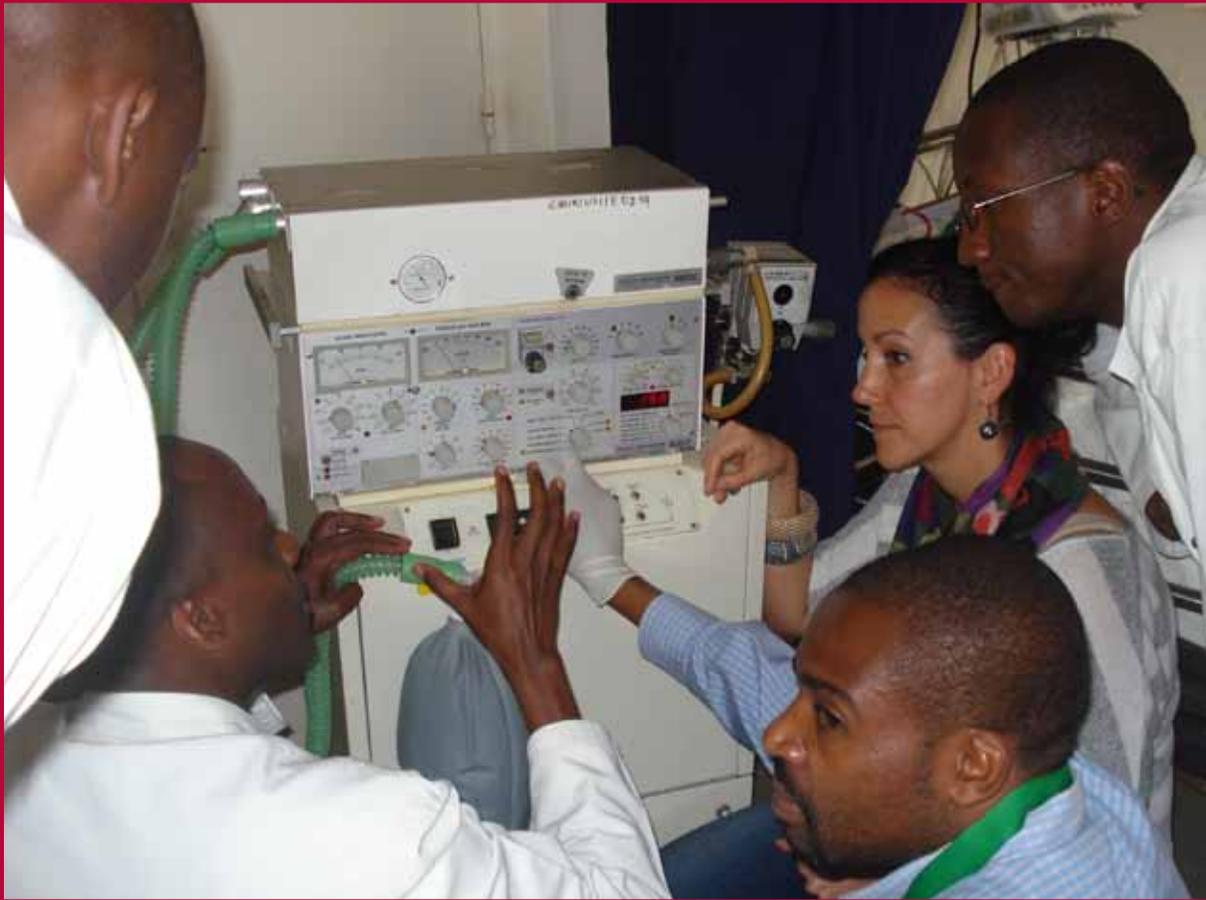


from the Department of Anesthesiology, Perioperative and Pain Medicine

May 2013

The Gas Pipeline



**Stanford Anesthesiologists
Committed to Global Health**
see inside, page 2



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Stanford Anesthesiologists Committed to Global Health

By Maureen Donohue

Stanford anesthesiologists are taking an increasingly proactive role in developing a global health program that will build sustainable, working partnerships with their colleagues in underdeveloped nations with poorly developed medical infrastructures that afford their citizens little or no access to good medical care.

Dr. Ana Crawford is one of the physicians who is leading the way in this important effort. Ana is passionate about improving global health.

Crawford's dedication to this critical cause began in 2005 as an intern, after she completed her first medical mission to Kenya. That trip, in which Ana was one of a team of about seven physicians, offered a general health clinic to the local residents. Word of the clinic spread quickly throughout the region and, over a 4-day period, the staff attended to more than 2000 patients, most of whom had walked for miles to get badly needed medical attention.

At the end of the mission, the majority of the group felt a satisfying sense of accomplishment that they had reached out and provided aid to the throngs of patients.

Ana, however, had a different reaction. She was struck by the fact that she and the team had been ill-equipped to administer the desperately lacking, required medical care, and could do little more than give the patients Tylenol®, hand out toothbrushes and sunglasses, and administer antibiotics to a fortunate few.

"I felt disconnected, like I hadn't really done anything. I knew that after we left, the community would be the same. There would still be no routine vaccinations, no clean water, no childhood or primary education. We saw many patients with AIDS-defining illnesses but could do nothing to help."

These problems are not confined to Africa, but are endemic in underdeveloped countries. Drs. Fred Mihm and Luis Verduzco recently returned from Huehuetenango, Guatemala, where they were helping care for impoverished children with skin cancer associated with the rare genetic disorder xeroderma pigmentosum.

"Dr. Mihm and I were able to provide anesthesia for children with complicated facial tumors so that they could be removed," Luis said. "Some of these cancers were the size of baseballs, limiting the children's quality of life."

As is common with medical missions to undeveloped nations, they had inadequate equipment and were forced to make do with what was available. "The setting was challenging because we had a nonfunctional ventilator and limited monitoring of vital signs," Luis said.

"We had to use the defibrillator machine for our ECG, and a small, portable PectCO₂ machine for our capnometer," Fred said.

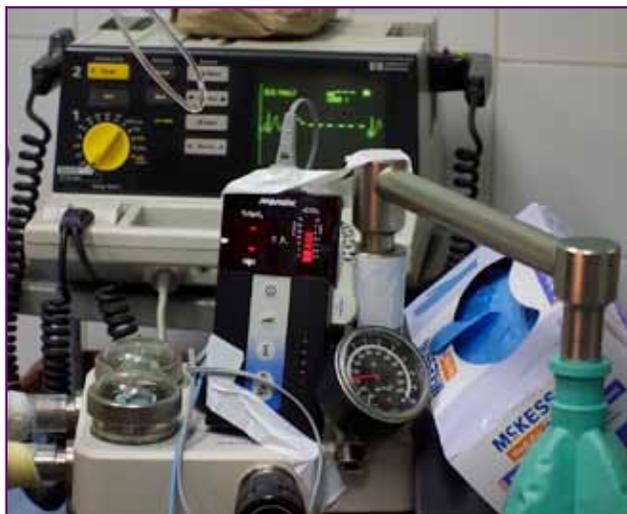
Despite these hurdles, the experience has changed Luis's life. "This was my first medical mission and it was an amazing experience," Luis said. "My wife



▲ Ana Crawford

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► Defibrillator and portable PectCO₂ machine configured as ECG and capnometer during surgery.

and I plan to do global health in the future and I believe this may have been the beginning of such a career.”

Ana, who came to Stanford in 2008 for fellowship training in critical care medicine, could not forget the terrible need she had witnessed in during her first visit to Kenya, nor the helpless and frustrating feelings of inadequacy she felt at the end of the that trip.

A second trip to Africa, to Rwanda, during her first year at Stanford confirmed the impressions she formed during her first mission and underscored for her the critical need to work with local communities to develop a system of providing better anesthesia, perioperative services, pain control, and postoperative care.

“I felt compelled to expand opportunities for anesthesia residents that were more focused on building capacity and sustainability, in addition to [going on] short-term mission trips.”

After finishing her fellowship, Ana decided to pursue a master’s degree in public health at UCSE, with a focus on global health. She completed her studies in 2012, writing a curriculum for global health in anesthesia as her thesis.

The main goals of the curriculum are:

- to provide compassionate care for patients by developing a thorough understanding of their unique social, economic, cultural, and healthcare environment;
- to develop effective healthcare delivery methods within the resources of the patients’ healthcare setting;
- to promote health by educating both patients and their healthcare providers.

The curriculum focuses on two areas. The first is to build academic partnerships with universities in a bottom-up rather than a top-down approach.

“Our role is to help them develop themselves as fully as they can with the resources that they have. The primary goal is to impact medical education and the core competencies that come with being a care provider, and to teach them to advocate for themselves, to create collaborative partnerships that impact the whole healthcare system,” she said.

To do so, it is imperative to pay attention to each region’s assessments of their own requirements. “It’s about their goals and what they need. It’s not about our goals,” Ana said.

Dr. Melanie Gipp noted that this concept was highlighted at the 4th Annual Conference of the Consortium of Universities for Global Health held in March in Washington, D.C., where she presented a poster entitled, “Optimizing Health Systems to Improve Medical Education: A Case Study of Anesthesia Training in Rwanda.”

The keynote speaker was the Honorable Agnes Binagwaho, Rwanda’s Minister of Health.

Hon. Binagwaho stressed that in order to form successful, working global health partnerships, participants from developed countries must abandon their own agendas and tailor their work according to the needs expressed by the host country.

Her talk highlighted the Human Resources for Health (HRH) program, a new global health partnership in Rwanda funded by the Clinton Foundation that operates on this principle. Hon. Binagwaho heads the HRH program, and outside healthcare participants act as consultants, following her directives in setting up training programs for Rwandan healthcare professionals.

Melanie agrees that this is the best means of developing effective, sustainable global health programs. “We can come in and teach, but it’s not a silver bullet,” she said. “We must respond to what they need and want,” she said.

▼ Fred Mihm and Luis Verduzco prepare a patient for surgery, Guatemala.



▼ Steve Hall performs difficult intubation. Rwanda, March 2012.



▼ Waterfall hike in Nyungwe National Forest, Rwanda.





▲ *Teaching Rwandan residents epidural placement skills in a melon.*

The second focus of Ana's curriculum is to provide structured training for anesthesiology residents who wish to participate in global health. The training includes lectures on global health objectives, the multidisciplinary nature of global health, and the multifactorial healthcare discrepancies in underdeveloped nations. Participating residents will be exposed to global health perspectives and skill sets that encompass cultural, economic, and social sensitivity. This segment of the training is based on six core competences as determined by ACGME.

Using Ana's curriculum as a template, Stanford's Department of Anesthesiology formalized a Division of Global Health that includes a year-long post-residency fellowship for one fellow per year. Applications are currently being accepted for this program. In addition, the department has funding for two residents to go abroad on a month-long elective global health rotation.

Residents who travel to Rwanda or Zimbabwe with Crawford have to apply and write a personal statement. Residents who wish to pursue service-based trips under the supervision of other faculty members will also have to fulfill the goals and objectives set forth by the new global health division.

Through Ana's efforts and the work of other colleagues who share her goals, the program is beginning to take shape. "We've made much progress in the last year," she said.

In 2012 Ana and Melanie Gipp traveled to Rwanda where they taught eight anesthesia residents at the National University of Rwanda in Kigali.

This year, Ana returned to Rwanda with Dr. Morgan Dooley, where they worked with the same people Ana and Melanie had met in 2012. "It was really rewarding to be able to build relationships with the local faculty and residents," Ana said.

After Rwanda, Morgan headed to Kenya with Dr. Jeremy Collins for a service-based mission in Gitwe. Stanford has had an ongoing presence in Gitwe for many years thanks to Dr. Drew Patterson, who has made repeated trips to the area and has developed well-established relationships with the local community.

In December 2012 and January of this year, Drew traveled to Gitwe with Stanford IT specialist Joe Benfield, and medical student Morgan Theis, where they met with faculty from the new medical school to develop online supplements for their medical school curriculum.

Ana traveled on to Zimbabwe with Dr. Vanessa Moll, at the invitation of the chairman of the anesthesia department at the University of Zimbabwe in Harare. This trip was funded by an NIH Medical Education Partnership Initiative (MEPI) grant that was awarded to Stanford. MEPI grants match academic centers in developed nations with underdeveloped countries, and Stanford has been paired with Zimbabwe.

Ana and Vanessa were in charge of the anesthesia arm of the project. They performed an initial needs assessment and are now in the process of summarizing their findings to determine how future trips should be structured.

Ana's ultimate goal in designing the global health program is to develop sustainable, reliable means of meeting patient needs, so that one day, no one will have to experience the helplessness and inadequacy that Ana felt after her first trip to Kenya in 2005.

"I learned that if you're going to be involved [in patient care] in any capacity, you must be a patient advocate, here or overseas," Ana said. "A global patient advocate."

This is, after all, the most important mission for any healthcare provider. 📖



▲ *Anesthesia team preparing patient for surgery in Rwanda. From L-R: Drew Patterson, Myer Rosenthal, Nick Lee, Steve Hall.*

From the Chairman

By Ron Pearl, MD, PhD

Richard K. And Ericka N. Richards Professor

The cost of healthcare in the United States is unsustainable, the quality of healthcare is poor, and many people are uninsured, so change is coming to medicine and to anesthesia. We have been hearing this mantra for many years, but so far there have been few significant changes. However, change is about to occur. The Patient Protection and Affordable Care Act (PPACA, or Obamacare) will impact medicine in a significant way starting this year, and already there is movement away from fee-for-service and toward more comprehensive payment systems, mergers, and consolidations of individual hospitals into large alliances, and toward similar mergers and consolidations of anesthesia groups. In the face of increasingly rapid change, it is critical that our department develop a thoughtful, strategic plan that is part of a broad departmental consensus. As a result, in June the department will have its first comprehensive retreat in almost two decades.

The retreat will focus on four related topics that will be critical to the success of the department. Each topic has been studied by a departmental workgroup with broad representation. The first workgroup, chaired by Dr. Sean Mackey, is faculty development and mentorship. Faculty are the basis of the department. We are extraordinarily fortunate to have superb faculty who are outstanding clinicians, educators, researchers, innovators, and administrators. As a result, our department is a national leader in each of the departmental missions. Before joining the department, a typical faculty member has had an average of more than 10 years of medical training and related experience after completing college. However, transition to becoming a successful faculty member is challenging, particularly given the multiple roles that are required. As a result, faculty development, in terms of acquisition of additional skills, and faculty mentorship, in terms of career development, are important factors in continued success. These issues have been widely discussed on a national level, but they require significant resources, and there is no magic template. I anticipate the workgroup on faculty development and mentorship will develop a general approach that can be applied to our wide range of faculty, while allowing the necessary individualization to ensure success.

A second workgroup, chaired by Dr. Aileen Adriano, will focus on one portion of the faculty, namely the Clinician Educator (CE) Line. The CE Line was developed a decade ago in recognition of the important role of faculty whose major missions are clinical care and education. The size of the CE Line has grown rapidly, and it now constitutes a majority of the faculty. During this past decade, there has been expansion of the benefits available to faculty in the CE Line, and recently our new dean, Dr. Lloyd Minor, negotiated a broad waiver that allows faculty in the CE Line to be the principal investigators on all relevant clinical trials. However, many CE faculty throughout the medical school are concerned that their status is not equivalent to other faculty and that they do not have the same career options and support. The CE faculty workgroup will analyze these concerns and provide suggestions for improving the careers of this critical component of the department, an issue that will be increasingly important with the expansion of clinical volume that will result from the opening of the new adult and pediatric hospital towers over the next five years.

A third workgroup, chaired by Dr. Alex Macario, will focus on education of residents, fellows, and students. Educating the next generation of anesthesiologists is a core mission for the department, and we frequently state that we match the best class of residents in the country and then provide them with the best training. Our graduates go on to become leaders in anesthesiology, both in academics and in practice. However, several factors are in play that are rapidly changing the field of education, including the exponential expansion



of the role of information technology, the different learning styles of the current generation of students, increasing emphasis on education vs. service, institution of new testing and assessment standards, and application of education and curricular theory to what once was an apprenticeship approach. Our education committee has consistently been proactive and our department has been at the forefront in educational innovation, including our extensive simulation activities and the programs from the AIM laboratory. The education workgroup will have the opportunity to take a broad view of all aspects of education in the department and to set an agenda for the future.

The fourth workgroup, on the future of anesthesia, chaired by Drs. Drew Patterson and Ed Mariano, will examine the changes that will occur in medicine and anesthesiology over the next decade and the changes we as a department need to make to respond to them. Given the changes in reimbursement that will require that anesthesiologists expand their role beyond traditional operating room anesthesia, this group will likely focus on our continuing expansion into the full spectrum of perioperative medicine, as discussed in my last column, on why we have renamed our department as the Department of Anesthesiology, Perioperative and Pain Medicine.

The four workgroups will all be dealing with different aspects of the same problem, namely the continuing transformation of the role of the anesthesiologist and how we can best develop anesthesiology careers for our students, residents, and faculty. I look forward to the insights of the 4 workgroups and the 75 faculty and residents who will attend the retreat.

Although the major reason for the retreat is strategic planning, there is an important second purpose. Over time, our department has not only grown in size but also has become increasingly subspecialized and fragmented, so that individual faculty often interact only with a small portion of the entire department. The retreat will be an opportunity for each attendee to connect with a broad representation of the department, enhancing the sense of belonging to our departmental family. I look forward to the retreat weekend and to the chance to enjoy meeting with a large portion of the department as we plan to maintain the leadership role of Stanford anesthesiology for decades to come.

Finally, I want to take this opportunity to congratulate our graduating residents and fellows and to welcome our new class to Stanford. 🍷

From the Deputy Chief

The KISS Principle and Anesthesia

By Rick Novak, MD, Deputy Chief

Associated Anesthesiologists Medical Group

Clinical Cases

You're scheduled to anesthetize a 70-year-old man for a carotid endarterectomy, a 50-year-old man for an arthroscopic rotator cuff repair, and a 30-year-old woman for an Achilles tendon repair. What anesthetics would you plan?

Discussion

In 1960, U.S. Navy aircraft engineer Kelly Johnson coined the KISS principle, an acronym for "Keep It Simple, Stupid." The KISS principle supports that most systems work best if they are kept simple rather than made complex. Simplicity should be a key goal in design, and unnecessary complexity should be avoided. The KISS principle likely found its origins in similar concepts such as Occam's razor, Leonardo da Vinci's "Simplicity is the ultimate sophistication," and architect Mies Van Der Rohe's "Less is more."

Let's look at the three cases listed above. For the carotid surgery, you choose an anesthetic regimen based on dual infusions of propofol and remifentanyl, aiming for a rapid wake-up at the conclusion of surgery. For the arthroscopic rotator cuff repair, you fire up the ultrasound machine and insert an interscalene catheter preoperatively. After you've inserted the catheter, you induce general anesthesia with propofol and maintain general anesthesia with sevoflurane. For the Achilles repair, you perform a popliteal block preoperatively. After you've performed the block, you induce general anesthesia with propofol, insert an endotracheal tube, turn the patient prone, and maintain general anesthesia with sevoflurane and nitrous oxide.

All three cases proceed without complication.

Ten miles away, an anesthesiologist in private practice is scheduled to do the same three cases. For each of the three

cases she chooses the same anesthetic regimen: Induction with propofol, insertion of an airway tube (an endotracheal tube for the carotid patient, and a laryngeal mask airway for the shoulder patient and the ACL patient, and an endotracheal tube for the prone Achilles repair), followed by sevoflurane and nitrous oxide for maintenance anesthesia and a narcotic such as fentanyl titrated in as needed for postoperative analgesia. The carotid patient is monitored with an arterial line, and vasoactive drugs are used as necessary to control hemodynamics.

"Wait a minute!" you say. "Elegant anesthesia requires advanced techniques for different surgeries. Why would a private practitioner do all three cases with nearly identical choices of drug regimen? Why would a private practitioner fail to tailor their anesthetic plan to the surgical specialty? Total intravenous anesthesia and ultrasound-guided regional anesthesia are important arrows in the quiver of a 21st-century anesthesiologist, aren't they?"

In my first week in private practice, just months after graduating from the Stanford Anesthesia Residency Program, the anesthesia chairman at my new hospital emphasized relying on the KISS principle in anesthesia practice. He stressed that the objective of clinical anesthesia wasn't to make cases interesting and challenging, but to have predictable and complication-free outcomes. Exposing a patient to extra equipment (two syringe pumps), or two anesthetics (regional plus general) instead of general anesthesia alone, adds layers of complexity, and defies the KISS principle.

There are no data indicating that using two syringe pumps and total intravenous anesthesia will produce a better outcome



than turning on a sevoflurane vaporizer. There are no data demonstrating that combining a regional anesthetic with a general anesthetic for shoulder arthroscopy or Achilles tendon surgery will improve long-term outcome.

The KISS principle opines that most systems work best if they are kept simple rather than made complex, and doing two anesthetics instead of one adds complexity. I've learned that an anesthesiologist should choose the simplest technique that works for all three parties: the surgeon, the patient, and the anesthesiologist. The hierarchy from most simple to complex might look something like this: (1) local anesthesia alone, (2) local plus conscious sedation, (3) a regional block plus conscious sedation, (4) general anesthesia by mask, (5) general anesthesia with a laryngeal mask airway, (6) general anesthesia with an endotracheal tube, or (7) general anesthesia plus regional anesthesia combined. The combination of drugs used should be as minimal and simple as possible.

If all three parties (the surgeon, the patient, and the anesthesiologist) are okay with the patient being awake for a particular surgery, then the simplest of the first three options can be selected. If any one or all of the three parties wants the patient unconscious, then the simplest option of (4)–(7) can be selected.

I'm not an opponent of regional anesthesia. Ultrasound-guided regional anesthesia is a significant advance in our specialty for appropriate cases, and substituting regional anesthesia for a general anesthetic is a reasonable alternative. Compared with general anesthesia, peripheral nerve blocks for rotator cuff surgery have been associated with shorter discharge times, reduced need for narcotics, enhanced patient satisfaction, and fewer side effects.¹ On the other hand, meta-analysis has demonstrated no long-term difference in outcome between regional and general anesthesia for ambulatory surgery.² Why perform combined regional anesthesia plus general anesthesia for minor surgeries? For minor surgeries are we doing regional blocks just to showcase our new ultrasound skills? If there is an ultrasound machine in

the hallway and an ambulatory orthopedic patient on the schedule, these two facts alone are not an indication for a regional block. Patients receive an extra bill for the placement of an ultrasound-guided block, and economics alone should never be a motivation to place a nerve block.

Performing both regional anesthesia and general anesthesia, or two anesthetics, on one patient makes sense in selected cases. In a painful major orthopedic surgery such as a total knee or total hip replacement, a regional block can improve patient comfort and outcome. This month's issue of *Anesthesiology* reports that, compared with general anesthesia, neuroaxial anesthesia for total knee or total hip replacement is associated with an 80% lower 30-day mortality and a 30–80% lower risk of major complications.³

However, many outpatient orthopedic surgeries performed under straight general anesthesia require only modest oral analgesics afterward. I had general anesthesia for a shoulder arthroscopy and subacromial decompression last month, and required no narcotic analgesics post-op. If I'd had an interscalene block, the anesthesiologist could have attributed my comfort level to the placement of the block. No block was necessary.

Achilles repairs don't require a combined regional–general anesthetic. Achilles repairs simply don't hurt very much. One surgeon in our practice does his Achilles repairs under local anesthesia with the patient awake, and the cases go very smoothly. Other surgeons in our practice insist that a popliteal block be placed prior to general anesthesia for Achilles repairs, a dubious decision because (a) it defies the KISS Principle, and (b) the surgeon has no expertise in dictating anesthetic practice.

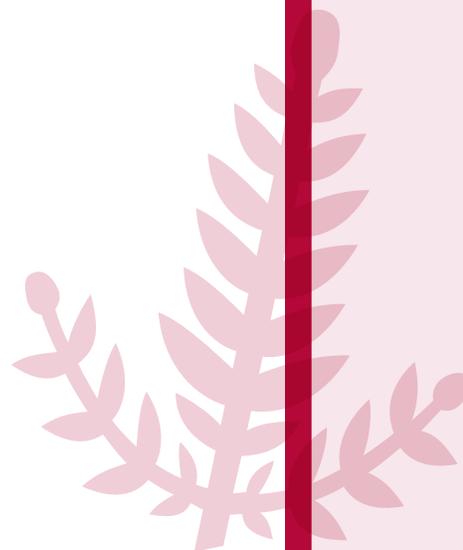
Every peripheral nerve block carries a small risk. Although serious complications are unusual, risks include falling; bleeding; local tissue injury, pneumothorax; nerve injury resulting in persistent pain, numbness, weakness or paralysis of the affected limb; or local anesthetic toxicity. Systemic local anesthetic toxicity occurs in 7.5–20 per 10,000 peripheral nerve blocks.⁴

Use the simplest anesthetic that works. Assess whether combined regional–general anesthetics are necessary or wise. I realize that complex anesthetic regimens are routine aspects of a solid training program, because residents need to leave their training program with a mastery of multiple skills. But once you’re in private practice, my advice is to take heed of the KISS principle. 📧

Note: Dr. Novak’s archives of past Deputy Chief Columns can be found at www.theanesthesiaconsultant.com.

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From the Residency Program Director

Spotlight on Dr. Tanaka: Reflections on Teaching and Academic Medicine

By Alex Macario, MD, MBA

Dr. Pedro Tanaka, Clinical Associate Professor in the Department of Anesthesiology, Perioperative and Pain Medicine, recently began a master's degree program in academic medicine at the USC's Keck School of Medicine, with the ultimate goal of obtaining a PhD in education to help build and strengthen the education research program in the department. This is a natural transition for Pedro, who has actively pursued his interest in academic medicine and resident education since he left his native Brazil and began his career at Stanford in 2007.

Any of you who know Pedro know that he is a great friend, completely dedicated to the housestaff and to helping everyone around him. Every now and then in life you meet and get to work with such an exceptional individual that you make a mental note of how lucky you are.

Pedro currently chairs the education committee, directs the anesthesia intern program, and co-directs the Faculty Teaching Scholars Program.

Since many people are curious to know what Pedro has learned from the USC master's in academic medicine, I asked him to reflect on the lessons he has learned. His insights are valuable and instructive, and worth sharing with you:

“I've learned that teaching is a collaborative endeavor. Being a good teacher also means being a good student. To me, nurturing respect is essential in any educational process. I have found that role modeling has a strong impact on my ability to learn, and that it has a contagious effect on students. It is essential to define clear objectives. I have learned that it requires tremendous thought and a lot of research to establish valid objectives. And different domains require different teaching techniques. For example, when I am working with third-year residents I try to step aside and let them discuss the previous case, while I observe their performance.

The following excerpt from *Scholarship Reconsidered: Priorities of the Professoriate* by Ernest Boyer¹ illustrates this point:

After all, it is futile to talk about improving the quality of teaching if, in the end, faculty are not given recognition for the time they spend with students. It seems clear that while research [sic], we need a renewed commitment to service, too. It is time to recognize the full range of faculty talent and the great diversity of functions higher education must perform. For us to reaffirm that education—that is, teaching in all its forms—is the primary task of higher



▲ Pedro Tanaka

Residents of the Month as Elected by Faculty—Congratulations!

February: **Morgan Dooley**

March: **Megan Olejniczak**

2013–14 Resident Teaching Scholar

I am delighted to let you know that the Education Committee elected **Tammy Wang** to be the next Stanford Anesthesia Senior Resident Teaching Scholar for the 2013-14 academic year. This is a resident leadership position to promote the education mission in the department, with main goal of enhancing the educational experience for Stanford anesthesia residents and medical students.

Please join me in congratulating Tammy, and in thanking **Ankeet Udani** who did a fabulous job this year in that position.

education. Higher education once viewed as a privilege, was now considered as a right. Almost all colleges pay lip service to the trilogy of teaching, research and service, but when it comes to making judgments about professional performance, the three rarely are assigned equal merit. Specifically, we conclude that the work of the professoriate might be thought of as having four separate, yet overlapping, functions. These are: the scholarship of discovery; the scholarship of integration; the scholarship of application; and the scholarship of teaching. The discovery of new knowledge is absolutely crucial. The scholarship of integration gives meaning to isolated facts, putting them in perspective. To be considered scholarship, service activities must be tied directly to one's special field of knowledge and relate to, and flow directly out of, this professional activity. Such service is serious, demanding work, requiring the rigor and the accountability, traditionally associated with research activities.¹

Each of the scholarships described by Boyer are equitable and important. To be considered an exceptional teacher, a person must excel in all of them. But I have learned that a good teacher can accomplish parts of each scholarship, while simultaneously devoting time to departmental needs.

As a clinical associate professor of anesthesia, I juggle many roles. I must:

- devote sufficient time to the educational program to fulfill my supervisory and teaching responsibilities and demonstrate a strong interest in resident education;
- administer and maintain an educational environment conducive to educating residents in each of the ACGME competency areas;
- participate in faculty development programs designed to enhance the effectiveness of their teaching and to promote scholarly activity;
- establish and maintain an environment of inquiry and scholarship with an active research component;
- encourage and support residents in pursuing scholarly activities;
- evaluate the competency domains;
- work closely with and support the program director;
- assist in developing and implementing evaluation systems; and
- teach and advise residents.

My experiences have enabled me to better understand the myriad issues and challenges facing academic medicine today, which include:

- coping with increasing demands for clinical productivity;
- developing and maintaining financial sources for education;
- dealing with faculty shortages;
- maintaining the quality of and access to teaching resources;
- learning to harness the science of learning;
- providing a multi-disciplinary approach to both science and education;
- maintaining accountability.

My involvement in this field shows me the potential opportunities for future innovations. There is new world to be explored in education.” 🍷

Reference

1. Boyer E. *Scholarship Reconsidered: Priorities of the Professoriate*. San Francisco: Jossey-Bass; 1997.

2013–14 Faculty Teaching Scholars

We would like to congratulate the 2013–14 Faculty Teaching Scholars:

Kimberly Valenta/

Jody Leng—a formalized ophthalmology curriculum and resident rotation;

Jordan Newmark/Kingsuk Ganguly—a pain simulation clinical scenario for senior residents and pain fellows;

Tessa Walters/Matthew Wagaman—new VA resident curriculum: “Peri-operative surgical home model”;

Lindsey Vokach-Brodsky/Ryan Mountjoy—regional anesthesia skills practice during regional resident orientation;

Erin Hennessey/Sara Nikravan—ICU resident rotation: development of weekly lecture series “Flipping the Classroom” for ICU residents;

Karl Zheng/Marie McHenry—a multi-year curriculum for resident career development.

Thank you and we look forward to the excellent additions to the residency educational mission.

ImPRINT

An Innovative Course for Local Anesthesia Interns

By Maureen Donohue



▲ ImPRINT participants at Wellness Module.

Local interns are now able to augment their anesthesia training at Stanford a year before beginning residency, thanks to the ImPRINT (Intern Preparedness using Innovations in Teaching) program.

ImPRINT is an innovative educational course developed by Drs. Kyle Harrison, Larry Chu, Tammy Wang, and Ankeet Udani, and is based on the Successful Transition to Anesthesia Residency Training (START) online program. Ankeet was a member of the first START class, and the monthly online modules he completed during his internship as part of START inspired him to help develop the ImPRINT program. ImPRINT is made up of 12 monthly categorical sessions conducted for local interns over the year just prior to the start of anesthesia residency. Each participant must live within driving distance of the campus and have been accepted into the residency program in anesthesia at Stanford.

Most sessions are structured using the “flipped classroom” model. Before each class, participants watch

an 18-minute podcast covering the topic to be discussed. The actual sessions start with lunch served at the Goodman Immersive Learning Center. Lunch is followed by a 40-minute group discussion facilitated by a faculty expert. For example, Dr. Emily Ratner moderates the “physician wellness” module, Dr. David Soran is in charge of the “acute MI on the wards” module, and Dr. Erin Hennessey leads the “COPD exacerbation” module. Other topics covered include pediatric emergencies, bleeding in pregnancy, procedural practice, CVAs, and other scenarios.

After the discussion, half of the class spends 90 minutes in high-fidelity simulation while the other half does task training. At the end of the 90-minute session, they switch and complete the opposite 90-minute session. A final 20-minute group debriefing summarizes the day’s events.

The interns work in groups under the supervision of a senior resident to practice and deconstruct relevant clinical scenarios. “Experts have shown that [interns] relate differently to residents than to faculty,” Ankeet said. “For our senior residents, this experience also enriches their pedagogical skills. We have a lot of ‘real world’ resident knowledge that is not written in textbooks and is well-received by our interns.”

The goals of the course are to: (1) prepare interns for common clinical scenarios encountered during internship; (2) encourage teamwork, camaraderie, and wellbeing; (3) develop a nurturing relationship with our anesthesia department; (4) use innovations in teaching; and (5) have FUN!

Intern feedback is used to adapt teaching methods to best fit the learning styles of the students. “We keep tweaking the program as we go along,” Ankeet said.

▼ A view from the control room during an ImPRINT scenario.



So far, the program has received extremely favorable response. Louise Wen, a categorical intern at Stanford, provided the following reflections on her experience as an ImPRINT participant:

“ImPRINT is definitely one of the highlights of my intern experience. Every month I look forward to spending an enjoyable and fun afternoon with my fellow anesthesia residents who are doing their internship year in the Bay Area. These meetings create the space for us to relax over lunch and build our personal and professional relationships with each other.

The format of our learning uniquely ‘flips the classroom.’ We watch an 18-minute online lecture at our own convenience so that when we convene, we jump right into interactive and experiential learning activities that are focused on developing skills to make us better interns. So far, these exercises have included crisis scenarios in the high-fidelity simulator, faculty-led small group discussions on topics such as the physiology of CPR, and guided experiences in relaxation and mindfulness.

Our most recent ImPRINT session on resident wellness was an unexpected treat. Dr. Ratner guided us through calming breathing exercises and a short meditation. We then enjoyed a walk to the Main Oval on the main undergraduate campus where we sat on the expansive sea of green grass, surrounded by majestic palm trees, radiant sunlight, and a clear sky. We continued to practice exercises in mindful communication to learn how to process stressful experiences from our intern year. By the end of the session, I felt surprisingly energetic and rejuvenated, very much appreciating our department’s investment in resident wellness.”

The first ImPRINT class is currently underway and is scheduled to finish in June. 📅

► *Surgery Education Chief Resident Owen Palmer instructs interns on chest tube placement.*



► *Interns manage a patient suffering from an acute post-operative hemorrhage.*



Staff News

Research Division Hires New Clinical Research Manager

▼ Katherine
Connors



The Research Division recently hired Katherine Connors, MPH, to fill the newly created position of clinical research manager.

A phi beta kappa graduate of Virginia Tech and the University of Michigan School of Public Health, Katherine has worked at Stanford since 2010, first as a clinical research coordinator in the Department of Dermatology, and later as a senior clinical research coordinator in the Department of Pediatrics where she worked with Dr. Gregory Enns on clinical studies of children with genetic disorders. She also worked with Spectrum Child Health program director Mary Chen.

Katherine began working in the Department of Anesthesia, Perioperative and Pain Medicine on March 18, providing support for and overseeing the work of the approximately 20 clinical research coordinators who are not registered nurses. They range in experience from casual employees to very experienced, full-time staff.

Katherine would like to structure the group so that every research coordinator has a back-up coordinator to ensure that studies are conducted smoothly, without interruption. She also plans to hold regular group meetings to build community and troubleshoot any issues related to ongoing studies. “I see this as my role,” Katherine said. “Anyone can raise an issue, including the PIs or research coordinators.”

She is also instituting a system of friendly, internal self-audits, during which the research coordinators will review, in pairs, the FDA’s audit checklist, so that they are always prepared for actual FDA audits, which are not announced ahead of time. In addition, Katherine intends to host speakers and conduct training sessions to ensure that anyone involved in a study understands and meets the government’s requirements for the conduct of clinical trials.

“A lot of my ideas for providing coordinator and PI support come from the Spectrum Child Health model I learned in the Department of Pediatrics,” she said.

As a newcomer, Katherine is still in the process of meeting people and piecing together what everyone does. “[The anesthesia department] is diffuse. Some faculty have research coordinators and some don’t. I can help identify or hire new coordinators when there is a need,” she said. “I have to manage others’ expectations—I want to treat everyone consistently, but some groups may need my help more than others,” she added. “It’s challenging and exciting.”

Before she came to Stanford, the Virginia native was enrolled in a PhD program in medical entomology at Cornell University. After a year, Katherine moved to the Bay Area with her partner Ben, where he co-founded an IT start-up company. With her background in health and research, Katherine found Stanford School of Medicine to be a rewarding transition. “Being a study coordinator made me really appreciate the patient interaction combined with exciting, interdisciplinary research,” she said. “Now as a manager, I look forward to supporting clinical research on a broader scale.”

As a vegan and yoga enthusiast, Katherine fits in well with the Bay Area lifestyle. “I love the weather. I love to hike, bike, and camp,” she said. 🍷

Katherine can be contacted at kconnors@stanford.edu.

Staff News

Introducing Beth Darnall: Pain Division's Newest Pain Psychologist

In October 2012, the Pain Management Division welcomed pain psychologist Dr. Beth Darnall to its world-class team of pain management specialists.

Beth comes to Stanford from Oregon Health & Science University (OHSU), where she was an associate professor in the Department of Anesthesiology and Perioperative Medicine at the OHSU. She treated patients at the OHSU Comprehensive Pain Center and had several organizational leadership roles. In 2012 she served as the President of the Pain Society of Oregon—one of only two multidisciplinary state pain organizations in the U.S.

Beth received her doctorate in psychology at the University of Colorado at Boulder and did her clinical residency at the Southern Arizona Veterans Affairs Health Care System (Tucson VA Hospital). She received post-doctoral clinical and research training at The Johns Hopkins University School of Medicine in the Department of Physical Medicine and Rehabilitation, with a joint appointment in the Bloomberg School of Public Health on a T-32 research fellowship. Clinically, she provided psychological services to patients with catastrophic burns at the Johns Hopkins Bayview Regional Burn Unit, and to patients with spinal cord injuries or amputations at the Johns Hopkins Good Samaritan Hospital Comprehensive Inpatient Rehabilitation Unit. Her research focused on chronic pain and depression in people with limb loss, and on developing a limb loss self-management program.

For almost 15 years Beth's patient care has focused on helping people with chronic pain understand the mind–body connection and how it influences pain. Her goal is to arm patients with scientifically informed and proven methods to help them decrease the physical, mental, and emotional stressors that accompany chronic pain. She teaches patients and providers that how a person thinks and feels has a profound influence on their sensory experience of pain and subsequent course of care. Her goal is to help people learn to better manage their pain through learned skills and improved choices, thus reducing reliance on medication and medical providers. The net result may include reduced health care costs, fewer prescriptions and associated side effects, and improved quality of life. For many people, pain intensity may not change, but quality of life and function improve with behavioral pain care. Patients develop self-efficacy to better manage pain and life stressors, and this helps them feel less distress and more in control. She teaches these skills in clinic, at conferences, and in online education venues. She also produced a low-cost audio CD that patients can purchase to help them manage their pain (*Pain Management Skills*®v2010).

Beth finds her work extremely rewarding. “It's a tremendous honor to work with people who are suffering, and to help them improve their lives,” Beth said.

Her research has involved observational studies, clinical experiments, and treatment-outcome work with a main focus on women with chronic pain. Prior work has focused on the medical and psychological risks and consequences of long-term opioid use in women, predictors for receipt of opioid prescription in women, and the relationship between



▲ Beth Darnall

Staff News

pro-inflammatory cytokine responses and pain catastrophizing. In the latter study, which is currently in analysis, she and colleagues are investigating cytokine responses following a 10-minute pain catastrophizing induction experiment in women with chronic pain. They aim to characterize women with chronic pain who appear to be stress-inflammation “responders.” They also aim to describe the duration of pro-inflammatory cytokine elevation in responders. Now, as a new PI in the Pain Division’s Systems Neuroscience and Pain Laboratory, she plans further experiments using the pain catastrophizing induction model she developed with a goal of characterizing how the induction modulates sensory perception in women with chronic pain. The American Pain Society, the Medical Research Foundation of Oregon, ZRT Laboratories, the Office for Research on Women’s Health, and other benefactors have funded this research.

Beth’s other research passion is developing and disseminating information on low- or no-cost, widely accessible treatment methods for chronic pain that would empower large numbers of patients throughout the world to help themselves live their best possible lives. In this regard other prior empirical work has included mirror therapy for phantom pain. She and colleagues conducted a study on self-delivered home-based mirror therapy, and their findings suggested that mirror therapy is a low-cost, accessible pain management technique that can be learned with a few simple instructions. In 2010 she brought to market the commercial DVD *Do It Yourself Mirror Therapy*[®] and received funding to present her work at the Egyptian Pain Society meeting in Cairo. In 2011 the International Association for the Study of Pain funded Beth and colleagues to deliver mirror therapy certification workshops to medical and trauma workers in three regions of Vietnam, a country with the highest rate of amputation in the world and severely limited pain treatment resources.

Finally, in keeping with her commitment to patient education, Beth has written an educational self-help book for people living with chronic pain. The book provides education about opioids, describes why it is in the patient’s best interest to minimize the use of opioids, and then empowers them to do just that by teaching readers specific skills and techniques. There is a section on tapering opioid use for readers who wish to decrease or stop use. Acknowledging that many readers many wish to continue opioid use because their pain treatment is optimized with this medication, the book contains a section on safe use that includes medical symptoms to watch for and how to minimize pitfalls and problems. The book is being published by Bull Publishing and will be available in early 2014.

Beth is a Section Editor for *Pain Medicine*, serves on the boards of directors for multiple pain organizations and foundations, and is the 2013 Chair of the American Pain Society Ethics SIG. Also, within the American Pain Society she serves on the Scientific Conference Program Committee, the Clinical Guidelines Committee, and the Leadership Development Committee, among others. She is frequently interviewed by the press and has given TV and radio interviews on the topics of pain psychology in women and on her empirical work.

Beth said she is thrilled to be new faculty in Dr. Sean Mackey’s Pain Division because it is leading the nation in innovative pain care and in discovering the mechanisms that govern chronic pain. “I particularly enjoy working in an environment where innovation is encouraged, supported, and quickly implemented,” she said. “The Pain Division offers all of that, combined with amazingly smart and dynamic colleagues.”

She is also very happy to exchange the rainy weather of Oregon for the sunshine of the Peninsula. 🍷

Division News

Pediatric Anesthesia

Congratulations to Dr. Chandra Ramamoorthy, professor of anesthesiology, director of pediatric cardiac anesthesia, who was honored by the *Silicon Valley Business Journal* in April, as 1 of the 100 most influential women in the Bay Area.

Among her other talents, Chandra is a marathon runner. She recently ran in the back-to-back Boston and Big Sur Marathons, and provided the following reflections on her experience as a marathon runner in this year's Boston Marathon:

“For marathoners, the Boston marathon is the Holy Grail. First held in 1897, it is the oldest marathon in the United States. Women were officially permitted by the Amateur Athletic Union to run in the fall of 1971. Until then they hid in bushes at the start line or fudged the gender issue! Please click the link to read its history

<http://www.baa.org/races/boston-marathon/boston-marathon-history.aspx>.

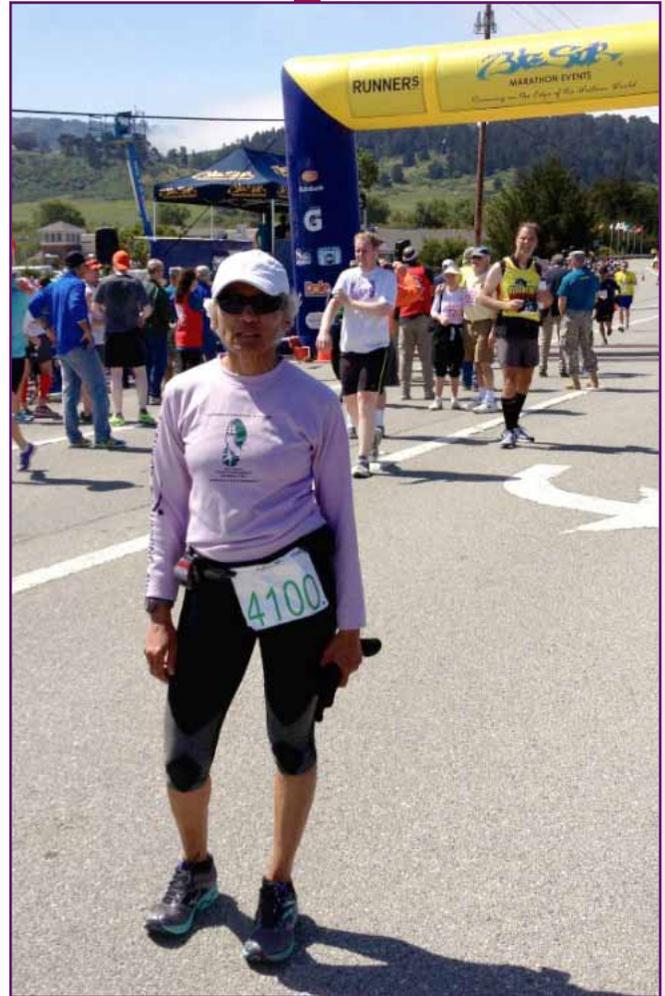
I first qualified for the Boston marathon after running in the Sacramento marathon in December 2010. Growing up in India as a child, I remember hearing the hushed “he/she is going abroad,” whispered with the wish that one could touch that individual and have a little shine rub off on you. Being “Boston-qualified” put me in that category, into a “league of runners”; among our competitive running group, Boston-qualified is a badge of honor, and women who have run it five or six times are in a class of their own.

Since the 2011 Boston Marathon was already closed for new entrants, I had to cool my heels until April 2012. Starting in January 2012, I began the scheduled training. Being a pediatric cardiac anesthesiologist

is like running a marathon every day: long hours on one's feet, focused on the task of caring for children with complex heart disease, all with enough emotional stoicism to withstand the *de rigueur* drama in the heart room. I found that marathon training was not very different. The weekends of training, even if I was up all night, and running in rain or hail, were all easy. I could only think of running, work, and family. I had no social life, no late night movies, and no red wine, but these were not hardships.

So it was very discouraging when I went to Boston in April 2012 for the race, developed a respiratory infection, and could hardly stand, let alone run. Providence came to my rescue. The temperatures were in the low 80s, and the organizers offered many of us a way out. If we didn't cross the start line we could use our qualifying time for the race in 2013. “Woo hoo!” I thought, but the opinion among my non-runner friends was “You wuss.”

Fast forward to April 2013. Another year older, a few running injuries along the way, back to the training schedule. I head off to Boston, avoiding crowds, not shaking hands, with my hygiene gel at hand. This time I didn't get a cold, and there were no other mishaps.



▲ Chandra Ramamoorthy

Division News

On April 15, the race was off to an auspicious start, with great weather and unbelievable crowd enthusiasm and support. There was none of that Boston “snobbishness” I had heard about. Not at the marathon, I was told. It was great to high-five kids like I was some small-town celebrity and to accept chips and oranges from passersby. You see, marathons are quite fun, even if your feet feel like they are on fire and your knees are complaining and your IT band feels like a vice gripping your legs. Yes, I was having a bad day but stopping wasn’t an option. Quitting the Boston marathon? I wasn’t going to make that sort of headlines in our running group. Runners don’t quit.

Heartbreak hill came and went, and I found it didn’t compare with the west coast hills I had been training on. I crossed the 40-k mark; I could feel that a reprieve from the vice grip of the IT band and neuroma pain was in sight. To my surprise, with barely half a mile to go we were asked to stop, and I saw a bunch of marathoners milling around. “Aha, someone has dropped dead on the course,” was my first thought. But 10–15 minutes later it was obvious things were far more serious. That was the first time I had ever run with a cell phone and was I grateful for it, as messages started arriving with the question, “Are you OK?”

That’s about the time I heard about a blast. Blast? Bomb? Gas-line leak? A bomber at the Boston marathon? It was inconceivable, but it was happening.

The combination of my skimpy running clothing and a cool breeze in the downtown area began adding to my physical discomfort, and by then the race was officially called off. I have to thank all the Bostonians who so generously brought us garbage bags to keep us warm and gave us water to drink. I must have looked particularly pathetic. A woman took off her

jacket and offered it to me while she went to find me a blanket.

The world is full of good people but it’s the bad ones that get all the press.

The next few hours passed in a daze as we slowly wended our way to our hotels despite the many road closures, ambulances, police cars, and SWAT teams. Some runners didn’t have the luxury of returning to their hotels because they were in the cordoned-off areas around Copley square.

Watching the scene on the hotel TV made me aware how many had lost their lives and limbs. So many of them were young, enthusiastic supporters, relatives of runners, etc. Will anyone choose to participate when the marathon is held next year or more importantly what crowd support would we have, I wondered?

I reflected on the fact that during my first attempt at the Boston Marathon I was ill and there was a heat wave, and during my second try there were bomb blasts. Was there a message in this for me?

A feeling of unfinished business bothered me. “Did you finish the Boston?” I asked myself. Not quite. But crossing that finish line seemed very important to me. My running injuries seem to occur more often and I was worried my marathon-running days were probably numbered. So, I decided to run the Big Sur marathon, in my own backyard, less than two weeks later, on April 28. I wanted to finish what I had begun.

Again, it was a beautiful day, with spectacular scenery, and this time I crossed the finish line. I’ve always wondered about the folks who run the Boston-Big Sur Challenge. Now I am one of them. Crazy, who me? That’s a story for another day.” 🍷

Division News

Obstetric Anesthesia

Reflections on the Last 10 Years

By Edward T. Riley, MD

On April 1, Dr. Brendan Carvalho took over the reigns as chief of OB anesthesia. He has asked me to reflect on my time as chief as I pass the baton to him.

Looking back objectively, I was chief for 10 years and I've been on faculty for 19 years. A lot has happened over that time and what is interesting is that it is hard to differentiate the time I was chief from when I wasn't. Since I joined OB anesthesia, I have found that every member of the team has worked to make the division function at the highest level possible. The group has always been led by consensus, and each individual has taken responsibility to improve the service every day.

It is the group's cohesiveness and the commitment to our mission that I remember most from my time as chief. When I think of what our fellows and faculty have accomplished in making this one of the top OB anesthesia departments in the country, I am awed. We have all fed off of each other, taking what one person started and elevating it to the next level. For example, Sheila Cohen wrote one of the first papers on the use of neuraxial morphine for post-cesarean pain. Post-cesarean pain was some of my early research. We conducted studies on ketorolac and then DepoMorphine. Now Brendan is looking at the psychological and physiological aspects of post-cesarean pain. What will our next generation do to advance this area?

We have not just helped each other make the service so functional in the research arena. Each individual has spent more time than they care to recall in multi-disciplinary care meetings. We have worked with OBs, surgeons, cardiologists, and radiologists to plan anesthetic plans for complicated patients. Each individual has championed a different aspect of clinical care and teaching so that we deliver the best possible care. I wouldn't want to count the hours Gill Hilton and Steve Lipman have put into simulation and team training. The work Jeremy Collins has done on airway management on OB is very much appreciated by everyone who has done a general anesthetic on the labor and delivery floor. And of course, we wouldn't have the current world-class protocols for hemorrhage and anticoagulation management without Alex Butwick's work.

Being a part of this team has been my greatest privilege and honor as a physician. I have never felt more or less valuable to the team, whatever my role, and I am sure that feeling will continue as Brendan takes over. Our division functions the way it does because we have worked to help each other flourish as individuals and as a team. Working alongside Sheila, Brendan, Alex, Steve, Gill, Jeremy, and Dr. Lindsey Atkinson Ralls has been great, and I know it will continue to be so. Just as Sheila did after she handed me the baton, I plan on being around and working with Brendan until it is time to hang up my hat. Working with this group is too much fun to stop doing it. 🍷

Division News

VA

By Edward Mariano, MD

At the VA in Palo Alto, we are currently planning our second annual faculty development retreat to be held in July 2013. The first faculty development retreat was held on July 25, 2012, and was attended by faculty from the Anesthesiology and Perioperative Care Service. Drs. Richard Mazze, Edward Mariano, and Steve Howard organized the event that was titled “Defining a Successful Academic Career and Achieving It.”

The genesis of the retreat developed after many discussions about how to mentor “junior” faculty members early in their academic career. Successful leaders from the VA and Stanford participated in the event by engaging current VA anesthesiologists in discussions about how to achieve clinical, research, education, and leadership success in an academic environment.

This retreat inspired and energized a number of innovative programs, such as in-hospital acute pain medicine, perioperative care consultation, a patient-care clinical pathway for joint replacement, which includes fast-tracking, and multi-disciplinary fall prevention. We had a winter mini-retreat in January 2013 to address opportunities and challenges to expanding the role of our anesthesiologists in perioperative patient care. The upcoming July retreat is modeled around the theme of “Teaching the Teachers.”

Dr. Edward Mariano was awarded a Research in Education Grant from the Foundation for Anesthesia Education and Research titled: “An Efficacy Study of Simulation-based Training on Practicing Anesthesiologists’ Acquisition of Ultrasound-Guided Perineural Catheter Insertion Skills.”

The study will determine the efficacy of conventional training methods (e.g., didactic lectures and model scanning) and immersive learning (e.g., hybrid simulation) in teaching ultrasound-guided perineural catheter insertion to anesthesiologists in practice without prior formal regional anesthesia training.

Because anesthesiologists are rarely studied after the end of residency training, we hope this methodology will be a model for the introduction of new techniques and technologies throughout the career of the practicing anesthesiologist.

In April, we received news that Dr. Ankeet Udani, CA-3 anesthesia resident and Fellow in Stanford’s Anesthesia and Research in Medicine (FARM) program, was awarded a Research Fellowship Grant from the Foundation for Anesthesia Education and Research for his project entitled: “The effectiveness of simulation-based deliberate practice versus a standard didactic curriculum on learning regional anesthesia.” Dr. Udani’s project will be performed at the VA Palo Alto’s simulation center, and his mentors will be: Drs. Steve Howard, David Gaba, Edward Mariano, Clarence Braddock, and Kelley Skeff.

In May, Dr. Edward Mariano will chair the 2013 Spring Annual Meeting of the American Society of Regional Anesthesia and Pain Medicine, and Dr. David Gaba will be honored by the International Anesthesia Research Society as the 2013 T.H. Seldon Memorial Lecturer at the IARS annual meeting. This lectureship was established to honor Dr. “Harry” Seldon, the *Anesthesia & Analgesia* Editor-In-Chief for 23 years, from 1954–1976. ☐

Division News

Resident Research Rotation

By Vivianne Tawfik, MD, PhD

This year we were excited to have expanded our ability to offer residents research time to work on mentored projects with faculty. The goal of the month-long rotation is to encourage residents to get involved with research projects, to foster a strong mentoring relationship with an attending in the department, to learn critical thinking skills, and (in some cases for the first time) to present an abstract at a national meeting, such as the Western Anesthesia Resident Conference (WARC).

To be granted research time, residents are asked to submit a one- to two-page proposal outlining their project and goals for the month. They are then asked to present their proposals to the department during a Thursday FNR session to get additional feedback prior to the project start, and are expected to present their findings at WARC and the research dinner in May.

The following seven residents completed research projects in 2012–2013:

Marianne Chen, CA-3. Project title: “Endotracheal tube cuffs: Does education help achieve optimal pressures?” Mentor: Richard Jaffe

Vanessa Moll, CA-3. Project title: “A guide for establishing sustainable education and research partnerships in anesthesia with resource-poor communities.” Mentor: Ana Crawford

Catherine Reid, CA-3. Project title: “Insidious exposure to anesthetic waste gas in an operating room.” Mentor: John Brock-Utne

Estee Garazi, CA-3. Project title: “Arterial hyperoxia and neurologic injury following cardiac surgery with deep hypothermic circulatory arrest.” Mentor: Rob Lobato

Jody Leng, recent graduate. Project title: “Monitored anesthesia care for vitreoretinal surgeries: Which technique is safest?” Mentor: David Drover

Morgan Dooley, CA-3. Project title: “Assessment of resident physician wellness: Survey tool development, data analysis, and lessons for future wellness curricula.” Mentor: Emily Ratner

Kevin Blaine, CA-2. Project title: “Characteristics of data registry cohort studies published in the anesthesia literature.” Mentor: Sesh Mudumbai and Bassam Kadry

Feedback from the residents indicated that this rotation enabled them to gain invaluable research skills, including learning to turn a simple question into a research project and writing a subsequent grant. They were grateful for the opportunity to work with mentors with strong research backgrounds.

Jody Leng said, “There is no better way to be able to discern between junk articles and practice-changing articles than to have done research ourselves and learned the many subtle ways in which data can be obtained, manipulated, analyzed, and presented.”

“I now feel comfortable initiating clinical studies...and obtaining the information I need to pursue clinical research,” Estee Garazi said. 📖

For more information on the resident research rotation, please contact Vivianne Tawfik, vivianne@stanford.edu.



Division News

Research Continues Its Roll!

By Michael K. Helms, PhD, MBA

In previous issues of the *Gas Pipeline*, we shared good news about recent grant awards. Once again, we have much good news to impart.

This February, five residents and instructors sent grant applications to FAER and three of those were awarded! FARM Fellows Boris Heifets, MD, PhD, Vivianne Tawfik, MD, PhD, and Ankeet Udani, MD, all won awards from FAER. Boris won a two-year Mentored Research Training Grant—Basic Science, working with Drs. Bruce MacIver, Rob Malenka, and Karl Deisseroth, on a study entitled “Improving deep brain stimulation through targeted synaptic modification”; Vivianne won a one-year Research Fellowship Grant, working with Drs. Greg Scherrer, Rona Giffard, and Sean Mackey, on a study entitled “Opioid signaling in CNS glia: implications for opioid analgesia and tolerance”; and Ankeet won a Research in Education Grant, working with Drs. Steve Howard, Ed Mariano, Kelley Skeff, Clarence Braddock, and David Gaba, on a study entitled “A randomized, controlled study comparing the effectiveness of simulation-based deliberate practice versus a standard didactic curriculum on learning regional anesthesia.” Winning three grants from FAER in one cycle is an amazing achievement.

It is also noteworthy that four FARM fellows now have FAER funding. In addition to the three grants highlighted above, Eric Gross, MD, PhD, has a K99/R00 grant from NIH.

Other recently awarded grants include R01 from NIH grants for Drs. Rona Giffard and Jim Trudell, and a K02 grant from NIH to Larry Chu. Dr. Giffard’s R01 grant from NINDS is entitled “Mitochondrial protection in post-stroke recovery”; Dr. Trudell’s R01 grant from NIAA is entitled “Defining alcohol binding sites

in ligand-gated ion channels”; and Dr. Chu’s K02 grant from NIDA is entitled “Understanding effects of chronic opioid therapy in humans.” This K02 grant is for newly independent investigators, i.e., faculty with their first R01 grant, and it provides funding for salary.

We also recognize the success of Brice Gaudilliere, MD, PhD, and Katie Martucci, PhD, in being selected as trainees in the Anesthesia Training Program in Biomedical Research, starting July 1. This program is funded by a T32 grant from NIGMS, with Dr. Rona Giffard as the PI and provides two years of training in academic anesthesia research. Several former trainees have been successful in securing academic positions and research funding.

Two abstracts submitted to conferences have also won awards. Drs. Brice Gaudilliere and Martin Angst’s abstract, “System-wide analysis of the endogenous immune response to surgical trauma using mass cytometry (CYTOF)” was selected as best of category for the IARS conference in May 2013. Also, the abstract submitted by Dr. Justin Workman and colleagues, “Replacing continuous femoral nerve blocks with continuous adductor canal blocks within a clinical pathway for total knee arthroplasty: A case-control study of postoperative ambulation” was selected as one of the best three abstracts for the Annual Meeting of the American Society of Regional Anesthesia and Pain Medicine (ASRA) this May. This award includes a travel grant.

Please join me in congratulating your colleagues on their many successes.

Finally, we look forward to the Annual Research Dinner at the Sheraton Palo Alto Hotel, on Monday, May 13. Dr. Mark Newman from Duke University will be our guest evaluator. 📧

Division News

Critical Care Medicine

New Fellows for 2014–2015

The Stanford Anesthesia Critical Care Group accepted eight individuals for critical care medicine fellowship training in 2014 and 2015. They are:

- Dr. Bev Chang, Brigham and Women's Hospital/Harvard Medical School;
- Dr. Craig Chen, Stanford University;
- Dr. Sonia Nhieu, chief resident and cardiac anesthesia fellow at UCSD;
- Dr. Katrina Harper, emergency medicine resident at Mt. Sinai Hospital, New York;
- Dr. Robert Groff, Stanford University;
- Dr. Lyle Garety, chief resident at the University of Vermont;
- Dr. Billy Sauer, chief resident at Massachusetts General Hospital;
- Dr. Lindsay Raleigh, tandem cardiac anesthesia and ICU fellowships at Stanford University.

These individuals were chosen from a group of more than 60 applicants with superb academic records. They will join Stanford anesthesia resident Dr. Leslie Hale, who will begin a two-year critical care medicine fellowship in July. Leslie's critical care medicine fellowship is co-terminus with the CA3 year of her anesthesiology residency (part of a combined anesthesiology–critical care medicine joint training program). They will also join anesthesiology resident Dr. James Li, who will begin the two-year combined anesthesiology–critical care medicine joint training program in July 2014.

The critical care medicine group would like to offer special thanks to Bernadett Mahaney and Erin Schindler, who did an incredible job coordinating all of the interviews this year.

ACGME RRC

Drew Patterson, MD, PhD, will begin a six-year term on the ACGME's RRC for Anesthesiology in July 2014. 

Pain Management

Congratulations to Dr. Sean Mackey, who was promoted to Professor of Anesthesia, Med Center Line.

Several members of the Pain Management Division have been awarded grants to support their research activities:

- Sean Mackey received an NIH NIDA T32 entitled the "Interdisciplinary research training in pain and substance use disorders." This grant will fund six postdoctoral fellows per year across multiple departments. Sean also received an NIH NIDA contract to support the National Pain Registry project.
- Dr. Jennifer Hah was awarded an NIH NIDA K23 grant for her project entitled "Psychological factors contributing to persistent opioid use after surgery."
- Dr. Katie Martucci was awarded a fellowship the Anesthesia Training Program in Biomedical Research, beginning on July 1. In addition, Dr. Jiang-Ti Kong received an extension of her fellowship on the same grant.
- Rebecca McCue was awarded a Stanford VPUE Departmental Grant for Undergraduate Research to support numerous student research assistants in the Pain Research Division. 

Stanford Begins Schwartz Rounds

Dr. Sara Nikravan, clinical professor of anesthesia and critical care medicine, is pleased to announce the beginning of Schwartz Rounds at the Stanford Hospital.

Schwartz Rounds are named after Boston healthcare attorney and nonsmoker, Ken Schwartz, who was diagnosed with advanced lung cancer in November 1994. During his unsuccessful, 10-month battle with cancer, Mr. Schwartz was moved by the compassionate care he was receiving. Seeking to create a center that would promote humanism in medicine and nurture the bond between patients and healthcare providers, he created the Schwartz Center and Schwartz Rounds.

The Schwartz Center Rounds program, now taking place in more than 300 healthcare facilities in 38 states, offers healthcare providers a forum to openly and honestly discuss social and emotional issues that arise in caring for patients. In contrast to traditional medical rounds, the focus is on the human dimension of medicine. Caregivers have an opportunity to share their experiences, thoughts, and feelings on thought-provoking topics drawn from actual patient cases.

After months of hard work and planning by a select group of nurses, physicians, social workers, case managers, chaplains, and physical therapists, the first-ever hospital-wide Schwartz Rounds was held on April 17. The discussion, entitled “Life-Altering Injuries in a Young Trauma Patient: The Conflict Between Caring & Letting Go,” centered around a very sick young Stanford trauma patient.

The panelists for this event were:

Kristan Staudenmayer, MD

Nicole Cromwell, RN

Shijung Shim, Chaplain

It was facilitated by Tim Chamberlain, LCSW. Sara Nikravan served as the physician leader.

Schwartz Rounds will be held every other month on the third Wednesday. The next Schwartz Rounds is scheduled for June 12. 📅

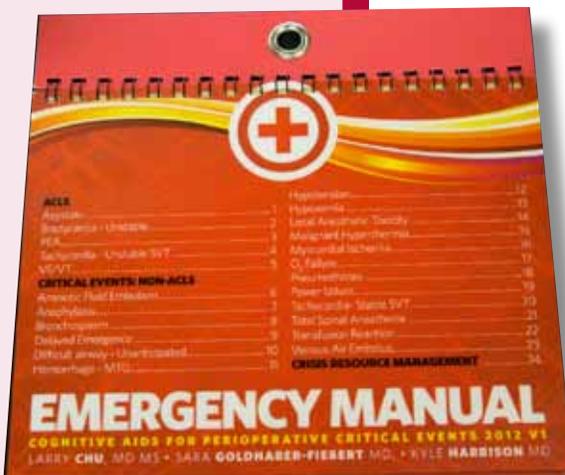
Emergency Manual Website Expanded

By Sara Goldhaber-Fiebert

A free, downloadable pdf of the *Emergency Manual: Cognitive Aids for Perioperative Critical Events* (2013, V1) by the Stanford Anesthesia Cognitive Aid Group is available at <http://emergencymanual.stanford.edu>. Additionally, expanded resources include implementation tips and crisis resource management handouts for debriefing or teaching. You may share this website with your colleagues.

The manual contains a simulation-tested summary of best practices for managing 23 critical perioperative events. The new pdf is an updated version of the hard-copy emergency manuals that are available at Stanford and affiliated hospitals in ORs, anesthetizing locations, and perioperative areas. A list of clinically useful phone numbers has been added just inside the back cover in all Stanford hard copies, and a “phone tab” will be added soon to locate this page easily.

After using the emergency manual *during* a critical event or near miss, you can report the incident to any member of the Stanford Anesthesia Cognitive Aid Group (Drs. Steve Howard, Larry Chu, Sara Goldhaber-Fiebert, David Gaba, Kyle Harrison); via www.aqiairs.org/, which is a secure national reporting site run by Anesthesia Quality Institute; or via www.cogaids.org, which is run by the AIM lab. 📅



2013 ASA Legislative Conference Targets Key Anesthesia Legislation

By Maureen Donohue

In April, the ASA convened its annual legislative conference in Washington, D.C. This is the largest ASA meeting focusing specifically on state and federal legislative, regulatory, and political issues that affect the specialty of anesthesiology. This year's conference centered on the following four legislative matters that affect the practice of anesthesiology:

Food and Drug Administration Safety and Innovation Act (FDASIA). This legislation, passed on July 9, 2012, requires manufacturers to report to the FDA when the supply of critical drugs is threatened by permanent discontinuation or temporary shortages. It also charges the FDA with the task of developing specific plans to mitigate drug shortages, and charges the with the task of determining why a particular drug is in short supply and developing recommendations for preventing and alleviating temporary interruptions in supply. Conference speaker Captain Valerie Jensen from the FDA said that although FDASIA is less than a year old, it is already making it easier to prevent drug and ease shortages.

“This legislation would not have been passed without the efforts of groups like the ASA,” said Dr. Jennifer Zocca, who attended the conference with Dr. Michael Champeau.

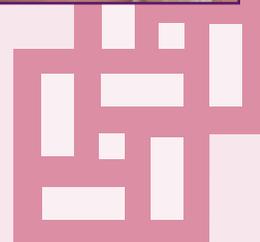
H.R. 351 and S. 351, the “Protecting Seniors' Access to Medicare Act of 2013.” The sustainable growth rate formula (SGR), enacted by the Balanced Budget Act of 1997, requires mandatory cuts in Medicare reimbursement to doctors when expenditures from the previous year exceed the target. As currently interpreted, the formula does not separate high-volume growth services from medical services such as anesthesiology, which do not increase program spending. Medicare Part B payments were cut by 2% effective April 1 owing to the sequestration and, beginning in 2014, the non-elected Independent Payment Advisory Board (IPAB) will have sweeping powers to order additional across-the-board or targeted cuts in Part B payments. Because anesthesiologists are already reimbursed at a lower rate than any other medical provider, the ASA warns that further cuts could cause the collapse of Medicare reimbursement for anesthesiology services. This, in turn, could compromise safe access to care for millions of patients. The ASA has been lobbying Congress to develop a new formula that more accurately reflects the cost of providing anesthesiology services to Medicare beneficiaries, and urges members to petition their representatives to replace SGR and develop more equitable reimbursement policies.

Rural “Pass-Through” Program. Current legislation allows eligible rural hospitals to use reasonable-costs-based Part A Medicare funds, rather than the conventional Part B fee schedule, to reimburse nurse anesthetists and anesthesiologist assistants, but it does not permit these funds to be used to employ or contract with anesthesiologists. Legislation introduced in the 112th session of Congress would reform the program and allow rural hospitals to use already allocated “pass-through” funds to reimburse all types of anesthesia providers. The ASA strongly supports reintroduction of this legislation.

H.R. 1427, The Truth in Healthcare Marketing Act of 2013. This bill would require all healthcare providers to identify the licensure under which they practice to prevent patient confusion about the types of healthcare workers who treat them, which would enable patients to make more informed decisions about their care. “The hospital is already a really confusing place and patients have a right to know under which license healthcare providers practice,” Jennifer said.

Although some have perceived this issue as a turf war between healthcare providers, it's an issue for consumers, she said. The bill would also promote transparency in healthcare provider advertisements and marketing.

Jennifer found the conference to be an invaluable experience. “I was able to learn in depth about the specific issues facing our specialty, and had the opportunity to hear many different viewpoints on how to best manage them,” she said.



In addition to attending the conference, Michael and Jennifer headed to Capitol Hill with other CSA delegates to speak to congressional staffers about some of these issues. “We thanked them for their work on the drug shortage legislation,” Jennifer said. They also emphasized the importance of making permanent changes in Medicare reimbursement policy for anesthesiologists.

In general, their efforts were well received. “[Members of Congress and their staffer] typically listen when doctors come to the Hill, so everyone seemed happy to meet with us,” said Jennifer, a graduate of Georgetown University School of Medicine and former Congressional intern.

Jennifer also enjoyed the opportunity to meet other anesthesiologists interested in health policy issues. She hopes that more of her co-residents will be able to attend next year’s conference. “Even though you may be unfamiliar with the issues, the more you exposure you get, the more you can be involved [in affecting healthcare policy] in a meaningful way,” she stressed. 📖

Be Aware When You Are Attending an Industry-Sponsored Medical Lecture

By John Brock-Utne, MD, and Mark Singleton, MD

A speaker at an industry-sponsored medical meeting may make recommendations regarding the equipment they highlight and possibly promote. They may imply that this equipment, if not recommended by the ASA, might allow anesthesiologists to meet the requirements of a standard, guideline, advisory, or statement through its use.

On the ASA website you can find the following definitions:

Standards provide rules or minimum requirements for clinical practice. They are regarded as generally accepted principles of patient management. Standards may be modified only under unusual circumstances, e.g., extreme emergencies or unavailability of equipment.

Guidelines are systematically developed recommendations that assist the practitioner and patient in making decisions about health care. These recommendations may be adopted, modified, or rejected according to clinical needs and constraints and are not intended to replace local institutional policies. In addition, practice guidelines are not intended as standards or absolute requirements, and their use cannot guarantee any specific outcome. Practice guidelines are subject to revision as warranted by the evolution of medical knowledge, technology, and practice. They provide basic recommendations that are supported by a synthesis and analysis of the current literature, expert opinion, open forum commentary, and clinical feasibility data.

(A practice advisory is similar to a guideline but relies more on consensus of expert opinion where published research evidence is lacking. Similar rigorous methodology applies in the development of both).

Statements represent the opinions, beliefs, and best medical judgments of the House of Delegates. As such, they are not necessarily subjected to the same level of formal scientific review as ASA Standards or Guidelines. Each ASA member, institution, or practice should decide individually whether to implement some, none, or all of the principles in ASA statements based on the sound medical judgment of anesthesiologists participating in that institution or practice.

Hence, when you are attending industry-sponsored lectures it is important that you are aware of these definitions. Otherwise you may erroneously think that the equipment that you are being told about is recommended by the ASA and that not using it makes you out of compliance.

The ASA’s standards, guidelines, advisories, and statements are there to provide guidance to improve your decision-making in your anesthesia practice. Make sure that you understand that a practice guideline or advisory is not misrepresented as or misconstrued as a standard or statement. 📖

A Heaping Dose of Medicine: Celebrating the Intersection of Medicine and the Arts

On May 8, 2013, the Arts, Humanities and Medicine Program presented A Heaping Dose of Creativity: Medicine and the Arts, a symposium to explore the intersections between medicine and the creative arts, including writing, visual art, dance, and music. The event, supported by the Stanford Arts Institute and the Department of Anesthesiology, comprised an afternoon panel of presenters at Cantor Arts Center and an evening concert and lecture at Bing Concert Hall. The symposium was designed to celebrate the new Arts District at Stanford, and its proximity to the medical school and medical center. Afternoon speakers were Dr. Audrey Shafer on “Arts and Health: Crossing Campus Drive,” which included a lyric look at the work of an anesthesiologist; Dr. Hans Steiner on “René Magritte: When Sleeping Dogs Dream—Art as an Antidote to Extreme Adversity,” an analysis of the art of Magritte from a psychiatric perspective on loss and trauma; and Janice Ross, PhD, on “The Medical Body: from Anna Halprin to Ann Carlson,” an in-depth inquiry of choreography as a means to explore the body, psyche, illness, and health. Artist-in-Residence Ann Carlson previewed part of her new work, *The Symphonic Body*; three scientists from the medical school, under Carlson’s direction, performed gestures of their lab work to music and text. The evening portion of the event opened with remarks by Dr. Philip Pizzo, former Dean of the School of Medicine, on the synergies of the arts and medicine at Stanford, and featured Dr. Richard Kogan, concert pianist, psychiatrist, and Artistic Director of the Weill Cornell Music and Medicine Program. Dr. Kogan’s presentation on the mind and music of Beethoven, including a tour de force rendition of the *Appassionata* sonata, received a standing ovation in Bing Concert Hall. 📺



▲ *Afternoon speakers Janice Ross, PhD, Hans Steiner, MD, Audrey Shafer, MD, Ann Carlson, Artist-in-Residence, Choreographer. Poster by medical student Tessa Johung.*

◀ *Richard Kogan, MD, Artistic Director Weill Cornell Music and Medicine Program, *The Mind and Music of Beethoven*.*

Social Events

3rd Annual Chili Cook-off Winners

The 3rd Annual Anesthesia Chili Cook-off was held on Friday, April 5. Cash prizes of \$50 were awarded in three categories: best chili, best side dish, and best dessert.

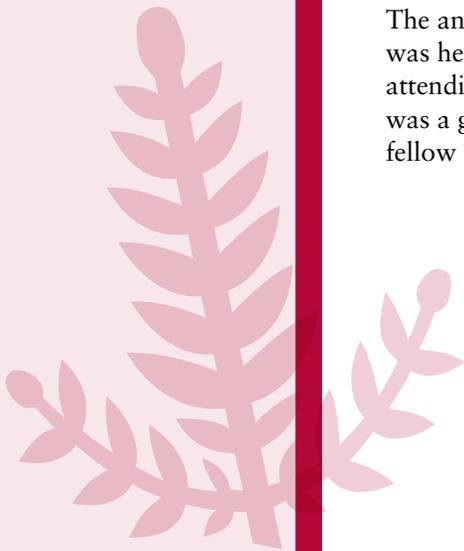
The big winner was Larry Green, who won for his recipe called “Ol’ Grandad’s Secret.” Larry said that honey is the “secret” that makes his chili a stand-out. Please contact Larry at lgreen@stanford.edu if you would like the recipe.

Bill Magruder won best side dish for his salad, and Sheila Lee took home the prize for best dessert for her cupcakes.

Congratulations to all of the winners!

Women in Anesthesia Brunch

The annual Women in Anesthesia Brunch, organized by Tara Cornaby and Emily Ratner, was held on April 14 at Il Fornaio Restaurant in Palo Alto. Residents, fellows, and attendings all enjoyed good company and good food on a beautiful Sunday morning. “It was a great opportunity to catch up and meet new colleagues,” said pediatric anesthesia fellow Dr. Becky Wong.



Social Events

Mark Your Calendars!
**THE 2ND ANNUAL ARTS
IN ANESTHESIA SOIRÉE**
May 30, 2012

2nd Annual Arts in Anesthesia Soirée

The 2nd Annual Arts and Anesthesia Soirée will be held on Thursday May 30, 2012, at 5:30PM in LKSC Berg Hall C.

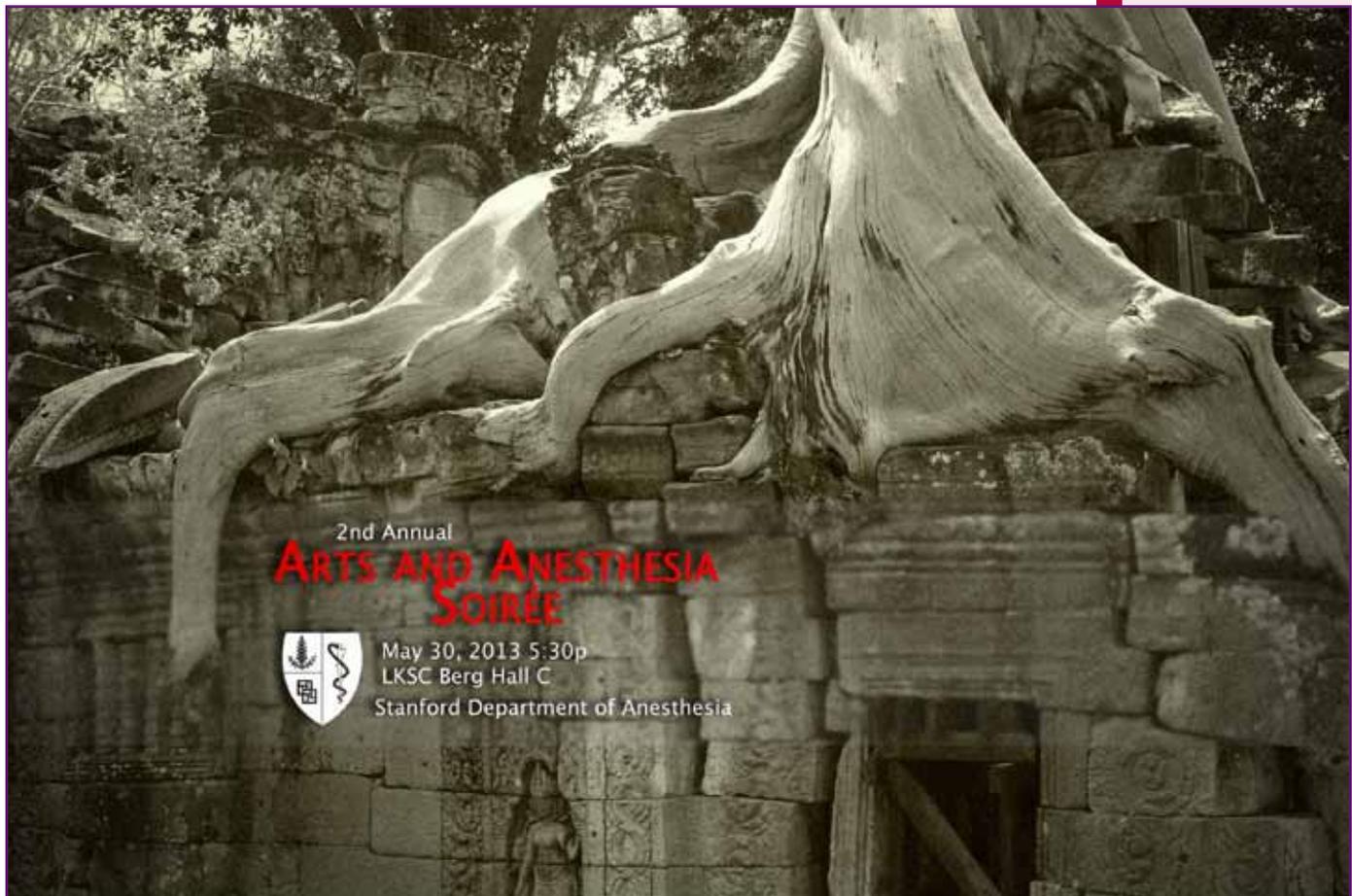
This is an opportunity for our community to connect through creativity. The evening will feature presentations in many artistic fields.

Last year's soirée included art, poetry, literature, craft exhibit (origami, knitting, sewing, basket weaving), print photography, a digital image slideshow, music, dance, a sword and fan performance, martial art, short readings of original writing, and a film.

Hors d'oeuvres and desserts will be served, and there will be an open bar.

Anyone affiliated with the Department of Anesthesia, Perioperative and Pain Medicine, including family members and alumni, are invited to attend this unique showcase of our department's creative side.

If you have any questions, please contact Carolyn Rebello (crebello@stanford.edu) or Julie Good (julieg@stanford.edu). ☎



Faculty Corner

Publications

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- Bruehl S, Apkarian A, Ballantyne J, Berger A, Borsook D, Chen W, Farrar J, Haythornthwaite J, Horn S, Iadarola M, Inturrisi C, Lao L, Mackey S, Mao J, Sawczuk A, Uhl G, Witter J, Wolf C, Zubieta J, Lin Y. Personalized medicine and opioid analgesic prescribing for chronic pain: opportunities and challenges. *J Pain* 2013; 14(2):103–13.
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- Carroll I, Hah J, Mackey S, Ottestad E, Kong J, Haidji S, Tawfik V, Younger J, Curtin C. Perioperative interventions to reduce chronic postsurgical pain. *J Reconstutr Microsurg* 2013. [Epub ahead of print]
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- Carvalho B, Lemmens H, Ting V, Angst M. The effects of continuous subcutaneous instillation of ketorolac and hydro-morphone on wound biochemistry in surgical wounds following cesarean delivery. *J Pain* 2013; 14(1):48–56.
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- Carvalho B, Zheng M, Aiono-Le Tagaloa L. Evaluation of experimental pain tests to predict labor pain and epidural analgesic consumption. *Br J Anaesth* 2013; 110(4): 600–6.
- Farid-Moayer M, Siegel LC, Black J. A feasibility evaluation of oral pressure therapy for the treatment of obstructive sleep apnea. *Ther Adv Respir Dis* 2013; 7:3–12.
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- Kan J, Harrison TK, Kim TE, Howard SK, Kou A, Mariano ER. An in vitro study to evaluate the utility of the “air test” in inferring perineural catheter tip location. *J Ultrasound Med* 2013; 32(3):529–33.
- Kong J, Johnson K, Balise R, Mackey S. Test-retest reliability of thermal temporal summation using an individualized protocol. *J Pain* 2013; 14(1): 79–88.
- Landau R, Liu SK, Blouin JL, Carvalho B. The effect of OPRM1 and COMT genotypes on the analgesic response to intravenous fentanyl labor analgesia. *Anesth Analg* 2013; 116(2):386–91.
- Lipman SS, Carvalho B, Cohen SE, Druzin ML, Daniels K. Response times for emergency cesarean delivery: use of simulation drills to assess and improve obstetric team performance.

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Abstracts

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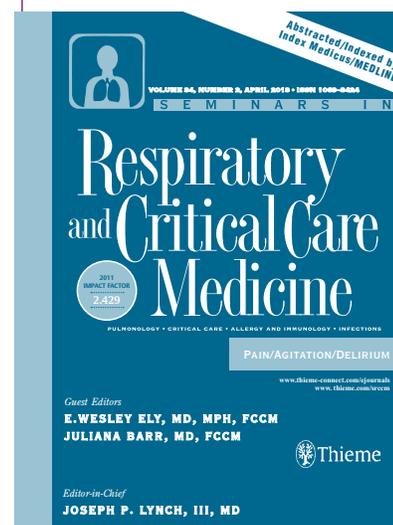
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Awards, Honors, and Appointments

Drs. Julianna Barr and E. Wesley Ely were guest editors of the April issue of *Seminars in Respiratory and Critical Care Medicine* 2013;34(2). The issue contains several spin-off articles on the SCCM's 2013 ICU Pain, Agitation, and Delirium Clinical Practice Guidelines. The issue is available online.

Dr. Steven Howard was elected Chairperson of the Scientific Evaluation Committee (SEC) of the Anesthesia Patient Safety Foundation (APSF), as well as to the executive committee of the APSF. The role of the SEC is to evaluate the grant proposals submitted to the APSF for funding and to make recommendations to the executive committee for excellent proposals worth funding. APSF funds \$750,000 annually for patient safety research.

Dr. Audrey Shafer received a commendation in the 2013 Hippocrates Poetry and Medicine Prize contest for “The Off-Duty Anaesthetist.”



Faculty Corner

Invited Talks and Guest Professorships

Dr. Martin Angst gave the presentation “miR-181 regulates stress proteins, apoptosis regulatory proteins, and outcome from cerebral ischemia” at the International Stroke Conference, Honolulu, February 6–8, 2013.

Dr. Andrew Patterson provided a Grand Rounds lecture on “Vasopressin and septic shock: are we using this drug appropriately?” at the University of Nebraska College of Medicine, Department of Anesthesia, Omaha, Nebraska, on March 20, 2013.

Dr. Alexander Butwick gave two presentations at the 3rd World Congress of Regional Anesthesia & Pain Therapy, Sydney, Australia, February 3–7, 2013: (1) “Can we predict severe peripartum haemorrhage and intervene early?” and (2) “Point of care devices for obstetric anesthesia practice.”

Dr. Alexander Butwick gave two presentations at the Society for Obstetric Anesthesia and Perinatology’s Sol Shnider, M.D. Obstetric Anesthesia Meeting, San Francisco, March 14–17, 2013: (1) “Postpartum haemorrhage management—a hematology perspective,” and (2) a Sam Hughes

M.D. Lecture, “What’s new in obstetric anesthesia—an update from 2011–2012.”

Dr. Alexander Butwick gave three presentations at the Santa Joana Annual Obstetric Anesthesia Meeting, Sao Paulo, Brazil, April 2013: (1) “Transfusion update for postpartum haemorrhage”; (2) “Review of the Stanford massive transfusion protocol for obstetrics”; and (3) the Gerard W. Ostheimer lecture, “What’s new in obstetric anesthesia?”

Dr. Brendan Carvahlo discussed various topics covering obstetric anesthesia for the International Anesthesia Research Society (IARS) OpenAnesthesia.org podcast “Ask the Experts,” February 2013.

Dr. Brendan Carvahlo gave three presentations at 3rd World Congress of Regional Anesthesia & Pain Therapy, Sydney, Australia, February 3–7, 2013: (1) “Post-operative pain management following cesarean delivery: state of the art CPR in pregnancy”; (2) “Are we doing a good job in the management of post-CS pain?”; and (3) a combined OASAO–SOAP symposium entitled “Post CS and post VD analgesia in the breast feeding parturient.”

Dr. Brendan Carvahlo gave a presentation on “Neuraxial techniques and dosages to provide

optimum anesthesia for cesarean delivery,” at the Society for Obstetric Anesthesia and Perinatology’s Sol Shnider, M.D. Obstetric Anesthesia Meeting, San Francisco, March 14–17, 2013.

Dr. Beth Darnall provided expert opinion, commentary, and context for “Abused women more susceptible to pain.” *nationalpainreport.com*. <http://americannewsreport.com/nationalpainreport/abused-women-more-susceptible-to-pain-8819453.html>. Published April 17, 2013.

Dr. Charles Hill gave three presentations at Emory University Department of Anesthesia’s New Horizons in Anesthesiology meeting, Vail, Colorado, February 9–15, 2013: (1) “Perioperative management of transcatheter aortic valve implantation (TAVI)”; (2) “ECMO and VAD management in the ICU”; and (3) “Perioperative management of pulmonary hypertension and right ventricular failure.”

Dr. Charles Hill gave two invited lectures at the 35th Annual Meeting & Workshops of the Society of Cardiovascular Anesthesiologists, Miami, April 2013: (1) “ICU considerations in ECMO therapy,” and (2) “Assessment of low-gradient severe aortic stenosis.”

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Dr. Steven Howard gave a presentation on “Anesthesia patient safety foundation funding opportunities” at the Association of University Anesthesiologists (AUA) National Meeting, Miami, April 5, 2013,

Dr. Steven Howard was invited by a Dr. James Cottrell, Chairman of the Department of Anesthesia, to be a visiting professor at SUNY Downstate Medical Center, Brooklyn, New York.

Dr. Edward Mariano gave three invited lectures to the Department of Anesthesia at Fondazione IRCCS Policlinico, San Matteo, Università degli Studi di Pavia, Italy, March 21–23, 2013: (1) “Overview of TAP blocks,”; and the 5th Study in Multidisciplinary Pain Research (SIMPAN) Lectures (2) “Ultrasound guidance in regional anesthesia: what is the evidence?” and and (3) “How can we prolong at-home postoperative regional analgesia?”

Dr. Einar Ottestad participated in at the Third Occipital Nerve, Cervical Medical Branches and Stellate Ganglion Ultrasound Workshop, and gave a presentation on cervical axial ultrasound at the 2013 AAPM Annual Meeting, Ft. Lauderdale, Florida, April 10–14, 2013.

Dr. Ravi Prasad was a visiting professor at Vanderbilt University



▲ *The Stanford Center at Peking University (SCP KU).*
L–R: *Yali Cong, Andrew Andreasen, Audrey Shafer, Liping Guo, Qi Chen.*

from March 14–16, 2013, presenting at Anesthesia Grand Rounds and leading a workshop on interdisciplinary pain program development.

Dr. Ravi Prasad served on the program committee and was a scientific session chair at the American Academy of Pain Medicine Annual Meeting, Ft. Lauderdale, Florida, April 11–14, 2013. He also presented on “Personality disorders in chronic pain and cognitive-behavioral theory as applied to chronic pain.”

Dr. Emily Ratner and her colleague Dr. Anne Nedrow from the Oregon Health & Science University, gave the presentation, “From soup to nuts: physician wellness programs for medical students, residents and faculty at Stanford, OHSU and Duke,” at the Inaugural Building Healthy Academic

Communities National Summit, Columbus, Ohio, April 22, 2013.

Dr. Audrey Shafer was a visiting professor at the Hong Kong University Li Ka Shing Faculty of Medicine, Program in Medical Humanities, where she lectured on “Medical humanities at Stanford University” and “The aesthetics of anaesthetics,” and held a “Writing and Medicine Workshop”; Hong Kong, March 11–15, 2013.

Dr. Audrey Shafer was invited to speak on “Medical humanities at Stanford University,” at Peking University School of Medicine Institute for Medical Humanities, Beijing, March 18, 2013.

Dr. Audrey Shafer was a respondent for “Boundaries of Narrative Genres,” by Marilyn McIntyre, presented at Boundaries of

Faculty Corner

Narrative: A Symposium in the Medical Humanities, UC Berkeley, April 19, 2013.

Dr. Audrey Shafer gave a poetry reading at An Evening of Poetry and Music: St. Lawrence String Quartet “The Wind of Freedom Blows,” Cantor Arts Center, Stanford University, April 23, 2013.

Dr. Julie Williamson was an invited speaker at the South African Society of Anaesthesiologists Congress 2013, March 2–6, 2013, Port Elizabeth, South Africa. She spoke about anesthesia for children with mitochondrial disease, and about endocrine issues in pediatric anesthesia; and she co-led a pediatric difficult airway workshop.

New Library Books

Hillary Farkas invites you to peruse the following new books available in the library:

The Anesthesia Guide (A Lange Medical Book). Arthur Atchabahian and Ruchir Gupta, Eds. RD 82.2 A83 2013.

Curriculum Development for Medical Education: A Six-Step Approach. 2nd Edition. Dave E. Kern, Patricia A. Thomas, and Mark T. Hughes, Eds. R 834 C87 2009.

Gregory’s Pediatric Anesthesia, 5th Edition. George A. Gregory and Dean B. Andropoulos, Eds. RD 139 P40 2012. (This book comes with different online access than was available before. If you plan to use it to study for the boards, please keep a copy of these instructions: login at: <http://online.vitalsource.com>; e-mail: bfarkas@stanford.edu; password: anesthes1a (number one, not letter “i”).

Miller’s Anesthesia Review, 2nd Edition (examination questions). Lorraine M. Sdrales and Ronald D. Miller, Editors. RD 81.3 S62 2013. (*Miller’s Anesthesia Review*, with exam questions, can be viewed online through ExpertConsult: ExpertConsult.com; login: bfarkas@stanford.edu; password: anesthes1a (use the number one instead of the letter, ‘i’).*

*Note: Do not try to change any of this information. It will make it unavailable to everyone if anyone attempts to get their own account for any of the ExpertConsult books.

Transitions

▼ Alexander Jorge Davila



New Humans

Tatyana Travkina and her husband Jonathan welcomed a beautiful baby boy named Alexander Jorge Davila at 8:30 AM on Tuesday, March 26. He weighed in at a healthy 8 pounds, 5 ounces and measured 20 inches.

“We are totally in love with the little guy, he’s a great baby,” Tatyana said. “I would like to give special thanks to Gill Hilton, Marianne Chen, Steve Lipman, and Kulsum Akbar for giving me a phenomenal anesthetic and for being involved in a very smooth delivery, and for their excellent follow-up. In addition, I would like to thank everyone in the department for making my life as a pregnant resident (who stubbornly insisted on working till the last moment) as easy as possible.” Congratulations, Tatyana and Jonathan and welcome to the planet, Alexander!



▲ Vivianne Tawfik and son
Nathaniel David Bodley

Vivianne Tawfik and her husband Ian Bodley are proud to announce the birth of their son, Nathaniel David Bodley, on Thursday, May 16, at 8:01 AM. Pronounced a “handsome little man with a full head of hair and dark blue eyes,” by his mother, Nathaniel weighed in at 7 pounds, 11 ounces.

Vivianne and Ian would like to give special thanks to Vanessa Moll, Ed Riley, and the OB anesthesia team for their “amazing care. Demonstrating a lack of sense of direction, Nathaniel flipped breech at 39 weeks and when his failed version turned into a stat c-section, the CSE was already perfect and he was born within 60 seconds!” Vivianne said. “We are so thankful to everyone for their help and good wishes.”

Vivianne and Ian are looking forward to introducing the little man to everyone at graduation.

▼ William (Liam) Gardiner Ralls



Lindsay Atkinson Ralls and her husband Clint are thrilled to announce the arrival of their son, William Gardiner Ralls. Liam, as he is called, was born on May 3 at 12:49 AM after a “fast labor” and weighed in at 7 pounds, 9 ounces. Lindsey reports that mom, dad, Liam, and big brother Drew are all doing well. “Thank you to everyone who helped me out during the pregnancy, and special thanks to Carolyn Weiniger and Megan Olejniczak for a perfect block,” Lindsey said.

Transitions

Department Member Delivers Baby Mid-Flight

On her flight home from the annual meeting of the South African Society of Anaesthesiologists in March, pediatric anesthesiologist Dr. Julie Williamson had to reach into the past and use a medical skill she hadn't practiced since medical school, 15 years before. With the assistance of another doctor and a nurse who were also on the flight, Julie helped fellow passenger Fatoumatta Kaba deliver a healthy, vigorous baby boy. Although the pilot considered diverting the flight to the closest airport in west Africa, once it was determined that the mother and baby were in stable condition, the flight continued on to New York. Paramedics met the plane in New York and transported Kaba and her son Mohammad to the hospital.

Jamahl Winters, a nearby passenger who witnessed the birth, found the experience to be “amazing. I didn't think stuff like that really happened in real life. I thought it was something that happened in TV and movies,” he said.

“It was a rather eventful flight,” Julie said.



Weddings

On March 29, Dave Peng, a member of the anesthesia class of 2011, who also completed a pain management fellowship in 2012, married his fiancée, Kristin, on the island of Maui. Dave would like to thank colleagues Drs. Erin Hennessey, Sarah Bain, Paul Sueno, Vikas Shah, Shaun Kunnavatana, Chris Tirce, Josh Edwards, Jenni Lee, Ellen Choi, and Erin Davis, who helped make the day even more special.

Dave and Kristin make their home in Michigan, where Dave is currently in private practice with Anesthesia Associates of Ann Arbor.



In Memoriam

Renee Grys, a 30-year member of the department of Anesthesia, Perioperative and Pain Medicine, lost her battle with colon cancer on March 2 at the age of 93. Renee retired from Stanford in 2008. As an administrative assistant, Renee wore many hats, but she particularly enjoyed her role as event coordinator. Each year she organized several events, including the residents' graduation, holiday party, and the alumni event at the annual meeting of the ASA.

Renee, who was born Irene Marie Grys in Hammond, Indiana, on March 2, 1919, was preceded in death by her beloved husband, Stanley Joseph Grys. She is survived by daughters Kathleen Lockwood of Vancouver and Laurie Lockwood of Poway, California; and by grandchildren William, Stephen, Michael, Juliana, and Victoria.

A private family service was held in Vancouver, Washington, on March 9. Arrangements are pending to bury Renee's remains alongside her beloved husband Stanley Joseph Grys in Arlington National Cemetery. 📍



Letters to the Editor

Editor:

Congratulations on your excellent publication of *The Gas Pipeline*. It was educational, informative, and entertaining. However, I was surprised by two issues in Rick Novak's listing of the 10 most valuable contributions to anesthesia in the last 25 years [sic]. First, he omitted mentioning pulse oximetry, which would fall into that time line, would certainly be a major asset to anesthesia, and was developed at Stanford. The second is his enamor [sic] with the ASA Difficult Airway Algorithm. Although he states it, there is no scientific evidence that anesthesia is safer because of it. While an interesting educational document, I question the daily clinical value of this algorithm, even in its most recent form (*Anesthesiology* 2013; 118:251–70). It was developed by committee and has all the problems that result when done that way. It is complex, diffuse, multi-dimensional, and all-encompassing such that it is not an instrument that one can easily adopt and practice in the clinical setting. We know from CPR training that the more that emergency care is practiced, the better the outcome. One airway pundit opined that “the more arrows you have in your quiver, the better care you will be able to provide.” I disagree with that assessment as it relates to airway management. Most practicing anesthesia personnel will encounter a difficult airway in less than 10% of their patients, or about 1–2 per month. If one has five different techniques for managing the difficult airway, with that infrequency, he/she won't be an expert with any of them.

As an alternative to the ASA airway algorithm, I would suggest that Rick consider adopting Plans A-D. This option is published in *Clinical Anesthesiology* (Morgan GE, Mikhail MS, Murray MJ, eds. Los Altos, California: Lange Medical Publications, 4 ed. 2006:104–5), *Current Reviews in Clinical Anesthesiology* (2009; 30:61–72), and in the forthcoming edition of *Anesthesiologists Manual of Surgical Procedures* by Richard Jaffe. I have attached a copy of the manuscript from *Current Reviews* to this letter.* I have also prepared a video of airway management and sent a copy to Professor Jaffe for inclusion on the Stanford Anesthesia website. It is already on the UCLA anesthesia and head and neck websites.

These plans are simple, safe, reliable, and effective. If one anticipates a difficult airway, one can try the Glidescope® or Cook catheter (Plan B), or go directly to Plan C. I do 2–3 elective Plan C's every day just to make certain that the house staff knows how to do it. I also do anesthesia for most of the patients with complex head and neck tumors, and I find fewer and fewer indications for awake fiberoptic intubation. As long as the lungs can be ventilated by bag-mask or LMA, which is true for almost all sedated patients, Plan C is easier, quicker, and safer than awake fiberoptic intubation, both for the patient and the anesthesia provider. In experienced hands, Plan C can be completed in less than 5 minutes, and one can become proficient by practicing in normal patients. I have done hundreds of Plan C's, many under difficult circumstances, without a single failure or complication. Obviously, no technique will encompass every conceivable airway problem, but mastering Plans A–D and awake oral and nasal fiberoptic intubation will meet the needs of anesthesia providers in almost all circumstances.

C. Philip Larson Jr., M.D.C.M.
Professor Emeritus, Anesthesia and Neurosurgery
Stanford University
Professor of Clinical Anesthesiology
David Geffen School of Medicine at UCLA

*Owing to copyright and space considerations, we are not able to reproduce Dr. Larson's article, “Essentials of airway management,” in this publication. However, as indicated above, it is available in *Current Reviews in Clinical Anesthesiology* (2009; 30:61–72).

Editor's note:

Dr. Novak's column in the February issue of *The Gas Pipeline* generated considerable interest and a bit of controversy, as demonstrated by the following three letters. I am pleased to publish these letters and Dr. Novak's reply because I would love the *Pipeline* to become a forum for active discussion of topics of interest to our readers. Please feel free to submit letters about anything of interest in this and future issues of this newsletter.

~Maureen Donohue

Letters to the Editor

Rick I just read your column in the dept newsletter. Very entertaining and insightful. I agreed with both lists, with one exception. Desflurane. When used to its maximum efficacy, I would rank it equally or ahead of Sevoflurane. It cannot be matched by the other two agents for clearance and emergence. Especially important for elderly patients and others in whom minimal after-effect is desired. Personally, I use sevoflurane for 100% of my patients who receive inhalational agents, however after the induction and securing of the airway, I nearly always switch to isoflurane (pediatric patients and some adults) or desflurane (most adults). I have also found that very gradually reducing the inspired concentration at the end of the case, as opposed to just turning it off, is important in assuring the patient doesn't cough. These are of course, just my observations, but since they are different from yours (and we usually agree on things), I thought I would share them with you.

Mark A. Singleton, MD
Adjunct Clinical Professor of Anesthesia
Department of Anesthesia, Perioperative and Pain Medicine
Stanford University
Group Anesthesia Services
Los Gatos, CA

Dear Rick,

I loved your top ten and top five list. I would like to suggest a modification of # 9 in the top 10 list to include intraoperative TEE as part of ultrasound. I had an interesting case in 2007 in OB where TEE might have made a slight difference in the patient's outcome. I realize that they use TEE routinely at Stanford in OB, but I work in a little small community hospital.

Best Regards,

Mark S. Shulman, M.D., Program Director
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In Reply:

I appreciate the Letters to the Editor regarding my recent column, "*Advances in Past 25 Years: Top-10 Most Useful and 5 Most Overrated.*"

Regarding Dr. Larson's letter, I omitted the wonderful discovery of pulse oximetry only because it was developed more than 25 years ago, and didn't make my cut-off for the time frame of this column. Dr. Larson was my original teacher and tutor for both endotracheal intubation and fiberoptic intubation, and I empathize with his assessment that the ASA Difficult Airway Algorithm (ASADAA) is "complex, diffuse, multi-dimensional, and all-encompassing such that it is not an instrument that one can easily adopt and practice in the clinical setting." The system of Plans A–D, included in the *Anesthesiologists Manual of Surgical Procedures* by Richard Jaffe et al., is a terrific approach to difficult airway management. I love the cascade of Plan A (direct laryngoscopy), followed by Plan B (video laryngoscopy), and then Plan C (intubation through an LMA with a fiberoptic bronchoscope) as needed for difficult intubations. I agree with Dr. Larson that difficult airways present so infrequently that a practitioner needs a short list of procedural skills that he or she is expert at, rather than a large array of procedures that they rarely use. It's wise for anesthesiologists to regularly hone their techniques of video laryngoscopy and fiberoptic intubation via an LMA on patients with normal airways, just to remain expert with these

Letters to the Editor

skills. Although the ASADAA may be too vast for most anesthesia providers to recall during an airway emergency, it remains an outline of the standard of care, and will be reviewed in the aftermath of any airway disaster. If you have an adverse outcome in an airway disaster and you've strayed far from the ASA Difficult Airway Algorithm, you may be vulnerable in the medical-legal arena.

Dr. Singleton's letter supports the value of desflurane for maintenance anesthesia, and demonstrates how each respected and honored individual colleague will have his or her own combination of anesthetic agents that result in prompt awakenings and safe outcomes. I understand that some anesthesiologists prefer desflurane, some prefer sevoflurane, and some still prefer isoflurane. That's the art of our profession. We paint our anesthetics with the brush and colors of our choice.

Regarding Dr. Shulman's letter, I agree that the use of intraoperative transesophageal echocardiography (TEE) by anesthesiologists was an important advance. Although TEE has become predominantly a subspecialty skill of cardiac anesthesiologists, Dr. Shulman's case reports document the value of TEE in non-cardiac anesthetics as well.

Rick Novak, MD

