, the Redwood City Outpatient Surgery Center, and Byers Eye Clinic. Perioperative assessment clinics are expensive, but we have already demonstrated that they are a prudent investment for the institution. We have also demonstrated that all anesthesiologists can have the skills required to be effective in preoperative assessment.

A second aspect of perioperative medicine is effective pain management. Our acute pain service and our regional anesthesia service provide superb management of perioperative pain, including the increasing number of surgical patients with chronic pain. Our residency program trains all the residents in the skills required to run an effective program for the large majority of perioperative patients.

A third aspect of perioperative medicine is management of the surgical patient in the ICU. Our faculty and residents are involved in all four ICU services at Stanford and the single ICU service at the VA, all of which provide primary management of surgical patients. Although critical care practice may require training beyond what occurs in anesthesia residency, we are training seven anesthesiology critical care fellows per year. In addition, we anticipate that all of our cardiac anesthesia fellows will gain the skills required to manage patients in the ICU after cardiothoracic surgery.

There are skills that can be valuable in perioperative management that have not typically been part of anesthesiology training. However, we now train all our residents in transthoracic echocardiography, which has applications in preoperative, intraoperative, and postoperative assessment and management. A focus of perioperative medicine is improved systems, and we are increasing training in leadership, quality improvement, patient safety, systems management, and information technology. Stanford has a long tradition of simulation, which emphasizes team leadership skills and training.

One example of perioperative medicine is the new hip fracture protocol at Stanford, which was developed collaboratively by anesthesiology, orthopaedic surgery, internal medicine, and emergency medicine. Patients diagnosed in the emergency department with a hip fracture will be seen within 30 minutes by an anesthesiologist. They will have regional anesthesia so that the adverse effects of narcotics for pain are avoided. They will undergo rapid preoperative assessment by the anesthesiologist and will quickly proceed to the operating room if there are no major contraindications to anesthesia. The intraoperative anesthesia will follow a consensus protocol. Postoperative management will include pain management by the acute pain service and regional anesthesia, and will also include continued follow-up by the anesthesiology service, who will work collaboratively with the hospitalists to prevent perioperative problems. We believe that rapid repair of hip fractures and optimization of postoperative management will decrease morbidity and length of stay. The VA has already developed a broad perioperative medicine service within the anesthesiology department with similar goals.

Although debate continues on a national level regarding the future of anesthesiology, the name of our department as Anesthesiology, Perioperative and Pain Medicine represents the reality that already exists at Stanford. I believe the collaborations currently in place between the different departments involved in the care of surgical patients will allow us to develop new models that will expand the role of the anesthesiologist into the broader area of perioperative medicine. The result will be improved outcomes for our patients and rewarding careers for our faculty and residents.

A focus of perioperative medicine is improved systems, and we are increasing training in leadership, quality improvement, patient safety, systems management, and information technology.

From the Deputy Chief

Vigilance, Boredom, and Multitasking in the Operating Room

What Role for Reading, iPads, Laptop Computers, or Smartphones?

By Rick Novak, MD, Deputy Chief
Associated Anesthesiologists Medical Group

Clinical Case

You're an attending anesthesiologist. You enter another colleague's operating room to give him a bathroom break during his six-hour plastic surgery case, and you find him reading and tapping on the screen of his iPad. What do you do?

Discussion

Is it OK for the anesthesiologist to be reading in the operating room? Is it OK for him or her to be referencing the internet? Answering email? Sending text messages via smartphone? Or should that anesthesiologist be staring transfixed at the monitor screen for hour after hour, maintaining flawless vigilance?

In the *Anesthesia Patient Safety Foundation Newsletter,* Summer 1995 edition, Dr. Matthew Weinger discussed the issue of reading in the operating room. He emphasized that there were no scientific data on the impact of reading on anesthesia provider vigilance or task performance. He cited data that anesthesiologists are 'idle' during 40% of routine cases. He asserted that "anesthesia providers read during these idle periods to prevent boredom, and that boredom was a problem of information underload, insufficient work challenge, and under-stimulation…Adding tasks to a monotonous job may decrease boredom and dividing attention among several tasks (time-sharing) may, in some circumstances, actually improve monitoring performance." Weinger concluded that, "in the absence of controlled studies on the effect of reading in the operating room on anesthesia vigilance and task performance, no definitive or generalizable recommendations can be made. The decision must remain a personal one based on recognition of one's capabilities and limitations. From a broader perspective, the anesthesia task including associated equipment must be optimized to minimize boredom and yet not be so continuously busy as to be stressful."

In the *Anesthesia Patient Safety Foundation Newsletter,* Fall 2004 edition, Dr. Terri Monk opined that reading in the OR seriously compromised patient safety. She was opposed to reading for the following reasons:

1. Reading diverts one's attention from the patient.
2. The patient is paying for the anesthesiologist's undivided attention, and most well-informed patients want to know if the anesthesiologist plans to turn over a portion of their anesthesia care to a nurse or resident. If we are obliged to honestly answer that concern, then, shouldn't we also be obliged to inform the patient that we plan to read during a portion of the anesthetic?
3. Reading is medico-legally dangerous. Dr. Monk wrote, "Any plaintiff's attorney would love to have a case in which the circulating nurse would testify, 'Dr. Giesecke was reading when the cardiac arrest occurred. Yep, he was reading the *Wall Street Journal.* You know he has a lot of valuable stocks that he must keep track of.' It is possible that if anesthesiologists informed their malpractice carriers that they routinely read during cases, the companies might raise premiums or cancel malpractice coverage."
4. The practice of reading in the OR projects a negative public image. Nurses, technicians, and surgeons may think the anesthesiologist is less professional.

A 2009 study (Slagle JM, Weinger MB. Effects of intraoperative reading on vigilance and workload during anesthesia care in an academic medical center. *Anesthesiology.* 2009; 110(2):275–83) looked at 172 selected general anesthetic cases in an academic medical center.

Vigilance was assessed by the response time to a randomly illuminated alarm light. Reading was observed in 35% of cases. In the 60 cases that involved reading, providers read during 25 ± 3% of maintenance time, but not during induction or emergence. Vigilance to the alarm light was no different between readers and non-readers.

Miller's Anesthesia (7th Edition, 2009, chapter 6) states, "Although it is indisputable that reading can distract attention from patient care, there are no data at present to determine the degree to which reading does distract attention, especially if the practice is confined to low-workload portions of a case. Furthermore, many anesthetists pointed out that reading as a distraction is not necessarily any different from many other kinds of activities not related to patient care that are routinely accepted, such as idle conversation among personnel."

A 2012 study (Jorm CM. Laptops and smartphones in the operating theatre—how does our knowledge of vigilance, multi-tasking and anaesthetist performance help us in our approach to this new distraction? *Anaesthesia Intensive Care*. 2012; 40(1):71–8) concluded there were no data concerning the effects of the use of laptops and smartphones in the operating theater on anesthetist performance, and that these devices were now in frequent use. They discussed the use of laptops and smartphones in regard to the two pertinent issues of vigilance and multitasking. There were data that in some circumstances the addition of a secondary task (i.e., using a laptop or smartphone) during periods of low stimulation can improve vigilance and overall task performance, but the workload and the nature of the secondary task were critical. The authors made the following points regarding the nature of anesthesia work and the factors that affect performance in anesthesia:

1. Anesthesia involves multi-tasking and the maintenance of situational awareness. Studies have shown that attending to a range of tasks simultaneously is a key characteristic of anesthetic practice, and that anesthetists are superior to non-anesthetists in performing additional tasks while monitoring patients.
2. Anesthetists typically only glance at monitors. Covert observations of anesthetists in British Columbia revealed subjects spent less than 5% of their time observing the monitoring display. This was made up of brief glances (1.5 to 2 seconds duration) occurring 15–20 times during each 10-minute segment of time.
3. Anesthetic work is reduced during prolonged maintenance, potentially resulting in boredom and/or secondary activities being undertaken. The maintenance phase in some anesthetics (typically cases of longer duration, lower complexity and where the patient is stable) may be a time of low workload and infrequent task demands. In a study of 105 anesthesia clinicians, half reported being bored infrequently, but 90% admitted to occasional episodes of extreme boredom. Boredom can result in severely decreased vigilance if the anesthetist is suffering from sleep deprivation.
4. The authors concluded there was no evidence to support a blanket prohibition on the use of smartphones and laptops in the operating theater, and there was good reason to avoid edicts that are not supported by solid evidence. They stated, "There is no doubt that reading or computer usage gives the appearance of being less attentive, even if there are no measurable effects on routine care... Computer and phone tasks that also require immediate responses appear to provide a greater risk than reading (whether from a book or screen). While boredom may be cognitively unpleasant, there is no evidence of anesthetist boredom (in the absence of sleep) harming patients."

I recently attended the American Society of Anesthesiologists national convention in San Francisco. At the conclusion of the meeting, the ASA emailed me a full text edition of the refresher course lectures as an email attachment, in a format designed to be downloaded onto a computer. Like myself, more than 10,000 anesthesiologist attendees of the ASA meeting will now have access to the refresher course curriculum on their laptops or iPads. Will some of them read these refresher courses during the stable maintenance phases of anesthetics in their operating rooms? Perhaps.

Returning to the clinical case for discussion above, what will you do about your colleague you discovered using his iPad in the operating room? My guess is, based on what has been published in the anesthesia literature, you'll give him the bathroom break as intended, and say nothing about his use of the iPad in the operating room.

From the Residency Program Director

Stanford Anesthesia Resident Education Pathways

By Alex Macario, MD, MBA

At Stanford Anesthesia, our vision is to provide the environment and resources to help fulfill the resident's highest professional potential. The goal is to produce outstanding clinical anesthesiologists and leaders who also have additional areas of expertise.

This expertise is gained via Stanford Anesthesia Resident Education Pathways, which could include:

- Research via the FARM program
- Global health
- Medical education
- Quality improvement/management/IT
- Combined clinical training in pediatrics and anesthesia
- Combined training in internal medicine and anesthesia
- Specialty clinician, including post-residency fellowship (pain, cardiac, CCM, regional, OB, etc.).

The rationale for this approach stems in part from the 2010 Carnegie study on medical education, which recommended (1) developing individualized learning pathways within medical training, (2) providing learners opportunities to experience broader professional roles, and (3) creating smaller learning communities within larger programs to promote career development (e.g., specialty clinician, investigator, leader, educator).[1]

Stanford Anesthesia has the infrastructure and qualified faculty to support resident development in these areas. There is flexibility in the residency training such that each resident tailors their experience to suit their goals. Each pathway features a community of learners and faculty with similar interests, didactic content, experiential activities, and a scholarly project.

Residents of the Month

Please join me in congratulating the following residents of the month:

September: **Alex Quick**

October: **Carter Peatross**

Curricular Features of Stanford Anesthesia Pathways

Pathway	Rotation & electives available during residency	Formal dept. resident leadership position	Fellowship available after residency
FARM research	Yes[2]	Yes[3]	Yes
Global health	Yes	Yes	Yes[4]
Medical education	Yes	Yes	Yes
QI/management/IT	Yes[5]	Yes	Yes[6]
Combined pediatrics anesthesia	Yes	2 per year	Yes[7]
Combined medicine anesthesia	Yes	3 per year	Yes
Specialty clinician (e.g., echo track)	Yes	Possible	Yes[8]

1 Irby DM, Cooke M, O'Brien BC. Calls for reform of medical education by the Carnegie Foundation for the Advancement of Teaching: 1910 and 2010. Acad Med. 2010; 85(2):220–227.

2 http://med.stanford.edu/anesthesia/education/residentresearch.html

3 http://askalex.stanford.edu/archives/2012/10/stanford-anesth-5.html

4 https://www.stanford.edu/group/globalanesthesia/cgi-bin/mediawiki/index.php/Main_Page

5 http://askalex.stanford.edu/archives/2012/08/quality-and-saf.html

6 http://cerc.stanford.edu/

7 http://pedsanesthesia.stanford.edu/education/

8 http://med.stanford.edu/anesthesia/education/fellowships.html

Spotlight on Dr. Tammy Wang

Department of Anesthesia's Senior Resident Teaching Scholar

Dr. Tammy Wang, the department's senior resident teaching scholar for 2013–14, has a particular interest in medical education. Tammy has, so far, translated this interest into action by updating the current CA-1 Tutorial that new anesthesia residents receive at the beginning of the year. She has also added a "Lunch & Learn" session in which medical students in the general OR rotation give a short, informal talk on a topic of their choice to other medical students, senior residents, and anesthesia faculty.

Tammy decided to make changes to the medical student curriculum after the receiving feedback from the previous year's students indicating that they wanted a tutorial more tailored to their specific educational needs. She also felt it was essential to give students the opportunity for self-directed learning and the ability to interact with more residents and faculty. In addition, the medical students now receive a "medical student tutorial," a modification of the CA-1 Tutorial.

The updated curriculum was put in place at the beginning of this academic year with the new medical students in block 3. Tammy said that faculty and residents who have attended the Lunch & Learn sessions are impressed with the quality of the talks and find them valuable for everyone involved.

Tammy completed her undergraduate studies at Stanford and attended medical school at the College of Human Medicine at Michigan State, graduating in 2003. Between 2003 and 2006 she was a pediatric resident at Children's Hospital & Research Center in Oakland, and served as chief resident from 2006–2007. Tammy worked as a pediatric hospitalist at Children's Hospital in Oakland from 2007 until 2011, when she returned to Stanford to begin an anesthesia residency. She plans to stay at the Lucille Packard Children's Hospital to complete a pediatric anesthesia fellowship.

As the senior resident teaching scholar, Tammy has a particular interest in medical education, global health, and volunteering. She has participated as a pediatrician on global health trips to China, Venezuela, Haiti, Ghana, and Bangladesh. As a CA-2, Tammy traveled to Rwanda on a cleft palate mission. In addition, Tammy received an award this year from the Society for Education in Anesthesia/Health Volunteers Overseas to teach anesthesia to students in Africa.

Tammy is also responsible for coordinating ImPRINT, the simulation and innovative learning course for the categorical Stanford anesthesia interns, and she is the anesthesia representative in the Department of Graduate Medical Education.

Dr. Wang and her patient, Rwanda 2012

Call for Applications

$55K Rathmann Family Foundation E4C Medical Education Fellowship in Patient-Centered Care

The Stanford University School of Medicine Office of Medical Education, in conjunction with the Stanford Center for Medical Education Research and Innovation (SCeMERI), is pleased to announce the annual call for applications to the Rathmann Family Foundation Educators-4-CARE (E4C) Medical Education Fellowship in Patient-Centered Care. This program will provide a year of part-time salary support of $55,000 for a Stanford faculty, fellow, or chief resident to pursue further study and activities focused on the promotion of patient-centered care in medical education. Areas of study may include instructional design, curriculum development, or evaluation. Alternatively, individuals may have topical areas of interest, such as clinical skills, compassion and humanism, or professionalism.

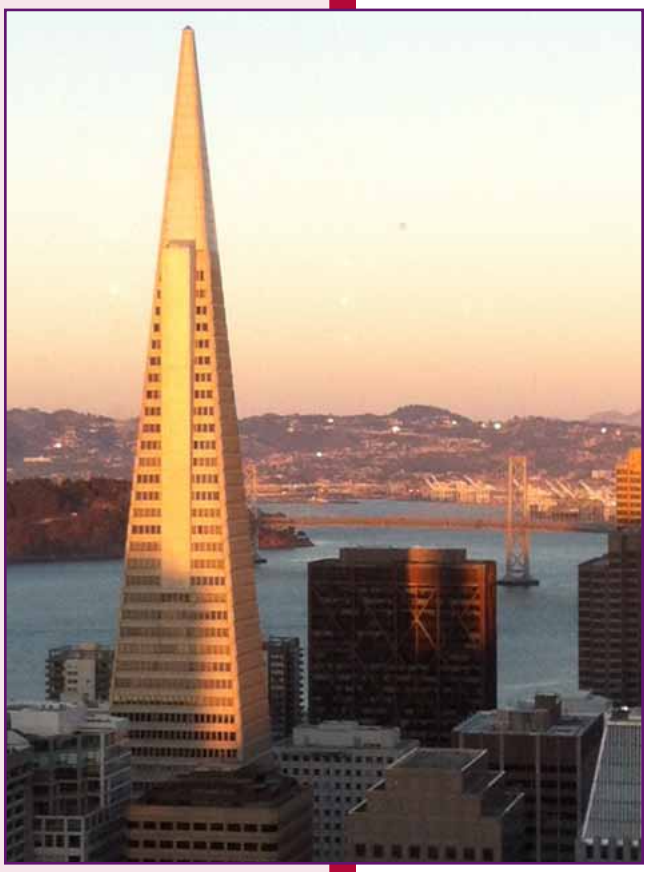
The fellowship provides protected time to support participation in a weekly medical education fellows' seminar covering theory and methods in medical education research, under the supervision of the program's faculty directors and the SCeMERI researcher scholars; and development and conduct of a scholarly project in medical education related to patient-centered care. The fellow will participate in the E4C program, serving as a mentored preceptor with selected E4C faculty in educational activities that are part of the E4C program.

As the name implies, the Educators-4-CARE program prepares students to adopt the core values of the profession—Compassion, Advocacy, Responsibility, and Empathy—from the beginning and throughout medical school. Launched in 2008, the program formally recognizes the critical importance of mentors and clinical teachers by providing tangible support to a cadre of skilled and dedicated teachers of the practice of medicine. Fifteen program faculty are supported for time to serve as teachers and mentors for a small number of students (about six) from each medical school class. After intense faculty development in the principles and practice of patient-centered care, the E4C faculty formally teach bedside clinical skills to preclinical students as part of the Practice of Medicine course. In addition to these regular sessions, E4C faculty meet with their students from all years on a bimonthly basis, in the Doctoring with CARE sessions. These encounters allow for important near-peer interactions, mentoring, and revisiting important and cross-cutting issues in medical practice, with a major focus on patient-centered care.

Application packets are available on the E4C website at **http://med.stanford.edu/e4c/rathmann.html**. In addition to a completed application, applicants must provide letters of recommendation, a curriculum vitae, a personal statement, and departmental/division approval. If you are interested in applying, email a scanned copy of the application packet to Lars Osterberg, MD, MPH, Director, Educators-4-CARE, at *larso@stanford.edu*. Please cc Jackie Ramos (SCeMERI program coordinator) at *jackier@stanford.edu*.

Applications are due by Friday, January 31, 2014.

ASA Stanford Alumni Reception



San Francisco provided a resplendent backdrop for the alumni reception hosted by the Department of Anesthesia in conjunction with the Annual Meeting of the American Society of Anesthesiolgists. The reception, held in the Crown Room atop the Fairmont Hotel, afforded current department members, alumni, and guests the chance to catch up with each other while enjoying an almost 360-degree view of the city and its famous landmarks, and an assortment of delicious hors d' oeuvres and libations.

▲ *From left: Jimmie Tan, Adam Djurdjulov, Marc Dobrow, Ryan Moutjoy*

▲ *Top photo, from left: John Brock-Utne, Ron Pearl, Carolyn Schifftner, Brendan Carvalho, Kate Ellerbrock. Bottom photo, from left: Jack Kan, Erin Hennessey, Eric Gross, John Brock-Utne, Carolyn Schifftner, Kate Ellerbrock, Sarah Bain*

New Faces

Clinical Research Manager Katherine Connors has been busy organizing the non-nursing staff of clinical research associates (CRAs) to increase efficiency and better meet the research needs of the department. She would like you to meet the following four full-time and five part-time, casual CRAs.

Full-time CRAs

Tom Rico first set eyes on the world at Stanford Hospital, grew up in San Jose, and graduated from UC Santa Barbara in 2009 with a BS degree in cell and developmental biology. Tom returned to his birthplace in May where he is currently working for Dr. Larry Chu on an NIH-funded study exploring the use of ondansetron to mitigate the symptoms of opioid dependence. Tom's background is in sleep medicine and isotope dilution mass spectrometry, and he is developing his computer programming talents to pursue bioinformatics.

▼ *Tom Rico*

▲ *Yan He*

Yan He, PhD, has been with Stanford since September 2013. She currently works for Dr. Gregory Hammer on a PK and PD study of intravenous acetaminophen to treat moderate to severe pain following surgery or traumatic injury in pediatric patients under the age of 2. The study is sponsored by Cadence, Inc. Yan was born in Beijing, China, and obtained her PhD in neurobiology at Drexel University in Philadelphia. Her main professional interest is in therapeutic clinical trials that have the potential to improve quality of care for common diseases and conditions. When she's not working, Yan enjoys traveling, sightseeing, visiting local farms, and playing with her daughter.

▼ *Maria Adelus*

Maria Adelus was hired as a part-time CRA in April and came on board as a full-time employee in July. A native of Los Gatos and a graduate of Santa Clara University with a degree in women's and gender studies and religious studies, Maria began her research career at the age of 19 in Stanford's Behavioral and Functional Neuroscience Laboratory. Shortly after receiving her undergraduate degree in 2010, she enrolled in a post-baccalaureate premed program and continued her research in UCSF School of Medicine's Department of Psychiatry. Currently, Maria is primarily involved with a study of the pharmacokinetics of magnesium sulfate. "I enjoy spending most of my time working with pregnant moms in labor and delivery," she said. Although she works full-time at Stanford, she is also studying for her master's degree in public health and hopes to one day receive her medical degree. "I have a passion for women's health and a vision for effecting change in healthcare administration for disadvantaged and vulnerable populations," Maria said. In the little spare time that remains, Maria appreciates the outdoors, fitness, and spending time with family and friends.

New Faces

▼ *Ed Ganio*

Redondo Beach native **Ed Ganio,** PhD, began his career at Stanford in August. He is currently focusing his efforts processing blood samples collected from study volunteers and analyzing changes in immune cell profiles in stimulated and non-stimulated whole blood, as measured by mass cytometry, for several studies in Dr. Martin Angst's lab examining immune changes following hip replacement and colorectal surgery, with or without pre-surgical nutritional supplementation, and immune differences between mothers and neonates born by cesarean section. Ed's work also involves immune profiling of healthy volunteers. Ed has an extensive background in research. At Corvas International, Inc., he analyzed the efficacy of in-house synthetic inhibitors of enzymes involved in AIDS, malaria, thrombosis, and hepatitis. At UCSF he worked on studies of high-throughput mu opioid receptor antagonism and PKC epsilon antagonism, as well as a study of the genetics of alcoholism using SNPs to address genetic predisposition. In a UC Davis study, Ed discovered TRIP12 as a novel co-factor of Sox6 in muscle. The study demonstrated that proteasomal degradation of Sox6 protein is mediated by TRIP12 E3 ubiquitin ligase activity, with subsequent effects on Sox6 downstream targets. In his free time, Ed enjoys exploring Northern California (especially the redwood forests) and composing music.

Part-time CRAs

Erika Cornell and **Hannah Obasi** began working with Dr. Larry Chu this year during the last quarter of their senior year at Stanford. They work closely with Tom Rico and research nurse Robin Okada on the NIH-funded, ondansetron back-pain study. Both Erika and Hannah are applying to medical school. As an undergraduate, Hannah developed an interest in international healthcare disparities. "[I'm] not sure where that will take me quite yet," she said. Erika, who comes to us from Truckee, California, has an interest in emergency medicine and pediatrics, but she's not sure what she will focus on in medical school. "I'm open to most fields at this point," she said.

Howard Sanders, Sara Connolly, and **Ross Cadman** joined Stanford this fall as part-time research assistants working for Gregory Hammer to provide coverage for evening and night shifts for the Cadence, Inc., acetaminophen study. All three are applying for medical school. Howard is from Seattle and came to San Jose to attend college on a baseball scholarship. He decided to pursue a career in medicine after shadowing his oncologist father. He has also worked as an intern for an orthopaedic surgeon, and he volunteers at LPCH. He developed a special interest in anesthesiology while observing surgery and after visiting post-operative patients. "The practice of anesthesia greatly impacts all other specialties of medicine," he said.

Both Sara and Ross graduated from Princeton University. Sara has a degree in evolutionary biology and global health and wrote her thesis on the genetics of autism. She will be working with research nurse Carol Cohane on the open-label clevidipine study to assess the its efficacy, safety, and dosing in pediatric patients undergoing surgery. Ross is from Pennsylvania and is interested in pursuing a career in orthopedic surgery. He will be working on the Depomed study, which is a phase 4, open-label trial of the safety and efficacy of Zipsor (diclofenac potassium) liquid-filled capsules in pediatric subjects (ages 12–17 years) with mild to moderate acute pain.

Division News

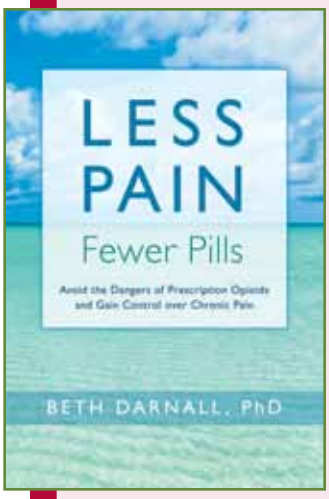
Pain Medicine

The Pain Medicine Division continues to lead the way both in research into the causes and treatment of chronic pain and in educating both clinicians and patients about the need to use a holistic, team-based therapeutic approach to obtain the best results. In this regard, the Discovery Channel is currently airing a film entitled "Pain Matters," which provides a detailed look at the science and treatment of chronic pain and features commentary by the nation's leading experts in pain management, including Dr. Sean Mackey. The film also discusses the implications of untreated pain and the future of pain management. "Pain Matters" first aired on the Discovery Channel on Saturday, November 16. It is currently set to be re-broadcast on December 7 and 14 at 8:00 AM, and is available online at www.PainMattersFilm.com.

Faculty News

Congratulations to Sean Mackey, who is the incoming president of the American Academy of Pain Medicine, the national organization for pain physicians. This prestigious position solidifies Sean's already well-established reputation as a national leader among his pain-physician peers. It will also enable him to have further influence in AAPM and, more broadly, on national policies related to the prevention, assessment, treatment, and research of pain. Sean already plays a significant role in shaping national pain policy: he has been named co-chair of the NIH/HHS National Pain Strategy Task Force Oversight Committee, which is charged with developing a plan to implement the recommendations from the Institute of Medicine's report on pain, which he co-authored.

In addition to her clinical time, research, and typical writing and speaking endeavors, pain psychologist Dr. Beth Darnall has been busy working on a new book, *Less Pain, Fewer Pills: Avoid the Pitfalls of Prescription Opioids and Gain Control Over Chronic Pain.* Currently in press, the book describes the risks and pitfalls of prescription opioid use in treating chronic pain, and outlines some specific ways of treating the full definition of pain, tapering off of prescription opioids, and learning to use these drugs mindfully. Less Pain, Fewer Pills is a useful educational tool for both patients and clinicians. It will be available in July 2014.



Staff News

The division welcomes two new staff members, assistant pain clinic manager **Ann Cullen,** and administrative supervisor **Lyly Truong.**

▼ *Ann Cullen*

Ann has been with Stanford Hospital and Clinics for nearly eight years. She earned her Bachelor of Arts in psychology from Emory University in Atlanta and followed by a bachelor of science in nursing at New York University. Ann started her nursing career as a bedside nurse on D2/D3, where she worked for approximately two years before moving into pediatrics as a bedside nurse in the pediatric intensive care unit at the Lucile Packard Children's Hospital. While working in the PICU, Ann earned a master of science in nursing at UCSF,completing the community health and international nursing track, with a focus on program development and program management. After graduation, Ann accepted a program manager position at Stanford Hospital, where she participated in the implementation of, and managed the sustainability of, daily interdisciplinary rounds for all inpatients. In that role, Ann also had the opportunity to complete the Stanford Operating System training, learning about and applying lean philosophies in the healthcare setting. She has led Rapid Process Improvement

Division News

workshops as well as 5S workshops aimed at reducing waste and improving the patient experience in the acute inpatient setting.

A native of Minnesota, Ann explored several cities before settling in San Francisco, where she now lives with her husband Patrick. With a focus on improving the access and availability of quality healthcare for all people, Ann has been involved in several community-based organizations that work to achieve this same goal. She is currently an active member of the Palo Alto University Rotary Club, which supports education and health in Palo Alto and the surrounding towns, including providing support for RotaCare Bay Area, a network of free clinics serving uninsured people living in our community. Ann loves to be outdoors, and her happiest place is on a canoe in the middle of a lake in the Boundary Waters Canoe Area Wilderness on the Minnesota-Ontario border.

Ann is located at the pain clinic in Redwood City and can be reached by calling 650.723.6238; her email address is *Acullen@stanfordmed.edu*.

▼ *Lily Truong*

Lyly Truong is occupying the newly created position of administrative supervisor. Chiefly, Lyly is taking over many diverse administrative roles that Andrew Morrow has performed since 2005. This includes managing Sean Mackey's calendar and schedule, supervising the administrative staff, and supporting other faculty. She will also play a role in pre-award grants management, and will lead website-related projects.

Before joining the division, Lyly was as the medical education program administrator in Stanford's Office of Medical Education,where she directly supported the associate and assistant deans for undergraduate and graduate education. Before joining Stanford, Lyly obtained a masters degree in organization and leadership from the University of San Francisco School of Business.

Lyly's interests outside of work include marketing, product design, and brand promotions. In her spare time, she is a blogger and writer. She has worked with many local and national brands on their social media and marketing campaigns, and on promoting new products already on the market. She also enjoys hiking with her Chihuahua, and hopes to open her home to foster children and foster pets in the near future.

Lyly Truong is located at the 1070 Arastradero Road office. She can be reached at 650.497.0484; her email address is *lylyt@stanford.edu*.

As for Andrew Morrow, he is not going anywhere. Lyly's new role represents the culmination of a lengthy restructuring plan that will allow Andrew to delegate significant administrative responsibilities and focus on a much larger role managing the division's research, clinical, and operational finances. He has already taken over significant research accounting responsibilities, and will begin to take on higher-level clinical finance and strategic planning responsibilities.

"Our division has grown exponentially over the past 6+ years, and our managerial and administrative staff play a large role in our continued growth and success. We are pleased to welcome Ann and Lyly to such a strong group," Sean said.

Division News

VA

By Edward Mariano, MD

Under the leadership of Dr. Tessa Walters, the perioperative care consult service at the VA Palo Alto Health Care System (VAPAHCS) has evolved into the Perioperative Surgical Home model. This model incorporates a "concierge" approach to perioperative care to provide the highest level of patient and provider satisfaction, and to continually improve anesthesia services for our veterans. Every day a dedicated anesthesiologist visits all inpatients who had surgery and/or anesthesia the previous day, and continues to follow any patients who have unresolved medical issues, paying special attention to anesthetic sequelae, inpatient management of chronic medical conditions, and pain control. Patients and their families are given all the time they need to ask questions and address any of their unmet needs. We often interface with the patient's ongoing care team, including surgeons, intensivists, and primary internists/subspecialists. As the leaders of the "perioperative surgical home," we are invested in the best outcomes for veterans at every point in their perioperative journey. We are always examining our efforts, aiming for greater patient satisfaction, reductions in complications (such as postoperative nausea and vomiting, poor glycemic control, or surgical infections), and improved perioperative pain and anxiety control. Not only does our "surgical home" allow us to monitor outcomes on all patients we anesthetize and refine our practice, but it also strengthens a deeper connection with our veterans at a critical moment in their lives. Ultimately, this approach promotes better longitudinal care. To make our patients and providers aware of this program, we have updated our website to provide additional details and background: http://www.paloalto.va.gov/anes_periop.asp.

Before the end of the baseball season Joshua Nguyen, one of our Pathways administrative interns, was honored at a San Francisco Giants game for his volunteer work with Reading Partners, a national nonprofit organization that provides one-on-one tutoring in basic reading skills to students in under-resourced schools. We applaud Joshua's dedication to this important cause.

Dr. Kyle Harrison was promoted to the rank of clinical associate professor of anesthesiology, perioperative and pain Medicine at Stanford University School of Medicine. Dr. Harrison has been a staff anesthesiologist at VA Palo Alto since 2003 and is an integral part of the Stanford anesthesiology residency program, serving as an associate residency program director. He is also a member of our internationally recognized simulation education and research team.

Dr. Steven Howard, associate professor and co-director of the VAPAHCS simulation program, is the new chair of the Anesthesia Patient Safety Foundation's Scientific Evaluation Committee (http://apsf.org/newsletters/html/2013/fall/04_howard.htm).

Finally, VAPAHCS anesthesiologists are featured prominently in the November 2013 issues of *Anesthesia & Analgesia*. Dr. Steven Howard co-authored a special article explaining why cognitive aids are essential to effective crisis management and providing suggestions for incorporating cognitive aids into clinical practice. This article is accompanied by an editorial by Dr. David Gaba, co-director of the VAPAHCS simulation program, and professor and associate dean for immersive and simulation-based learning at the Stanford University School of Medicine. David also contributed the November 2013 "Ask the Experts" podcast in OpenAnesthesia on the subject of cognitive aids and simulation. The podcast can be accessed at http://www.openanesthesia.org/OpenAnesthesia.org:MultimediaPlayer#tab=Ask_the_Expert.

Division News

Global Health

By Ana Crawford, MD

▲ *Rebecca McGoldrick*

We are thrilled that our very first global health and anesthesia fellow, Dr. Rebecca McGoldrick, is scheduled to start November 7. Rebecca is a recent graduate of the anesthesia program at University of Alabama at Birmingham. At UAB, Rebecca donated her medical skills to underserved populations in Ecuador and Kenya. These experiences underscored for Rebecca the critical need to increase the availability of basic medical care and monitoring in undeveloped nations, and solidified her goal to pursue a career in global health. Rebecca was attracted to Stanford because it offers one of the only comprehensive fellowships in global health in the nation. At Stanford, Rebecca will spend up to 12 weeks traveling abroad, and she can also be seen working in the ORs. Please join me in wishing Rebecca a warm welcome to the department.

We also want to congratulate Drs. Chris Press and Melanie Gipp on being selected to participate in the annual teaching trip to Rwanda. They will both be intimately involved in delivering a portion of the curriculum to the anesthesia residents at the National University of Rwanda. Educational activities include lectures and constructionist approaches, including case-based and team-oriented teachings. In addition, we are excited to again be able to utilize the recently opened simulation center funded by the Canadian Anesthesiologists' Society International Education Foundation. The simulation center was a special stop during Former President Bill Clinton's last visit to the teaching hospital in Kigali.

Division News

What's New in the Research Division?

By Michael K. Helms, PhD, MBA

The government shutdown made the fall quarter very trying for the Research Division. Some grant applications were not reviewed as planned and others could not be submitted. However, now that the shutdown is over, we have submitted applications and we have good reason to hope for more awards in the coming months. Needless to say, we hope there is not another shutdown after the New Year!

In terms of current successes, we congratulate Jarred Younger on a recent grant from the Fetzer Institute entitled "Moral Elevation, Oxytocin, and Pain," and as a mentor on Luke Parkitny's fellowship grant from IASP entitled "Neuromodulatory Pharmacotherapy in Pain: Therapy and Outcomes."

Dr. Sean Mackey was awarded an additional year of funding on the NIDDK U01 2U01DK082316-06, for the national MAPP Research Network researching pelvic pain.

Dr. Gregory Hammer began work on two new clinical trials entitled "The use of clevidipine for blood pressure control in children" and "Diclofenac for postoperative analgesia in children."

At the recent ASA meeting in San Francisco, an abstract by Ed Mariano and colleagues entitled, "Inpatient falls after total knee arthroplasty—the role of anesthesia type and peripheral nerve blocks," was voted one of the clinical science "best of abstracts." The results of this study demonstrate no association between peripheral nerve blocks and inpatient falls and a negative association between neuraxial anesthesia and inpatient falls from a database of more than 190,000 patients.

On Saturday, October 26, there was a research retreat for members of the Research Committee and Research Executive Committee. Many topics were reviewed, including the organization of our human subjects research program, our research seminar series, the recruitment of new faculty, and our use of space. The entire department is likely to notice some of these efforts in the near future.

Residents vs Attendings Epic Battle Now History

CA-3's Joined Residents to Throttle CA-1, 2, and 0's

By Ryan Mountjoy, CA-3

On a perfectly cloudless, sunny Saturday in September, the Stanford Anesthesia department descended upon the Nealon Park softball field in Menlo Park to do battle on the diamond. Dr. Rosenthal, the first attending to show up, was quick to warm up and stretch out that arm in case the Boston Red Sox scouts were in town. The clock drifted towards 2PM and more players arrived with a fierce competitive fire in their eyes.

The CA-2 contingent led by none other than Chris Miller, Justin Pollock, Chris Press, and Jan Sliwa, arrived, specially decked out in custom cut-off scrubs. A strong CA-1 pool quickly loosened up in preparation for battle. Even some CA-0s arrived to play! Alas, the attending group needed a little help fielding a complete team, so a last-minute change of lineup resulted in a match that pitted CA-3 and attendings versus CA-0, 1, and 2 hotshots.

It was a 7-inning affair, replete with home runs, a suspect grand slam by none other than the program director himself, Dr. Alex Macario, and the unique swinging style of Dr. Pedro Tanaka. In the end, the CA-3/attending squad clobbered the CA-0, 1, and 2s 17–11.

A hearty BBQ by Armadillo Willy's followed the game, allowing players and spectators alike to chow down on massive amounts of ribs, chicken, spicy slaw, corn bread, etc.

I would like to personally thank the Anesthesia Department for sponsoring this event. Without their genuine commitment to fun activities outside of work, the game would not have been possible. It is truly a blessing to have a department that is dedicated to the wellness of their residents and staff. A big thank you to them!

And a big thank you to all who came to this (we hope) annual event. Be on the lookout for another shot at softball glory this spring.

Farewell to Rosario Garcia

By John Brock-Utne, MD

We held a party to say farewell to Dr. Rosario Garcia on Friday, August 30. Rosario started with us on January 1, 2011, and was promoted to assistant professor exactly a year later. Rosario will be continuing her career in New York.

We wish Rosario all the best and thank her for her tremendous contribution to our department and the happiness she brought to the lives she touched.

Clockwise from left: Pieter van der Starre, Mike Rosenthal, Rosario Garcia, Kevin Mallott, Joycelyn Mallott, Ruth Fanning, Jay Brodsky, Mauve Hennessy, Ali Djalali

Clockwise from left: Mike Rosenthal, Rosario Garcia, Kevin Mallott, Joycelyn Mallott, Ruth Fanning, John Brock-Utne

Social Event

The 3rd Annual Arts in Anesthesia Soirée is scheduled for Thursday, May 22. The Department of Anesthesia, Perioperative and Pain Medicine sponsors this unique evening to enable department members, alumni, and their families to connect through creativity. In past soirées, participants have showcased their myriad talents in many artistic fields, including painting, photography, arts and crafts, music, dance, and creative writing. Be sure to save the date and watch for details in the upcoming year.

Department of Anesthesia
Holiday Party

DATE CHANGE:

Saturday, December 14, 2013

Arrillaga Alumni Center
326 Galvez Street

Cocktails and hors d'oeuvres at 6:00 p.m.
Dinner at 7:00 p.m.
Music, Karaoke, Dancing

RSVP to Carolyn Rebello crebello@stanford.edu
no later than December 3rd please

Please include the first and last name of your guest. Adults only, please.

Faculty Corner

Journal Publications

Anuj M, Mackey S. Outcomes in pain medicine: A review. Pain Ther. 2013; 1(1). DOI:10.1007/s40122-012-0005-4.

Carvalho B, Tan J, Macario A, El-Sayed Y, Sultan P. A cost-analysis of neuraxial anesthesia to facilitate external cephalic version. Anesth Analg. 2013; 117(1):155–9.

Darnall BD, Schatman ME. Autonomy vs paternalism in the emergency department: the potential deleterious impact of patient satisfaction surveys. Pain Medicine. 2013; 14(7):968. doi: 10.1111/pme.12170.5. PMID:23653045.

Dworkin RH, O'Connor AV, Kent J, Mackey S, Raja SN, Stacey BR, Levy RM, Backonja M, Baron R, Harke H, Loeser JD, Treede RD, Turk DC, Wells CD. Interventional management of neuropathic pain: NeuPSIG recommendations. Pain. 2013: 154(11):2249–61.

Fishman SM, Young HM, Lucas Arwood E, Chou R, Herr K, Murinson BB, Watt-Watson J, Carr DB, Gordon DB, Stevens BJ, Bakerjian D, Ballantyne JC, Courtenay M, Djukic M, Koebner IJ, Mongoven JM, Paice JA, Prasad R, Singh N, Sluka KA, St Marie B, Strassels SA. Core competencies for pain management: Results of an interprofessional consensus summit. Pain Medicine. 2013: 14(7):971–981.

Giffard RG, Macario A, Conway DE, Macario E. The future of molecular chaperones and beyond. J Clin Invest. 2013; 123(8): 3206–3208.

Hammer GB, Connolly SG, Schulman SR, Lewandowski A, Cohane C, Reece TL, Anand R, Mitchell J, Drover DR. Sodium nitroprusside is not associated with metabolic acidosis during intraoperative infusion in children. BMC Anesthesiol. 2013; 13:9. PMID:23631460.

Henke VG, Bateman B, Leffert L. Spinal anesthesia in severe preeclampsia. Anesth Analg. 2013; 117:686–93.

Leng JC. An anesthesia resident's prayer. Anesthesiology. 2013; 119(2):483. PMID: 2371961. *See sidebar, right*

Mackey S. Central neuroimaging of pain. J Pain. 2013; 14(4):328–31.

Moon JM, Xu L, Giffard RG. Inhibition of microRNA-181 reduces forebrain ischemia induced neuronal loss. Cereb Blood Flow Metab. 2013. [Epub ahead of print]

Mudumbai SC, Kim TE, Howard SK, Workman JJ, Giori N, Woolson S, Ganaway T, King R, Mariano ER. Continuous adductor canal blocks are superior to continuous femoral nerve blocks in promoting early ambulation after TKA. Clin Orthop Relat Res. 2012. PMID: 23897505. [Epub ahead of print]

Nash P, Wiley K, Brown J, Shinaman R, Ludlow D, Sawyer AM, Glover G, Mackey S. Functional magnetic resonance imaging identifies somatotopic organization of nociception in the human spinal cord. Pain. 2013; 154:776–81.

Ouyang YB, Giffard RG. microRNA regulates the chaperone network in cerebral ischemia. Transl Stroke Res. In press.

Ouyang YB, Stary CM, White RE, Giffard RG. The use of microRNAs to modulate redox and immune response to stroke. Antioxid Redox Signal. In press.

Ouyang YB, Stary CM, Yang GY, Giffard RG. MicroRNAs: innovative targets for cerebral ischemia and stroke. Curr Drug Targets. 2013; 14, 90–101.

Ouyang YB, Xu L, Lu Y, Sun XY, Xiong XX, Giffard RG. Astrocyte enriched miR-29a targets PUMA and reduces neuronal vulnerability to forebrain ischemia. Glia. 2013; 61(11):1784–1794.

Schatman ME, Darnall BD. Among disparate views, scales tipped by the ethics of system integrity. Pain Medicine. November 8, 2013. DOI: 10.1111/pme.12257_4.

An Anesthesia Resident's Prayer

Jody C. Leng, MD, MS

Now I lay me down to sleep
I pray this pager does not beep
Please no risky extubations
Please no lengthy explanations
Please no 4 AM calls for section
Please no swallowed razors in corrections
In this county, please no riots
Keep all the guns locked up and quiet
Keep the drunks out of their cars
Keep rabble-rousers behind bars
Keep all jigsaws out of hands
Keep all the Nattys in their cans
Keep all the rusty knives in blocks
Let all the crack stay formed in rocks
Let all the brains stay mass effectless
Give all the semi-urgents breakfast
Let every epidural work
Let no vascular disasters lurk
Let nobody's water break
Let nobody's RLQ ache
Let me not hear that timeout bell
Let not one fetus have decels
Let no heart failure be end stage —
Beep beep beep... "This is anesthesia, returning a page..."

Faculty Corner

Schatman ME, Darnall BD. "Just saying no" to mandatory pain CME: How important is physician autonomy? Pain Medicine. November 8, 2013. DOI:10.1111/pme.12285_4.

Schatman ME, Darnall BD. Misguided direction? Pain Medicine. In press.

Schatman ME, Darnall BD. Upscheduling of hydrocodone: convenience and access vs. patient safety measures. Pain Medicine. November 8, 2013. DOI: 10.1111/pme.12257.

Sultan P, Halpern S, Murphy C, Carvalho B. Ultra-low compared to higher concentration epidural local anesthetic infusions during labor: A meta-analysis. Can J Anesth. 2013; 60(9):840–854.

Swezey R, Shinn W, Green C, Drover DR, Hammer GB, Schulman SR, Zajicek A, Jett DA, Boss GR. Comparison of a new cobinamide-based method to a standard laboratory method for measuring cyanide in human blood. J Anal Toxicol. 2013; 37(6):382–5.

Wilson HD, Carvalho B, Granot M, Landau R. Evaluation of the temporal stability of conditioned pain modulation in healthy women over four menstrual cycles at the follicular and luteal phases. Pain. 2013. pii: S0304-3959(13)00359-X. doi: 10.1016/j.pain.2013.06.038. [Epub ahead of print]

Abstracts, Posters, Oral Conference Presentations

Abaci P. Practical and academic perspectives on rehabilitation of the pain patient: An expert panel. Presented at ACRM 90th Annual Conference: Progress in Rehabilitation Research; Orlando, FL; November 12–16, 2013.

Abaci P. 100 million ways to spell R-E-L-I-E-F. Presented at the US Pain Foundation conference; October 25, 2013.

Bertaccini EJ, Brosnan R. A GABA receptor model predicts the presence of anesthetic activity in newer propofol analogues. Presented at the ASA Annual Meeting; San Francisco, CA; October 12–17, 2013.

Bertaccini EJ, Trudell JR, Franks NP. A tandem pore potassium channel model demonstrates a possible anesthetic binding site. Presented at the ASA Annual Meeting; San Francisco, CA; October 12–17, 2013.

Butwick A, G Hilton. Thromboelastographic study to assess age-related coagulation profile differences in parturients undergoing elective cesarean delivery. Poster presented at: The Annual Meeting of the ASA; San Francisco; October 12–17, 2013.

Carvahlo B. Refresher course speaker: Strategies to optimize post-cesarean delivery analgesia; panel speaker and moderator: Role of ultrasound guidance and echocardiography in obstetric anesthesia. Presented at ASA Annual Meeting; San Francisco, CA; October 12–17, 2013.

Carvalho B. SOAP Panel lecture: Analgesics in the breast feeding parturient. Presented at the International Anesthesia Research Society (IARS) Clinical and Scientific Conference; San Diego, CA; May 2013.

Carvalho B. Lecture: Update on labor and post-caesarian analgesia; PBLD: Failed regional anesthesic for cesarean section: What do I do now?; Workshop instructor: Truncal blocks; PBLD: Management of post-dural puncture headache. Presented at the American Society of Regional Anesthesia and Pain Medicine (ASRA) 38th Annual Meeting; Boston, MA; May 2013.

Darnall BD. Optimizing patient transformation: Hot trends in coaching & education. Presented at the annual conference of the Western Pain Society. Eugene, OR; September 21, 2013.

Giffard RG. MicroRNAs, the next great hope for the treatment of stroke? Presented at Neuroscience Seminar; SRI International, Menlo Park, CA; September 19, 2013.

Faculty Corner

Giffard RG. Dual routes to protection of neurogenesis from impairment by inflammation: targeting mitochondria. Presented at Symposium on CNS Injury; Society for Neuroscience in Anesthesiology and Critical Care Annual Meeting; San Francisco, CA; October 10, 2013.

Hammer GB. Single lung ventilation in infants and children. Presented at the meeting of the European Society for Pediatric Anesthesia (combined with the US SPA); Geneva, Switzerland; September 5–8, 2013. Dr. Hammer also conducted two workshops on this topic and moderated a poster session on pediatric cardiac anesthesia at this meeting.

Hamner MA, Sun X, Ye Z, Giffard RG, Ransom BR. Overexpression of Hsp72 protected against ischemic CNS white matter injury. Poster presented at: Society for Neuroscience 43rd Annual Meeting; November 9–13, 2013; San Diego, CA.

Hilton G. Evidence for simulator-based training. Presented at the Updates in Regional Anesthesia and Pain Therapy Conference; Yerevan, Armenia; October 2013. Presentation was part of a medical mission with Kybele Inc. to teach OB anesthesia.

Hilton G, Akbar K, Daniels K, Carvalho B. Simulation study assessing knowledge of preeclampsia/eclampsia management in a tertiary referral center. Poster presented at the ASA Annual Meeting; San Francisco, CA; October 12–17, 2013.

Kao, M. SNAPL CAT: An open-source, multi-feature adaptive testing platform for user-configurable computerized adaptive testing (CAT) with PROMIS, NeuroQol, and NIH Toolbox. Presented at the Population Health Sciences Colloquium; Stanford University School of Medicine; Stanford, CA; September 2013.

Krane EB. Local anesthetic pharmacology in the newborn. Panel discussion: Pediatric Regional Anesthesia Concerns. Presented at the Annual Meeting of the ASA; San Francisco, CA; October 12–17, 2013.

Lam N, Fishburn S, Peterson T, Ang R, Mariano ER. A double blind randomized control trial on the use of the STAR maneuver in needle visualization. Presented at the ASA Annual Meeting; San Francisco, CA; October 12–17. 2013.

Lam N, Starr B, Arndt C, Gerstein N, Peterson T, Mariano ER. Ultrasound guidance decreases procedural time compared to nerve stimulation for lateral popliteal-sciatic nerve block in obese patients. Presented at the ASA Annual Meeting; San Francisco, CA; October 12–17. 2013.

Leng JC, Silva RA, Brock-Utne J, Drover D, Leng T. Monitored anesthesia care for vitreoretinal surgeries: Which technique is safest? Poster presented at the ASA Annual Meeting; San Francisco, CA; October 12–17, 2013.

Lipman S. Maternal cardiac arrest. SOAP Obstetric Emergencies Panel. Presented at the ASA Annual Meeting; San Francisco, CA; October 12–17, 2013.

Mackey S. The strain in pain lies mainly in the brain: Lessons learned from neuroimaging. Presented at the4th Annual California Society of Interventional Pain Physicians; Ranchos Palos Verdes, CA; September 2013.

Mackey S. Neuroplasticity in pain: What we know from experience with amputation. Presented at the American Academy of Physical Medicine and Rehabilitation; National Harbor, MD; October 2013.

Mackey S. Neuroimaging of pain. Presented at the American Academy of Physical Medicine and Rehabilitation; National Harbor, MD; October 2013.

Mackey S. Neuroimaging based pain detection: Objective measure of pain or a journey down the rabbit hole? Presented at the Stanford Neuroscience Research Conference; Pajaro Dunes, Watsonville, CA; October 2013.

Faculty Corner

Mackey S. Future perspectives for persistent pain management. Presented at the American College of Rheumatology and Association of Rheumatology Health Professionals; San Diego, CA; October 2013.

Mackey S. Stanford pain registry: An open-source platform for large-scale longitudinal assessment and analytics of clinical data and patient-reported outcomes. Presented at the Population Health Sciences Colloquium, Stanford University School of Medicine; Stanford, CA; September 2013.

Mariano ER. Various panel lectures and workshops at the ASA Annual Meeting: Alternative nerve block techniques (adductor canal block) for TKA; Panel moderator: Lessons learned—ASRA update on preventing infectious complications and evidence basis for ultrasound in regional anesthesia; Workshop: Advanced ultrasound-guided pediatric regional anesthesia; Ultrasound for transversus abdominis plane block in obstetric patients; Everyday peripheral nerve blocks for head and neck surgery. Presented at the ASA Annual Meeting; San Francisco, CA; October 12–17, 2013.

Mariano ER, Howard SK, Funck N, Harrison TK, Walters T, Wagner MJ, Ganaway T, Kim TE. A randomized comparison of long-axis and short-axis imaging for in-plane ultrasound-guided popliteal-sciatic perineural catheter insertion. Presented at the ASA Annual Meeting; San Francisco, CA; October 12–17. 2013.

Memtsoudis SG, Danninger T, Stundner O, Rasul R, Suzuki S, Poeran J, Mariano ER, Mazumdar M. Inpatient falls after total knee arthroplasty—The role of anesthesia type and peripheral nerve blocks. Best of Abstracts: Clinical Science. Presented at the ASA Annual Meeting; San Francisco, CA; October 12–17. 2013.

Mudumbai SC, Barr J, Scott J, Bertaccini E, Nguyen N, Phibbs C, Mariano ER, Cason B, Wagner T. Costs of invasive mechanical ventilation among different age strata. Presented at the ASA Annual Meeting; San Francisco, CA; October 12–17. 2013.

Stary CM, White R, Giffard RG. Isoflurane increases brain lipid binging protein in astrocytes and augments axonal growth in neuron-astrocyte mixed culture. Poster presented at: Society for Neuroscience in Anesthesiology and Critical Care 41st Annual Meeting; October 10–11, 2013; San Francisco, CA.

Stary CM, Xu L, Ouyang YB, Moon JM, Giffard RG. Role for microRNA-200c in response to ischemia. Poster presented at: Society for Neuroscience 43rd Annual Meeting; November 9-13, 2013; San Diego, CA.

Ouyang YB, Xu L, Lu Y, Sun X, Yue S, Xiong X, Giffard RG. miR-29 protects mitochondria and reduces neuronal vulnerability to forebrain ischemia. Poster presented at: Society for Neuroscience 43rd Annual Meeting; November 9-13, 2013; San Diego, CA.

Walters TL, Kou A, Brun C, Harrison TK, Siegel LC, Bertaccini E, Funck N, Shafer A, Howard SK, Mariano ER. Design and implementation of a custom anesthesia outcomes database as a component of the perioperative surgical home. Presented at the ASA Annual Meeting; San Francisco, CA; October 12–17. 2013.

Zheng, P. Trends in benzodiazepine prescription and its opioid co-prescription in the United States. Presented at the Population Health Sciences Colloquium, Stanford University School of Medicine; Stanford, Ca; September 2013.

Faculty Corner

Invited Talks and Guest Professorships

Dr. Jordan Newmark was a visiting professor at UC Davis in the Department of Anesthesia, Division of Pain Medicine, where he gave a talk entitled, "Pain education—historical perspectives, future considerations."

Clinical psychologist Dr. Heather Poupore-King was invited to speak at the 6th Annual Women in Pain Conference in Los Angeles, through the Grace Foundation http://www.forgrace.org/women/in/pain/C269/. She served as the panel moderator for Common Coping Pitfalls. Heather said, "It was a wonderful experience. There were around 125 people in the audience, including practitioners, patients, and family members, and more than 2500 participants logged into the live web feed across the world." The following link contains feedback on the panel that Heather moderated:

http://americannewsreport.com/nationalpainreport/women-pain-conference-draws-worldwide-web-audience-8821663.html

Dr. Audrey Shafer (right) gave a reading of poetry and prose at Litquake, San Francisco's Literary Festival, on October 12, 2013, as part of a panel on Creative Writing and Medicine, also featuring Pireeni Sundaralingam, John Fox, and Marilyn McEntyre.

Awards, Honors, and Appointments

Dr. Jordan Newmark was promoted to Associate Fellowship Director for Pain Medicine.

The Pain Division's Adult Pain Psychology Fellowship, which is directed by Dr. Ravi Prasad, has received seven-year accreditation by the American Psychological Association as a part of the larger Stanford Psychiatry Department's Clinical Psychology Postdoctoral Fellowship Programs.

Dr. Ravi Prasad was appointed to the American Academy of Pain Medicine's 2014 Annual Meeting Program Committee.

Books

Abaci P. *Hágase Cargo de Su Dolor Crónico* (AMMG, Inc.: Los Gatos, CA, 2013). [Spanish-language version of Dr. Peter Abaci's book *Take Charge of Your Chronic Pain*.]

▼ *Dr. Audrey Shafer*

Dr. Larry Saidman and his colleagues Drs. Edmond Eger from UCSF and Rod Westhorpe from the Australian and New Zealand College of Anesthetists in Melbourne, are the editors of *The Wondrous Story of Anesthesia* (Springer: New York, 2014). This anthology describes the development of the specialty of anesthesiology, with an emphasis on the period from 1940 to the present. Drs. Mike Rosenthal and John Brock-Utne also contributed to the book.

Book Chapters

Egas J, Ottestad E, Mackey S, "Peripheral nerve blocks and continuous catheters." In: MS Wallace, PS Staats, eds. *Pain Medicine and Management: Just the Facts*. New York: McGraw-Hill; 2013: 102–6.

Neal JM, Mariano ER, Salinas FV. Upper Extremity Blocks. In: Benzon H, Rathmell J, Wu, Turk, Argoff, Hurley, eds. *Practical Management of Pain*. 5th Ed. (Philadelphia:Elsevier, 2013).

Faculty Corner

Websites

Dr. Peter Abaci launched the website http://painreliefrevolution.com/. Designed to be a resource for pain patients, the website includes a blog and has hosted a live internet chat.

Dr. Larry Chu announced that The Anesthesia Informatics and Media (AIM) Lab, which produces the Stanford Medicine X conference, a new course on patient engagement design for the upcoming winter quarter at the Stanford University School of Medicine. The faculty organizing this colloquium include Larry Chu, executive director of the AIM Lab at Stanford, and Dr. Kyra Bobinet, from the Persuasive Technology Lab at Stanford. The course website address is http://aim.stanford.edu/engage/ available.

Dr. Larry Saidman is the editor-in-chief of a new online journal, *Anesthesia & Analgesia Case Reports*. Faculty and residents are encouraged to submit case reports describing interesting, novel, and important, clinically relevant cases for publication in this new journal. Instructions for authors can be found at http://journals.lww.com/anesthesia-analgesia/layouts/1033/oaks.journals/informationforauthors.aspx. Completed manuscripts can be submitted to http://www.editorialmanager.com/aa/.

Popular Press

November 16, 2013: Dr. Peter Abaci launched a radio talk show with Clear Channel devoted to health and wellness called Health Revolution Radio. It airs on Saturday and Sunday mornings on 960 AM and 910 AM and on iHeart Radio.

July 23, 2013: Dr. Beth Darnall was the featured guest on "Five to Thrive" live radio show discussing chronic pain, stress, and the immune system. In this hour-long show she discussed chronic pain, stress, and the immune system. Audio is also available on iTunes. www.w4cs.com. The program was rebroadcast on August 14.

August 20, 2013: Dr. Beth Darnall was the featured guest on "Five to Thrive" live radio show discussing the risks and consequences of long-term opioid therapy for chronic pain. The program was rebroadcast on September 18.

November 4, 2013: Mackey S. Is the brain hard-wired for pain? Scienceline, November 4, 2013.

Carroll I, Johnson K, Mackey S, Younger J. Make it stop. Stanford Alumni Magazine November 2013.

Mackey S. Multi-disciplinary treatment approaches for neuropathic pain. Monthly Prescribing Reference, September 2013.

Mackey S. Objective neuroimaging-based brain biomarkers of pain needed. Monthly Prescribing Reference, September 2013.

New Books

The Lane Library has a large book collection and department librarian Hillary Farkas is always ordering new books. Before you decide to purchase a new book, Hillary recommends checking with the library first, just as she does.

"It's ALWAYS good to make frequent visits to the lane.stanford.edu website, go to the Biomed Resources (upper left side), click on books, select ‹subject› and click on Anesthesiology. This might sound like more hoops to jump through than ideal, but it actually flows pretty good once you've tried it a few times.You'll find a very generous list of eBooks in the listings," Hillary noted.

Hillary also recommends that you investigate two new books that could be very useful, particularly for residents:

Hemmings Hugh C, Talmage D, Egan MD, eds. *Pharmacology and Physiology for Anesthesia: Foundations and Clinical Applications.* (Philadelphia:Elsevier Saunders, 2013).

Gupta R, Patel D, eds. *Multiple Choice Questions In Regional Anaesthesia* (GmBH: Springer, 2013).

Transitions

Congratulations to pediatric anesthesia fellow Dr. CK Park, who married Dr. Jenny Yoo-Park on October 12, 2013. Dr. Yoo-Park is an orthodontist in Palo Alto in practice with Dr. Lesley Samuels.

New Humans

Clinical research coordinator Alison Pepper, husband Fredrick Schroeder, and six-year-old big sister Oriana were overjoyed to welcome Fredrick Odin Pepper Schroeder to this world on May 18, 2013, at 1:34 AM. He weighed 8 lb, 14 oz and was 21.5 in. long. Odin was born in the comfort of his own home with the help of home-birth midwife Joscelyn Grote. The family is healthy and happy and enjoying the relaxed fun of a second baby!

▶ *Baby Odin and big sister Oriana*