RICHARD MAZZE, MD: RESEARCHER, BUILDER, AND LEADER EXTRAORDINAIRE BY PATRICIA ROHRS

When asked, “Why did you choose medicine,” Dr. Richard Mazze, who just concluded his stellar 50-year career in anesthesiology, replied with a twinkle and a shrug, “I was a Jewish kid of immigrant parents, growing up in New York City—it was in my DNA.” Adds Dr. Mervyn Maze, Mazze’s first cousin, “Dick aspired to be a professional. What could be nobler than becoming a doctor—the first doctor in the family?” Colleagues agree that Mazze succeeded at the highest level. Drs. Kevin Fish and Jeff Baden wrote, “Today, Dick is one of the most highly respected figures in American anesthesia,”† and Dr. Steve Howard added, “Unlike other faculty, he brought a sense of history to the field—how anesthesia had been practiced with less technology, how it was practiced in the military, and how his research changed anesthesia practice. His personality and energy make him unique. It is an energy he still has today. He makes you feel comfortable, and that is very special.”

Education, Training, and Military Service—Born in New York City in 1934, Mazze earned his BA from Columbia University, New York City in 1955 and his MD from the State University of New York (SUNY), Downstate Medical Center in 1959. In 1958, there was still a “Doctor Draft,” so while still in medical school, Mazze joined the Army Reserves as a 2nd Lieutenant. As a medical student, he began his research career studying pulmonary function in patients with pulmonary eosinophilic granuloma (Mazze et al. Dis Chest 1961;39:140-150). He continued his training in the army, doing his internship at Brooke General Hospital in San Antonio, TX and subsequent anesthesiology residency (completed in 1963) at Walter Reed Hospital in Washington, DC, where he gave his first anesthetic to a patient in July 1960.

Profile: Richard Mazze, MD
From the Chairman
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While an intern, Mazze changed his career pathway from surgery to anesthesiology. When Mazze’s mother heard that her son had decided to become an anesthesiologist, she exclaimed, “For that you had to go to medical school?” Her notion was that a ‘real’ doctor opened a practice and hung out a shingle on the front lawn with his name on it! Despite evidence to the contrary, as his reputation in the profession grew, she never quite got over her disappointment.

Between 1964 and 1968, Mazze served as Chief of Anesthesia at US Army hospitals in Landstuhl, Germany and Phoenixville, PA and as Assistant Chief at Walter Reed Army Hospital. He left the Army in 1968 having attained the rank of Lieutenant Colonel.

Kindling Research and Leadership—Mazze’s fascination and talent for research was evident during his residency. During a one-year fellowship with Dr. Kevin Barry, Mazze studied mannitol’s effect on preventing and treating acute renal failure in surgical patients. He also studied the effects of halothane on renal function during anesthesia and surgery (Mazze et al. Anesthesiology 1963;24:275-284). Later, at Walter Reed, he reported succinylcholine-induced hyperkalemia in traumatized casualties returning from Vietnam (Mazze et al. Anesthesiology 1969;31:540-7).2 According to Mervyn Maze, Chair of Department of Anesthesiology and Perioperative Care at UCSF, what makes Mazze such a brilliant researcher is his inquisitive, open mind. “He followed his nose, did not entertain preconceived notions, and worked outside his comfort zone.”

Founding a Lab and Publishing Prolifically—In 1968, Mazze was recruited to Stanford as Assistant Professor by Dr. John Bunker, the Department of Anesthesia’s founding Chair. Because research space was unavailable at Stanford and the Palo Alto VA had a new research building, Mazze moved to the VA and never looked back. “Many viewed the VA as Stanford’s sleepy little sister—an assignment there was to be endured until one could relocate to Stanford. Mazze never bought that characterization.”3 Instead, he launched the Mazze Lab, where his “toxicity and pharmacology discoveries, spanning many years, drove development of new anesthetic drugs and new approaches to practicing anesthesia.”4

In 1971, Mazze and colleagues Jim Trudell and Michael Cousins published a landmark paper, detailing the relationship between the volatile anesthetic, methoxyflurane and its metabolism to inorganic fluoride, a potent nephrotoxin (Anesthesiology 1971;35:247-52). According to Mervyn Maze, “Dick Mazze single-handedly took on the pharmaceutical industry, the AMA and the FDA to remove a dangerous anesthetic from clinical practice. He proved that a popular drug was toxic to the kidneys. When others didn’t believe his data, he undertook additional studies to further prove his conclusions, overcoming significant criticism from very powerful people. He didn’t cave in.” So significant was this study that it was republished in Classic Papers Revisited (Anesthesiology 2006;105:843-846).5

Other methoxyflurane toxicity studies followed:
(1) Renal dysfunction associated with methoxyflurane anesthesia: a randomized, prospective clinical evaluation (Mazze RI, Shue GL, Jackson SH. JAMA 1971;216:278-288) and

For the remainder of Mazze’s career, even as he moved into leadership positions, he studied the toxicity of volatile and gaseous anesthetic agents, OR pollution from waste anesthetic gases (Anesthesiology 1980;52:248-256 and Anesthesiology 1985;62:226-228), and reproductive outcomes of anesthesia during pregnancy. A classic is Mazze’s Swedish health registry study with Bengt Kallen of 5,405 women having non-obstetrical operations during pregnancy, demonstrating no effect of first trimester anesthesia (Amer J Obstet Gynecol 1989;161:1178 85).6 Overall, Mazze published 137 scientific articles and 28 books and book chapters. Mazze cont’d page 5

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2 ibid.
3 “Palo Alto Veterans Affairs Hospital, The Rebuilders” by Mitzi Baker, Stanford Anesthesia, 2010-2011
5 ibid.

The Gas Pipeline, February 2012, Page 2
As 2012 has begun, it’s appropriate to review the current state of the department’s missions of clinical care, education, and research and to look ahead to changes we expect to occur over the next few years.

Clinical Care—In part fueled by additional recruitment of surgeons, our clinical activity has expanded; in fact, we have consistently grown at 5–10% per year throughout the past decade. As an anesthesia department, our once small faculty has grown to over 150 anesthesiologists at our four hospitals. Our clinical growth has allowed increased subspecialization in anesthesia, which I believe is a positive step towards improving patient care. Last year, we created a departmental committee on quality, effectiveness, and patient satisfaction, which continues to address important issues for the department and for our patients. This year, via the STORM project, in conjunction with the Renoir consulting group, we have addressed improved efficiency in OR processes. Already we have increased first case in-room times from under 20% to over 80% of the scheduled time. Although greater efficiency will help accommodate larger clinical volume without adding staff, our volume has already outgrown our residency size. We plan to further expand attending coverage in the afternoon and evening, and we are discussing expanding our use of CRNAs to allow continued clinical growth. Later in 2012, we will open operating rooms at the Byers Eye Institute in Watson Court, and over the next few years, additional ones at the Redwood City Outpatient Surgery Center. Both Stanford and Packard Children’s hospitals’ construction of their new hospital towers are on schedule. When all of these facilities have been built, our anesthetizing locations will have doubled.

Residency Education—Under Alex Macario’s leadership, we run what I consider to be the best residency program in the country, and we recruit the best residency classes. Each rotation’s specific curriculum, goals, objectives, and dedicated faculty focuses residents’ clinical experiences. This year we added subspecialty rotations such as urology and orthopedic surgery. Our two, echocardiography rotations have been highly successful at expanding our residents’ skills. Whereas Stanford remains a leader in using transthoracic echo in the ICU, we are expanding its use to the full perioperative continuum, including preoperative assessment and PACU. Thanks to Dr. Larry Chu’s leadership, we also continue applying innovative information technology solutions across the residency and the Department as a whole. Next year, for example, our residency curriculum will be iPad-based. Simulation-based learning remains an integral and expanding part of our educational programs; 20 faculty are engaged in developing simulation programs for adult and pediatric anesthesia. This year we introduced the Evolve program, a multi-year simulation-based curriculum for anesthesia residents transitioning into supervising anesthesiologists. Please read about it in Alex Macario’s column.

Research Success—Our research successes have moved the Department into third place in the most recent NIH rankings of anesthesia departments, a dramatic improvement from a decade ago. During 2011 we received over $30 million in new NIH grants; I am optimistic we will move even higher next year. More important than rankings alone is that our basic and clinical research is designed to answer important questions. Our grants cover the entire spectrum—from the T32 training grant run by Rona Giffard, to junior faculty grants such as the recent
K99/R00 grant to Eric Gross, to the traditional R01 grants given to multiple individual faculty, and finally to the large program project-type grants such as the $15 million P50 grant to Sean Mackey and a group of pain researchers. Our FARM (Fellowship in Anesthesia Research and Medicine) program has been extremely successful in attracting the next generation of anesthesia researchers into our residency program. We mentor them and foster their career development throughout residency, fellowship, and the transition to faculty.

I want to thank all the members of the Department who, each day, contribute to our continuing success. I hope that 2012 will be a successful year for each of you.

RESEARCH SUCCESSES
BY RONA GIFFARD, MD, PHD AND MICHAEL HELMS, PHD, MBA

The Stanford Department of Anesthesia leapt from 12th place in 2010 to 3rd place in 2011 in NIH funding of national anesthesia departments, signifying a highly successful year for research. This astounding jump reflects our talented department’s winning of several large, highly competitive awards:

- Sean Mackey was awarded a Program Project Grant, Stanford CAM Center for Chronic Back Pain, from the National Center for Complementary and Alternative Medicine (NCCAM), a center within NIH. This five-year award will provide $17.4 million (total costs), plus a $400k supplement. The project’s ambitious goals are to characterize the mechanisms of three complementary/alternative medicine interventions for chronic, low-back pain—fMRI neurofeedback, mindfulness-based stress reduction and cognitive behavioral therapy, and verum acupuncture. The high-powered, multidisciplinary team includes Drs. Sean Mackey, Jarred Younger, and Jiang-Ti Kong from Anesthesiology, Michael Greicius from Radiology, James Gross and Philippe Goldin from Psychology, Rachel Manber from Psychiatry, and many others. We congratulate Sean and the outstanding team he has assembled.

- Eric Gross, Instructor and Research Fellow; Jerry Ingrande, Instructor; and Kevin Johnson, Fellow each received a career-development award crucial for building skills, getting published, and being better positioned to compete for further funding. Gross received a K99/R00 career development award from NHLBI entitled Role of the TRPV1 channel in myocardial salvage from ischemia—reperfusion, mentored by Daria Mochly-Rosen. Ingrande received a K23 career development award from NIGMS entitled Adiponectin polymorphisms, insulin resistance and pharmacokinetics in obesity, mentored by Harry Lemmens. Johnson received a K23 award from NIDA entitled Research training using TMS to study pain processing in long-term opioid use, mentored by Sean Mackey.

- Larry Chu and Bruce MacIver each received an R01 grant. Chu’s R01 grant is his first, representing a milestone in his career. Funded by NIDA, Chu’s study is entitled 5HT3 antagonists to treat opioid withdrawal and to prevent the progression of physical dependence. Funded by NIGMS, MacIver’s study is entitled Anesthetic actions on GABA-A fast, slow, tonic and GABA-B receptors.

We celebrate these successes and applaud the awardees for their significant work, which includes data that often take years to collect and publish.

We expect more good news during 2012. Dr. Jarred Younger will receive an investigator-initiated research award from the Department of Defense’s Congressionally Directed Medical Research Programs (CDMRP) and Gulf War Illness Research Program (GWIRP). His project is entitled Identifying immune drivers of Gulf War Illness using a novel daily sampling approach. In addition, many of our faculty have applications currently under review.

Our FARM program, designed for anesthesia residents who intend to pursue academic careers,
continues to succeed. A great example is fellow Eric Gross, who completed his residency in June 2011, and is now doing his research fellowship. He won the K99/R00 award mentioned above while still a resident, setting a high bar for upcoming FARM fellows to follow!

Finally, on April 30, 2012, we look forward to our annual research awards dinner, an event designed to present all research groups’ poster abstracts in both new and established areas. Dr. Mervyn Maze, Chair of the Department of Anesthesia and Perioperative Care at UCSF, will be research guest evaluator, attending poster sessions and discussing the research with contributors.

RICHARD MAZZE, MD, CONTINUED

Serving as Anesthesiology Service Chief (1972-1987)—In 1969, the year after joining Stanford’s faculty, Mazze was appointed Acting Chief of the VA’s Anesthesiology Service. In 1972, concurrent with being promoted to Associate Professor at Stanford, he was appointed VA Service Chief. He became Professor in 1977 and continued to serve as VA Chief until 1987. During his 16-year span as VA Service Chief he grew the service to 40-50 members, building a research powerhouse, a center of teaching excellence, and a flagship clinical service providing exceptional patient care. He also served as an editor of Anesthesiology between 1979 and 1986.

Building a Research Powerhouse—Mazze’s reputation as a prolific researcher and mainstay of the institution enabled him to recruit colleagues to the VA who became a veritable Who’s Who of anesthesia: Drs. Michael Cousins, David Gaba, Mervyn Maze, Steven Shafer, Donald Stanski, and other investigators, clinicians and teachers, such as Drs. Jeff Baden, Kevin Fish, Mas Fujinaga, Ben Hitt, Steven Howard, Susan Rice, Frank Sarnquist, and Audrey Shafer. Research exploded. Steven Shafer and Stanski focused on pharmacokinetics, Maze on receptor mechanisms, Baden on anesthetics as hazards to OR personnel, Gaba on simulation of patient emergencies, and Gaba and Howard on patient safety and fatigue among medical workers.7

According to Michael Cousins, Department Head of Anesthesia and Pain Management at the University of Sydney and Director of the Pain Management Research Institute at the Royal North Shore Hospital, his four years (1970-1974) as Mazze’s research partner were among the most productive years of his career. Baden recalls, “In 1975, after meeting Dick to discuss his research and the favorable clinical and academic environment at the VA, I agreed to join his team—one of the best decisions I made during my career. I already knew he was an excellent scientist. What I did not know was how great he was as a mentor and how wonderful a colleague and friend he would become. Dick taught me not only how to design and execute individual experiments but also how to accomplish multiple other skills—writing, presenting work, and running a basic research lab—needed to run a successful research program. Together, we wrote more than 30 scientific papers and many more articles and book chapters.”

(Baden and Mazze ran the Clear Lake Marathon in 1981; both finished with < 8 minute miles; Baden beat Mazze by eight seconds!)

Fish adds, “Dick Mazze had enormous influence on my career. Without his taking a personal

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interest in me, recruiting me to the VA, involving me in research projects and helping me improve my scientific writing, I would not have stayed at Stanford. His mentoring was crucial to my development.” From Mervyn Maze’s perspective, “Dick’s fairness and transparency, together with a fair amount of cajoling, facilitated each [researcher’s] climbing the ladder to dizzying heights.”

**Creating Conditions for World-Class Clinical Care**—In the early 1970s, the Anesthesia Service had two staff anesthesiologists and four house staff, one on loan from the Surgical Service. Surgery “repatriated” its house-staff doctor whenever one of its residents was away. As Service Chief, Mazze recruited top clinical talent—Drs. Frank Sarnquist, Jeff Baden, Kevin Fish and many others—and obtained dedicated Stanford anesthesiology residents. Sarnquist served as Chief of Anesthesiology Clinical Services 1976-1986, Baden as Anesthesia Service Chief 1987-1997, and Fish as Anesthesia Service Chief 1997-2009.

According to Sarnquist, the VA nurses and surgeons felt that the Anesthesia Service favored research over clinical service. “Since research was secondary for me, it was easy to be a constant and reassuring clinical presence in the OR and to make clinical care more attentive and visible to surgeons, nurses, and patients.” Continued Sarnquist, “Dick Mazze was the ideal mentor. He left us alone to manage the clinical service, but taught us to deal with intractable problems, live comfortably within the VA system, and succeed in the Stanford academic system. Mazze tirelessly taught us to lead by leaning—be at the table at all tedious, bureaucratic meetings, and keep leaning on an issue, gradually bending it your way.”

**A Critical Juncture**—Mazze stepped down as VA Service Chief in 1987 and became Associate Chairman of the Stanford Department of Anesthesia, primarily to direct research programs. In 1989 the Loma Prieta earthquake destroyed much of the VA hospital, an event that coincided with Mazze’s asking himself, “What’s next in my career?” He had succeeded at a highly productive research career and at leading and growing the VA Anesthesiology Service into a major research and clinical unit. However, research in the specialty had advanced in such areas as cell signaling. As Mazze weighed whether to retrain for new research areas, the VA’s Chief of Staff died suddenly. The answer to “What’s next?” was that the VA Director and the Stanford Dean chose Mazze to succeed the deceased Chief of Staff in this powerful position.

**Turning Tragedy into Opportunity as Chief of Staff (1990-97)**—Fondly dubbed “King Richard” by his colleagues, Mazze’s initial challenge after the quake was “getting the government to dig a hole,” so that it would be committed to rebuilding the earthquake-damaged complex. Congress did indeed appropriate $180 million to construct a new hospital, and the hole got dug.

As a politically connected, astute team player, Mazze’s stellar accomplishments as Chief of Staff quickly mounted. As a major force, Mazze and the Anesthesia Service played a large role in designing and building a state-of-the-art medical center. Mazze was also responsible for significantly improving patient care across the hospital. Perhaps most importantly, he formed an interdisciplinary medical-surgical intensive care unit (MSICU), combining the former hospital’s medical ICU (directed by Pulmonary Medicine) and surgical ICU (directed by Surgery) under the leadership of an anesthesiologist/intensivist, Dr. Eran Geller. Dr. Audrey Shafer credits Mazze as “key to the growth of our clinical care beyond the walls of the operating suite…. By combining the
two ICUs, Dr. Mazze ensured that all of our critically ill patients received state-of-the-art care, and by selecting an anesthesiologist to head this interdisciplinary team, Dr. Mazze extended the scope of our clinical care responsibilities and raised the visibility of our oft-hidden profession.” Another of Mazze’s major, enduring accomplishments was supporting the development of one of the premier, award-winning, cardiovascular surgery programs in the entire VA system. For example, when Mazze appointed three, full-time CV surgeons to replace several intermittent ones, CV patient care immediately improved.

Dr. David Gaba, now Associate Dean Immersive and Simulation-based Learning and Director, Patient Simulation Center of Innovation, VA Palo Alto Health Care System credits Mazze as “instrumental in creating the first simulation center in 1995.” When Gaba learned no space was available on the Stanford campus, Mazze found him a vacated, temporary building at the VA campus. In 1998 the simulation center moved to the new VA hospital, and, in 2010, to the Stanford campus’ Li Ka Shing Center for Learning and Knowledge. Says Gaba, “Without Dick’s influence, simulation might never have taken root at Stanford.”

Over time, Mazze oversaw a complex, three-division health care system and six, community-based outpatient clinics and as Associate Dean for Veterans Affairs led the ongoing collaboration in research, clinical care, and graduate medical education with the Stanford School of Medicine. The Palo Alto VA hospital’s reputation grew in stature, and has continued to do so.

Commenting on Mazze’s leadership qualities that advanced this growth, Fish said, “His administrative leadership came at a critical time in health care. He transformed the Palo Alto VA forever into an outpatient-oriented facility, positioning us as a leader in national, health-care trends and cost-efficient delivery of health care. This transformation was not achieved without a lot of effort, and a few people were upset with him. However, his energy and enthusiasm carried the day, and the facility is now widely recognized as the best VA hospital in the nation.” Dr. Mervyn Maze added, “Mazze is above all a man of integrity, fairness, and transparency. He is skilled at tactics and the art of compromise. His ability to work collegially beggared belief. He never asked someone else to do something he wouldn’t do himself. As leader he set aside his self-interests, so that he could promote the interests of his colleagues.”

This recognition is due in part to Mazze’s feel for veterans. As a veteran himself, motivated by service and esprit de corps, he sensed what veterans need and deserve. “I am proudest of having developed, with the help of good people, the VA Anesthesia Service and VA hospital into the fine organizations they are today.”

The Legacy—Since the new hospital opened in 1997, the Anesthesiology Service’s clinical, training, and research environments have expanded under the leadership of Drs. Kevin Fish, Audrey Shafer, and Ed Mariano. The Stanford-staffed Service is now considered one of the best in the VA system nationwide. As dramatic, system-wide changes have occurred throughout the system’s 160 hospitals nationwide, the Palo Alto VA has become its flagship, recently receiving the Carey Award for its excellent performance in patient care, patient satisfaction, quality, safety, and business practices.

Another part of Mazze’s legacy is his advice to newly minted anesthesiologists: “Follow your passion; don’t worry too much about money. If academic medicine is your interest, go for it! For you to know that your research has contributed to saving patients’ lives and that your teaching has enabled new physicians to better care for patients has value beyond what money can buy.”

Family—When Richard Mazze and Sheila Cohen (then a visiting clinical assistant professor from England) first saw each other on the Stanford Hospital’s escalator, Mazze was smitten. Later, as first call working on a heart case, Mazze asked Cohen, who was second call, for help. The heart case soon turned into a case of the heart.
Since their marriage in 1975, their lives have been enriched by being best friends and by pursuing complementary, international anesthesia careers. Cohen says, “It’s been a joy to share and mutually support each others’ careers, including our shared belief that we make our greatest impact by nurturing others. Together, we have had an extraordinarily exciting, international experience—visiting over 40 countries, speaking at the same meetings, taking several sabbaticals in Paris, and most of all, making friends, all over the world. We are grateful for the richness of our professional and social connections.”

Together, Mazze and Cohen have four children, seven grandchildren and two step-grandchildren. The children have this to say: “Four things stand out about our father’s influence on us: an extraordinary work ethic, an abiding intellectual curiosity, enduring optimism, and a commitment to bringing the family together. Our earliest memories … are of him sitting in his study after dinner, working. We can’t recall a weekend that he didn’t go into the lab or the hospital, unless we were on vacation. He worked hard, so we worked hard. Our father is also remarkable for his intellectual vibrancy. He took astronomy and geology classes at Foothill College. He studied French, Italian and Spanish and traveled the world. He took up sailing, bowling, tennis, skiing, running, biking and golf and remains an avid Stanford sports fan.

He adopts new technology, he is always immersed in a book, and he gets totally absorbed in electoral politics. His youthful, intellectual energy sets an inspiring example. Dad’s outlook is positive, and he appreciates the good life. He proclaims that a given meal, glass of wine, or visit is the best he’s ever experienced. He telephones his children from spectacular vistas to share his joy. He insists our health will be fine, regardless of diagnoses. Indeed, when anyone in the family faces challenges with work, health, and personal life, he believes in an eventual positive outcome. This optimism encourages us to share his optimism, to see the bright side. Finally, our dad has created a family legacy of close relationships. He and Sheila host annual family reunions around the country and attend family events. Grandchildren-cousins are friends; families are close, despite dispersed geographies. These four traits set examples we intend to emulate with our own children and grandchildren.
A new report by the Institute of Medicine reveals that more than 100 million Americans suffer needlessly from chronic pain. The condition costs the United States about $600 billion each year in medical expenses and lost productivity. The report, titled “Relieving Pain in America” was prepared by the IOM’s Committee on Advancing Pain Research, Care and Education chaired by Philip Pizzo, MD, dean of the Stanford School of Medicine. The 19-member committee was made up of physicians from several medical specialties, researchers, educators and patients, including Sean Mackey, MD, PhD, chief of Stanford’s Division of Pain Management.

The group met for more than a year to prepare the report, which was mandated by Congress and supported by the National Institutes of Health. Pizzo was recently interviewed for a “1:2:1” podcast about the report’s call for a cultural transformation in how our society views and treats chronic pain. The following is adapted from that conversation.

Q: What does it mean that chronic pain can become a disease in its own right?

Pizzo: In people with chronic pain who have no other evidence of a trigger for their pain, such as cancer for example, we can demonstrate that there are neurological changes that take place. For example, we can see changes in the brain on imaging studies that give evidence to the fact that there is really an organic basis for this.

Let’s say you’ve got cancer. Everybody understands that you’re going to have pain in association with that, and so there’s a lot of empathy and compassion. But if you don’t have an underlying disease, there are various perceptions around whether it’s a true manifestation or just hysteria.

This has had a big impact on individuals suffering from pain, because they find that there are not people they can go to who are really sensitive or acknowledging that they truly have difficulty, that it is organic and that it is impacting on their life.

Or the insurance industry says, “We’re not going to pay for these things because it really doesn’t represent a true disorder.”

Q: What is it about our culture that suppresses the treatment for pain? Is the war on drugs and the increase in prescription drug abuse a hindrance to the treatment of chronic pain?

Pizzo: There’s no question that opioids are abused by some portion of our population, many of whom don’t have pain at all.

There are individuals for whom opioids are therapeutic and make a tremendous difference, but the societal impressions of drug abuse are now affecting physicians’ willingness to prescribe the medication, and the states’ willingness to allow physicians to do so.

These are the cultural assumptions, perceptions, assessments that we feel need to be really radically reassessed.

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8 Source: http://med.stanford.edu/ism/2011/july/5q-pizzo-0711.html
Q: Can you summarize the highlights of the committee’s recommendations?

Pizzo: We made 16 recommendations, but there are four that we would like to see implemented by 2012. We begin by saying that we charge the secretary of Health and Human Services to develop a broad public health approach to the management of pain on a population basis. The Affordable Care Act is now paying a lot of attention to how to manage populations. We say that to manage pain in individuals requires a cultural transformation that will lead to a much broader template of activities, and it can’t be accomplished by just looking at one component. You need to pull together all of the public agencies, from HHS and NIH and other governmental bodies at the federal and state level, together with advocacy groups and public foundations and the like to create this interactive template.

The second recommendation is to assess and address the barriers that impact the delivery of pain treatment. This has much to do with who’s providing it, what the understanding and knowledge about pain is, and, quite honestly, what some of the funding sources are. As a case in point, there may be an easier way of getting a pain-relief procedure paid for than what might be a more evidence-based, simpler approach like physical therapy. Those are barriers that we need to overcome.

The third is to really address the issue of who’s going to deliver pain treatment. There are only 4,000 pain specialists in the United States. There are just not enough of them to do it. We need to help educate and empower primary care physicians, as we also help individuals to engage in self-management.

The fourth of those recommendations is to say that there should be an accountable institute at the NIH that’s responsible for pain.

The other 12 recommendations are also important, and we state in our report that they should be implemented by 2015 or earlier. Some of them are directly connected to the four that I’ve mentioned, and they weave together in a picture that defines how we would approach pain from the point of view of prevention, care, education and research — the force underpinning portions of what we think will be the cultural transformation that’s needed.

Q: What are some of the gaps in research?

Pizzo: There certainly has been a lot of knowledge gained in recent decades, but there are very fundamental things that we simply don’t know. We know a bit about how neuropathic pain arises, but we have limited ways of being able to measure it. We’re still using qualitative pain scores. We need much more specific biomarkers that would allow us to assess pain and be able to ground it on a much more biologically definable basis.

We have big gaps in our knowledge in terms of the approaches to pain and treatments. We’re using medications that are, in some cases, hundreds of years old, opioids being an example. We need new classes of therapies, new approaches to understanding what the appropriate receptors are, and defining new ways to really treat and intervene. Equally importantly, we need much better ways to prevent pain. If we know one thing, it’s that acute pain, untreated, can ultimately lead to chronic pain.

Figuring out how to identify the individual who has acute pain and who’s more vulnerable to go on to get chronic pain, and understanding what specific interventions could deal with that is a very important challenge.

Q: What’s your own experience with pain? What did you bring of your personal insight to this committee?

Pizzo: For decades I’ve lived with someone who has suffered chronic pain that began with a musculoskeletal problem and has persisted to affect this individual’s life every single day. I’ve witnessed all the limitations of our medical system, and its inability to really deal effectively with this disorder. And how that can blunt an individual’s ability to achieve the kinds of things that she or he may really want to be able to do but is unable to do.

So pain takes a toll, and I’ve witnessed it in the patients I’ve cared for, in my own personal life and, in particular, in the lives of members of my family.
Every year doctors diagnose patients with gastrointestinal disorders, including irritable bowel syndrome, chronic pancreatitis, and functional dyspepsia. These disorders can cause hard-to-treat chronic pain that leads patients to despair. To help patients who suffer from GI-induced chronic pain, Stanford Hospital and Clinics (SHC) created the innovative Gastrointestinal (GI)-Pain Program, in which Stanford’s GI and Pain specialists collaborate to improve patients’ quality of life and restore their hope.

Why do patients experience GI pain?

According to Linda Nguyen, MD, Director of GI Motility and Neurogastroenterology in Stanford’s Division of Gastroenterology, “the causes of GI pain are complex, but they can be crudely grouped as “organic” or “functional.”

Visceral hypersensitivity (pain within the inner organs) is functional GI pain that may result from acute, organically-caused injury, such as gastroenteritis. Although the acute injury has resolved, hyperalgesia (greater than normal sensitivity to pain) results from increased transduction from the peripheral enteric neurons and central sensitization from increased excitability of dorsal horn neurons. Pain thresholds are lowered, and patients experience pain.

Ravi Prasad, PhD, Director of Stanford’s Comprehensive Interdisciplinary Pain Program, adds, “Chronic GI pain may have multiple known causes, but the pain is exacerbated by the stress pain induces. When stressed, the body’s sympathetic nervous system automatically activates, increasing muscle tension, constricting blood vessels, increasing heart rate, and disrupting the GI system. These pain-stress reactions trigger a vicious, chronic pain cycle.’’

Why is chronic pain so hard to treat?

According to Nguyen, chronic GI pain, especially functional pain, is difficult to treat. First, because patients with visceral hypersensitivity experience pain that cannot easily be objectively measured, they are often told their symptoms are “all in your head.” This misconception impairs the therapeutic, patient-physician relationship—the key to treating any chronic condition. Second, patients with chronic GI pain also frequently suffer from other, difficult-to-treat comorbidities, such as depression, anxiety, fibromyalgia, and migraines. These comorbidities and the risks of drug interactions also present a therapeutic challenge. Third, opioid treatment, commonly prescribed for chronic GI pain, can cause hyperalgesia, in turn causing narcotic bowel syndrome, an under-recognized condition. “Finally,” says Nguyen, “we have learned from our pain colleagues that chronic pain is its own complex disease with physiological and psychological components. The longer someone has pain, the harder it is to control and the greater pain’s psychological impact. For example, half of the patients who come to me with chronic GI pain will also experience anxiety and depression because of that pain. And we know that very common disorders like irritable bowel syndrome are made worse by that anxiety and depression.” Thus these patients, states Prasad, “feel stuck in a chronic pain cycle they don’t understand, and they feel helpless.”

Who should be referred and when?

Prasad says that before entering the GI-Pain Program, a patient’s life may be fraught, not only because of pain; decreased involvement in social, occupational, and leisure activities; sleep disruption; and high emotional distress, but also because exhaustive medical work-ups, procedures, and medication trials have failed to identify the pain’s exact etiology, and the pain continues unabated. In other cases, a clear cause may be
Both Nguyen and Prasad agree that patients should be referred as soon as their physicians have identified failure to respond to treatment within an expected timeframe. They note that the literature suggests that the sooner a patient gets referred, the more effective treatment can be. Prasad says, “Although much of this research has focused on injured workers, early intervention would probably yield the same benefit for non-industrial cases.” Nguyen adds, “Any patient with longstanding GI pain that impacts quality of life should be considered for referral. In particular, patients with comorbidities, patients grossly de-conditioned with suspected myofascial pain, or patients who have failed medical therapy will benefit the most from the GI-Pain Program’s multidisciplinary team approach.”

What is the treatment model in the GI-pain program?

Patients often arrive in the program feeling helpless. Because chronic GI pain impacts a patient’s control over essential daily activities such as eating and defecating, patients often arrive in the program feeling defeated. The GI-Pain clinical team aims to reverse these feelings. The team consists of a pain physician, a GI physician, a pain psychologist, and a physical therapist, each of whom performs an initial evaluation. Then they confer, collaborate, and coordinate a comprehensive, multi-disciplinary treatment approach for each patient. The approach integrates psychological mind-body therapies (cognitive behavior therapy, hypnosis and meditation), physical rehabilitation, pharmacology, and new procedural treatments, such as nerve blocks, that control specific nervous system targets. The team does not necessarily focus on fixing the pain condition; rather, it seeks to minimize impairment and maximize greater quality of life. An invaluable first step is educating patients about the cycle of chronic pain (its biological, psychological, and social factors) and teaching them strategies to help break the cycle. Nguyen highlights how this treatment model has helped her become a better physician. “As subspecialists, we frequently read literature only within our specific field.” In the program, she says she has gained immense pain knowledge applicable to all of her patients, not just to those in the program. She feels her role on the team is to help establish a diagnosis, so that therapy can be tailored according to what is known about a patient’s underlying pathophysiology. By sharing her expertise with pain clinicians and incorporating what she has learned from them, she feels she has gotten her closer to her goal of positively affecting her patients’ lives. In the same vein, Prasad emphasizes that pain clinicians have learned much about GI disorders from the collaborative approach, and they feel gratified by being able to offer GI patients contemporary pain care.

Patients leave the program more in control. Instead of feeling, “It will never get better” or “It’s all in my head,” they have embarked on recapturing their quality of life.

What can patients gain after being seen in the GI-Pain Program?

According to Prasad, patients gains understanding of the chronic pain cycle and learn helpful tools to break the cycle. Tools include optimized medication regimen that improves function and ameliorates pain; non-pharmacologic strategies to manage affective distress, physical pain symptoms, and general life stressors; and an exercise program to minimize the likelihood of becoming physically de-conditioned. “Pain is often reduced. It may not be eliminated, but patients re-engage in important life activities and feel less emotional distress. They recapture a better quality of life.”

Nguyen described a particular patient, a female college student, whose debilitating abdominal pain had caused her to drop out of school. Eating anything meant hours of agonizing pain that traveled around her abdomen and doubled her over, vomiting and exhausted. “I’d never had a pain like that,” said the patient. “It was random and completely unbearable. It happened day or night, and it didn’t seem to relate to anything.” After being treated in the GI-Pain Program, Dr. Nguyen’s patient reported her pain had decreased as a result of several nerve-block injections, although it did not vanish. From Nguyen’s point
of view, not only are her patient’s symptoms now less severe, but she copes better as a result of using the pain-management tools. Best of all, Nguyen’s patient has returned to college!

FROM THE DEPUTY CHIEF
BY RICK NOVAK, MD
ASSOCIATED ANESTHESIOLOGISTS
MEDICAL GROUP
rjinov@yahoo.com

Clinical Case for Discussion: You are an attending anesthesiologist in private practice, in your first year out of residency. Your schedule for the next morning includes a 60-year-old, 350-pound male with ankylosing spondylitis and congestive cardiomyopathy for cholecystectomy. You turn off the lights the night before at 10 p.m., and cannot fall asleep, as you are worried about the case. What do you do?

Discussion: During my first year in private practice, one of my senior anesthesia colleagues, ripe with gray hair and receding hairline, stood outside of his operating room at 7 a.m. I bid him good morning and he said, “It is a good morning, despite the usual anxieties that come with what I’m about to do.” I asked him to explain, and he said, “Every day I come to work knowing that something could go wrong, and my patient could be harmed, and it could change my life forever. That gives me anxiety, which I have to cope with every day.”

Anesthesia textbooks are thick with information on how to assess patients preoperatively, how to perform anesthetics, and how to manage postoperative medical problems. You won’t find much guidance on how to handle your own anxieties as an anesthesia provider.

What are chances that you will have a perioperative death during your career in anesthesia? In a recent published survey, 84% of anesthesiologist respondents had an unexpected perioperative death or serious injury of a perioperative patient during their career (Gazoni FM, et al, The Impact of perioperative catastrophes on anesthesiologists: results of a national survey, Anesthesia and Analgesia, Jul 7, 2011). A majority of these respondents indicated that they experienced guilt, depression, anxiety, sleeplessness, fear of litigation, fear of judgment by colleagues, anger, and reliving of the event. Five percent experienced use of drugs or alcohol and 12% considered a career change after the event.

During my 25-year career as an attending anesthesiologist in private practice, I’ve had two unanticipated patient deaths. Both were awful events for me, and had me reeling for some time. The first was a male in his 70’s for an open, abdominal aortic aneurysm repair. The case occurred at a local community hospital, six months after completing my Stanford training. As the vascular surgeon closed the abdominal incision, the patient went into pulmonary edema, dropped his cardiac output and arrested. The resulting unsuccessful CPR, followed by the conversations with the surgeon and the patient’s family, were gut-wrenching experiences. Because I was new at the hospital, I’m sure there were individuals who doubted my abilities and competence. The post-mortem diagnosis was myocardial infarction. The case went through peer review, my management was not challenged, and no one blamed the anesthesiologist. But I remember that one day after this patient died, my first patient was a sickly 90-year-old. If my hands weren’t shaking that morning, my confidence was.

The second death was an elderly insulin-dependent diabetic end-stage-renal-disease patient who was having an upper extremity arterial-venous fistula revision for dialysis access. At the conclusion of the case, I administered protamine to reverse the heparin, and the patient’s oximeter stopped beeping. Her automated blood pressure cuff readings became unobtainable. It took me several moments to figure out that she had no
discernable pulse either. Her only working monitor was the sinus rhythm on the ECG, and that soon deteriorated into ventricular fibrillation. We could not resuscitate her. The post-mortem assessment was anaphylaxis to protamine. This case occurred in the third year of my private practice career, and again it shook my confidence for a while.

Anesthesia practice can be lonely. During university training, each anesthesia resident has an attending to back him or her up and emotionally hold a hand through both easy and difficult cases. When you finish training and enter the next phase of your career, you have to work alone. In the middle of the night, you may be presented with an extraordinarily sick patient and you may be the only anesthesiologist for miles around. In some practices you will work in freestanding facilities, and again you will be the only anesthesiologist for miles around.

What about the Clinical Case above, where you are the first-year attending anesthesiologist who can’t sleep because you’re worried about the difficult airway, the morbid obesity, and the congestive cardiomyopathy in your patient for the next day?

What are solutions to the anxieties an anesthesiologist experiences? I’m no psychiatrist, but here’s my advice after having toiled in the anesthesia arena for 25 years:

1. You’re often going to feel anxious, and that’s normal. Expect it.

2. Learn as much as you can during your residency, so you emerge from your training with confidence. Not cockiness—”Man’s got to know his limitations,” as Dirty Harry famously said in Magnum Force—”but you need to be confident.”

3. If you’re truly worried or in over your head, remember how reassuring it was in residency to have an ally. Call another attending the night before for their opinion on a difficult case for the next day. Call for help before you start a challenging case regarding a difficult intubation or a complex anesthetic induction.

4. Cultivate a strong emotional support team of people, inside and outside of the hospital. You’ll need them.

5. If you run into ongoing insomnia, depression, or fear, seek professional help. It’s well-known that anesthesiologists are vulnerable to chemical dependence. Treating your own insomnia or anxiety with fentanyl or Versed or propofol will be a dead end.

The same anesthesia attending I referred to in the first paragraph once told me, “There are three ways an anesthesiologist can end his career. He can: 1) die in mid-career, 2) quit because he can’t handle the stresses of the job any more, or 3) walk away and retire on his own terms when he chooses to.”

Let’s hope each of us gets to choice number 3!

Editor’s Note: Rick Novak’s catalog of past Clinical Case of the Month Columns is available online at http://theanesthesiaconsultant.com

FROM THE RESIDENCY DIRECTOR

Alex Macario, MD, MBA
Residency Director, amaca@stanford.edu

I am pleased to highlight several Residency-related developments: faculty teaching scholars, the new Evolve simulation course for residents, a new Department post-graduate fellowship in global health, residents of the month, new chief residents, and pre-residency online training for interns.
2012 Stanford Anesthesia Faculty Teaching Scholars—The Faculty Teaching Scholars for 2012 will collaborate with Resident Teaching Scholars on innovative projects that will help take the training program to the next level. Dr. Pedro Tanaka has agreed to serve as Co-Director of this program.

- Carlos Brun (assisted by Resident Teaching Scholars Alex Quick & Lindsay Raleigh)
  Project: Transesophageal ultrasound curriculum

- Brendan Carvalho (assisted by Resident Teaching Scholars Javier Lorenzo & Luis Verduzco)
  Project: Transesophageal Echo curriculum for obstetric anesthesia

- Rosario Garcia (assisted by Resident Teaching Scholar Eric Mehlberg)
  Project: CA1 resident TEE rotation curriculum

- Calvin Kuan (assisted by Resident Teaching Scholars Christine Jette & Ethan McKenzie)
  Project: Multimodal curriculum for pediatric cardiac anesthesia

- Sam Lahidji (assisted by Resident Teaching Scholar Kingsuk Ganguly)
  Project: New pain management resident lecture series

- Jennifer Lee (assisted by Resident Teaching Scholar Morgan Dooley)
  Project: Wellness curriculum for residents not attending CA1 retreat

- Naiyi Sun (assisted by Resident Teaching Scholars Megan Olejniczak & Jared Pearson)
  Project: Web-based curriculum for pediatric neuroanesthesia

Evolve Simulation Course—Evolve is a new, enriched, Stanford simulation course aimed at helping anesthesia residents evolve into supervising physicians who can competently balance multiple priorities and roles. Drs. Sara Goldhaber-Fiebert and Ruth Fanning are co-directors of this new offering, which is unique nationally. Evolve amplifies the long-standing, three-year Anesthesia Crisis Resource Management (ACRM) simulation curriculum, by having each resident spend an additional one-half day per year in dedicated simulation time in groups of six. What is distinct about Evolve is that a blend of resident classes (CA1, CA2, and CA3) train together—a CA1, acting as a Resident may be paired with a CA2 or CA3 acting as an Attending, or a CA2 may similarly be paired with a CA3. As residents become more senior, they take on more supervisory responsibility within the three-year Evolve curriculum.

For all classes, the curriculum includes many of the ACGME competencies, emphasizing the application of medical knowledge, as well as communication, and leadership. An evolve patient case employs multiple simulation types—including patient actors and mannequins—exposing residents to challenging patient interactions.

The night before the course, participants review their patient’s chart (on EPIC) and make a preoperative plan. The next day, in pairs, the more junior resident (called Resident) presents the chart history and plan to the more senior resident (Attending). The Attending may modify the plan, addressing both patient care and education topics. Then each pair meets their human, standardized patient actor for a preop visit, consisting of making introductions, taking a history, performing a physical exam, and obtaining informed consent. Faculty-facilitated debriefings are interspersed throughout the course, and participants continuously process their experiences and contribute their thoughts.

Within the simulation scenarios, the Resident-Attending team may face complex pre-, peri- and post-operative clinical challenges, including difficult conversations with patients or families, while the Attending also focuses on two, key supervisory skills: teaching as well as juggling competing priorities.

Thanks are due to Dr. Ron Pearl and chief residents from 2010 and 2011 (particularly Drs. Erin Hennessey and Laura Downey), Dr. Ankeet Udani, and many others for their support of the new course.

Stanford Anesthesia Fellowship in Global Health—Dr. Ana Crawford has announced a new Department of Anesthesia post-graduate
fellowship in global health. Although tailored to a fellow’s background, the fellowship’s core components are listed next:

- Working up to 12 weeks in a low- or middle-income country that is medically underserved,
- Conducting a global health scholarship project, focused on improving infrastructure through improvements in medical education or on forming and answering an appropriate research question,
- Participating in a year-long, core curriculum of lectures and seminars available via Stanford’s Center for Innovation in Global Health [http://globalhealth.stanford.edu/],
- Performing OR clinical work as Attending one day per week (1-2 calls per month), and
- Attending the Global Health Outreach conference in Halifax, Nova Scotia or Kampala, Uganda, where fellows will learn to address the challenges of administering anesthetics in austere environments.

To obtain more information, visit globalanesthesia.stanford.edu. To apply, contact Dr. Crawford at ana9120@stanford.edu. Please note a California medical license is required.

Residents of the Month—Faculty selected the following residents during the last half-year: July, 2011, Laura Downey; August, 2011, Luis Verduzco; September, 2011, Ankeet Udani; October, 2011, Mary Laughlin; November, 2011, Becky Wong; December, 2011, Michael Marques; and January, 2012, Ring Liu.

Chief Residents—Drs. Jared Pearson, Catherine Reid, and Luis Verduzco have been elected as Chief Residents for the 2012-13 academic year. Please join me in congratulating them and thanking the current Chief Residents—Drs. Jay Jay Desai, Laura Downey, and Javier Lorenzo—for a job very well done.

Pre-residency Online Training for Interns—Finally, please read the next article, Online learning approach prepares doctors for Stanford residencies by Tracie White, which describes a program developed by Drs. Larry Chu and Kyle Harrison.

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Online learning approach prepares doctors for Stanford residencies
By Tracie White

Dr. Larry Chu videotapes program to help prepare residents

At first you just see the medical resident’s hands on the video screen and hear him muttering to himself. “Syringe…,” he says under his breath, as he nervously opens and closes the medical supply drawers searching around for what he might need. He fills a syringe with some milky liquid, tentatively preparing an IV for his patient, looking around for help. “Are you ready to go?” booms out the voice of the attending physician whose face suddenly fills the screen of this educational video. “The patient is a 24-year-old with a penetrating trauma to the belly. OK, stop! You’re going to use propofol on this patient?!!”

The setting is clearly a simulated operating room, with a robotic mannequin as the patient, but the resident’s anxiety feels all too real. And the scary soundtrack—imagine the ominous music played when the shark approaches in Jaws—only adds to the tension. This is not just entertainment, it’s also educational.

This video is part of START, a new 10-month online course from the Stanford University School of Medicine, filled with lectures, video-podcasts, interactive group projects, virtual classrooms and virtual mentoring. The name stands for Successful Transition to Anesthesia.

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Residency Training, and is the brainchild of Larry Chu, MD, associate professor of anesthesia, and Kyle Harrison, MD, clinical assistant professor of anesthesia. The course was designed to help relieve some of the anxiety that often accompanies the start of the residency.

The latest class of anesthesiology residents, 26 of them, arrived at Stanford at the beginning of July. They had just completed an internship year spent in hospitals across the country, during which they received general medical training — but without focusing specifically on anesthesiology. In the past, this has left the trainees on edge as they had to jump right in to anesthesia on day one of their residencies.

START aims to impart critical information to make for an easier transition. The residents learn, for instance, from the episode with propofol — the milky liquid — that they shouldn’t use it for anesthesia induction when a patient is in shock. As the instructor advises later in the episode, it could kill the patient.

The online course is also meant to help keep a connection between the residents and Stanford during the internship year that follows their graduation from medical school. (The residents are accepted into the program just as they graduate from medical school, right before starting the internship year.)

“We wanted them to feel like they were still part of our department despite being scattered all over the country,” said Chu, co-director of the program. “But they’re very busy in their internship year. The challenge was, how do we make it so they actually want to do it? So it’s useful and fun.”

The solution was to make the course virtual, available for viewing when the interns themselves had some spare time, and to make it a bit theatrical and dynamic.

Dr. Kyle Harrison does voiceover for video simulation

“In each video episode, for example, we used a dramatic situation to motivate their learning,” Chu said. “We wanted them to see firsthand what we see as doctors, so we used the point-of-view camera.” That meant Chu had the camera strapped to his forehead when he acted out the role as nervous new resident in the above-described video. Harrison, who dabbled in community theater and teaches in the Palo Alto Veterans Affairs Simulation Center, played the role of “authoritative attending” in the video who shows up just in time to save the patient. The videos were produced by the two doctors themselves at the Palo Alto-VA and also at the Stanford Center for Immersive and Simulation-based Learning located in the Li Ka Shing Center for Learning and Knowledge, the new high-tech educational building on the medical school campus designed to encourage innovative projects like this one.

For new resident, Megan Oelijnzak, MD, 33, from Minnesota, the course achieved its goals. “That first week (of residency) was really hard,” said Oelijnzak. “It can be anxiety-provoking. You start wondering, ‘Do I know enough?’ It was nice to have that connection that the online course provided. They showed us pictures of the campus, they talked about what they wanted us to know.”

To prepare for the course, Chu and Harrison conducted a survey of previous residents to determine what would be helpful. And they did a bit of research on how best to educate their incoming class, which is part of so-called “millennial” generation, defined as those born between 1979 and 1995. Their brains are wired to
learn differently, Chu said. They’ve grown up in front of devices with screens. They socialize via cell phones, computers and video games.

“We’re using these techniques because we want to engage the millennial learners who are now beginning to enter our residency program,” Chu said. “Using technology in education isn’t as daunting today as it used to be. We created the START program with online tools that are now available to any faculty member.”

For Boris Heifets, MD, one of the new residents recently arrived from New York, the training course was “pretty awesome. It was so much better than just straight-up PowerPoint presentations. It was a good way to pass the time during my night shifts. When I got to Stanford, I felt like I already knew Dr. Chu and Dr. Harrison.”

MEET NEW STAFF:
BY PATRICIA ROHRS

Christina Lum joined the Anesthesia Research Department December 1, 2011. She supports Drs. Yeomans, Patterson, Peltz, Wise-Faberowski, and Chander. Christina previously worked at UCSF in Medical Education in the Office of Community Based Education.

Prior to UCSF, she worked at Stanford with the Stanford Patient Education Center. Christina earned a Master’s in Public Health from San Jose State and a BS in Health Sciences from the University of Arizona. She can be reached in S268 at clum1@stanford.edu or 3-7442.

Michelle Bois joined the Pain Division as an administrator supporting Dr. Ravi Prasad, Assistant Division Chief, and Dr. Einar Ottestad, Director of the Acute Pain Service, among other administrative roles. Michelle has worked at Stanford since 2004 and within the Anesthesia Department since 2006, supporting DFA Jane Duperrault and handling credentialing responsibilities for all clinicians within the department.

She earned her BS in Health Science & Child Development from San Jose State and recently completed her Practical Nursing Certification and Associates Degree in Registered Nursing at Skagit Valley College in Oak Harbor, Washington, graduating with honors.

Michelle is located on the 4th floor of the Outpatient Center in the Redwood City academic offices. She can be reached mbois@stanford.edu or 650-721-7218.
Published Articles


- Carvalho B. Failed epidural “top-up” for cesarean delivery for failure to progress in labor. *Int J Obstet Anesth* 2011;October.


- Strachan AN, Graham AC, Hormis AP, Hilton G. What were the perceptions of primary care teams on learning from a single multidisciplinary simulation-based training intervention? Educ Prim Care 2011; Jul 22(4):229-34.


- Kim TE, Mariano ER. Update on billing for regional anesthesia (United States). Int Anesthesiol Clin 2011; Summer 49(3):84-93.


- Verduzco LA and Lighthall GK. The evolving role of preoperative testing in vascular surgery patients: can a little knowledge be dangerous? Semin Cardiothorac Vasc Anesth 2011;September 15(3):75-84.


**Abstracts and Posters**


- J Wong, E Riley, Carvalho B. *Analgesic efficacy of 100 mcg compared to 200 mcg intrathecal morphine after cesarean delivery.* ASA Annual Meeting, October 2011, Chicago, IL.


**INVITED TALKS AND GUEST PROFESSORSHIPS**

- Ed Mariano, MD, spoke about *Sonoanatomy for peripheral nerve blocks and Continuous femoral nerve blocks for knee replacement surgery* at St. Luke’s-Roosevelt Hospital, New York, NY, August 2-3, 2011.

- Brendan Carvalho, MB chB, FRCA, MDCH, spoke on three topics at the European Society of Regional Anesthesia 30th Annual Congress in Dresden, Germany, September 2011: (1) Refresher Course Lecture—Management of acute pain in the opioid-tolerant patient, (2) Expert Discussion—Which opioid is ideal for use in the epidural space? and (3) ASRA-ESRA Panel Lecture—Techniques for the management of outpatient continuous peripheral nerve blocks.

- Ed Mariano, MD, gave three workshop lectures at the ASRA Excellence in Ultrasound-Guided Regional Anesthesia Workshop, June 25-26, 2011: (1) Upper extremity blocks below the clavicle, (2) The business plan—billing for regional anesthesia, and (3) Ultrasound-guided continuous peripheral nerve blocks.

- Ed Mariano, MD, gave five lectures at the 2011 Stanford Intensive Regional Anesthesia Course in November, 2011 in Stanford, CA: (1) Introduction to ultrasound and basic sonoanatomy, (2) Management of continuous nerve blocks, (3) Update on upper extremity blocks, (4) Update on lower extremity blocks, and (5) Advanced sonoanatomy of the trunk and neuraxis.

- Brendan Carvalho, MB chB, FRCA, MDCH, spoke on three topics at the Duke School of Medicine-sponsored CME meeting, in Laguna Beach California, September 2011: (1) Strategies to optimize post-cesarean delivery analgesia, (2) An evidence-based approach to fluids and vasopressors to prevent and treat cesarean delivery spinal hypotension, and (3) Non-obstetric surgery and anesthesia during pregnancy.

- Brendan Carvalho, MB chB, FRCA, MDCH, spoke about *Multimodal analgesic options to minimize post-cesarean pain* at the Changing Practice of Anesthesia Conference, San Francisco, September 2011.

- Brendan Carvalho, MB chB, FRCA, MDCH, spoke about *Strategies to optimize labour analgesia* at the Combined Scientific Meeting of the Australia and New Zealand College of
Anaesthetists (ANZCA) and Hong Kong College of Anaesthesiology, Hong Kong, China, May 2011.

- Audrey Shafer, MD, was keynote speaker at the event, *Arts in healthcare: healing through art and music*, Stanford Hospital, Stanford CA, November 2, 2011.

- Martin Angst, MD, spoke about *Opioid pharmacogenomics in a twin-study paradigm*. Laboratory of the Biology of Addictive Diseases, Rockefeller University, New York, 2011.

- Martin Angst, MD, spoke about *All about opioids: Opioid-induced hyperalgesia*. Annual Meeting of the American Academy of Pain Medicine, Washington, DC, 2011.

- Gill Hilton, MD spoke about *Cardiac arrest in OB* at the 8th Obstetric and Gynecology Conference, Tu Du Hospital, Ho Chi Minh City, Vietnam, October 2011.

- Greg Hammer, MD, spoke about *Anesthesia for patients with congenital heart disease—balancing the circulation* to the Department of Anesthesia and Intensive Care, Karolinska University, Stockholm, Sweden on Sept. 12, 2011.

- Greg Hammer, MD, was visiting professor at the Department of Anesthesia and Intensive Care, The Queen Silvia Children’s Hospital, Sahlgrenska University, Gothenburg, Sweden and spoke about *The use of dexmedetomidine in children* and *The use of inotropes in infants and children with low cardiac output* to the Swedish Society of Pediatric Anesthesia, Sept. 15-16, 2011.

- Emily Ratner, MD, moderated a workshop, *Got stress, come here now! Mind-body skills: what they are, how to use them, how they can help*” at the ASA Annual Meeting, Chicago, IL, October 2011.

- Tara Cornaby, MD and Visiting Professor, Michael Lumpkin, PhD spoke at a workshop, *Got stress, come here now! Mind-body skills: what they are, how to use them, how they can help*” at the ASA Annual Meeting, Chicago, IL, October 2011.

- Emily Ratner, MD, and Brenda Golianu, MD participated in the Acupuncture Workshop at the ASA Annual Meeting, Chicago, IL, October 2011.

- Ravi Prasad, PhD spoke about *Spotting and managing delayed recovery in injured workers* at the Western Occupational Health Conference, in Las Vegas, NV, September 2011.

- Ravi Prasad, PhD; John Sorrell, PhD; Victoria Dorward, DPT and Michael Leong, MD spoke about *Integrating the roles of psychologists, physicians, and physical therapists—an interdisciplinary approach to chronic pain management*. at the American Psychological Association 119th Convention, in Washington, DC, August 2011.

- Ravi Prasad, PhD spoke about *Living with chronic pain* at the National Pancreas Foundation Chronic Pancreatitis Patient Education Night, Stanford, CA. July 2011.

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**BOOKS AND BOOK CHAPTERS**


APPOINTMENTS, AWARDS & HONORS

- Dr. Lawrence Chu was promoted to Associate Professor of Anesthesia, effective 8/01/2011. Profile: http://med.stanford.edu/profiles/Lawrence_Chu
- Dr. William Brose was promoted to Adjunct Clinical Professor of Anesthesia, effective 8/1/2011.
- Dr. Wendye R. Robbins was promoted to Clinical Associate Professor of Anesthesia, effective 9/1/2011. Profile: http://med.stanford.edu/profiles/Wendye_Robbins
- Dr. Jonay N. Hill was reappointed to Clinical Assistant Professor of Anesthesia, effective 9/1/2011. Profile: http://med.stanford.edu/profiles/Jonay_Hill
- Dr. Jeanne L. Rosner was reappointed to Clinical Assistant Professor of Anesthesia, effective 9/1/2011. Profile: http://med.stanford.edu/profiles/Jeanne_Rosner
- Dr. Clifford A. Schmiesing was reappointed to Clinical Associate Professor of Anesthesia, effective 9/1/2011. Profile: http://med.stanford.edu/profiles/Clifford_Schmiesing
- Dr. Meredith Barad was promoted to Clinical Assistant Professor of Anesthesia and of Neurology & Neurological Sciences, effective 10/1/2011. Profile: http://med.stanford.edu/profiles/Meredith_Barad
- Dr. Tara Cornaby was promoted to Clinical Associate Professor of Anesthesia, effective 10/1/2011. Profile: http://med.stanford.edu/profiles/Tara_Cornaby
- Dr. Louise K. Furukawa was promoted to Clinical Associate Professor of Anesthesia, effective 10/1/2011. Profile: http://med.stanford.edu/profiles/Louise_Furukawa/
- Dr. Alpana R. Gowda was promoted to Clinical Assistant Professor of Anesthesia, effective 10/1/2011. Profile: http://med.stanford.edu/profiles/Alpana_Gowda
- Dr. Diana G. McGregor was promoted to Clinical Professor of Anesthesia, effective 10/1/2011. Profile: http://med.stanford.edu/profiles/Diana_McGregor
- Dr. Anita Honkanen was promoted to Clinical Professor of Anesthesia, effective 10/1/2011.
- Dr. Komal Kamra was promoted to Clinical Associate Professor of Anesthesia, effective 10/1/2011. Profile: http://med.stanford.edu/profiles/Komal_Kamra
- Dr. Calvin C. Kuan was promoted to Clinical Associate Professor of Anesthesia, effective 10/1/2011. Profile: http://med.stanford.edu/profiles/Calvin_Kuan
- Dr. Lindsey G.C. Vokach-Brodsky was reappointed to Clinical Associate Professor of Anesthesia, effective 10/16/2011. Profile: http://med.stanford.edu/profiles/Lindsey_Vokach-Brodsky
- Dr. Daryl A. Oakes was reappointed to Clinical Assistant Professor of Anesthesia, effective 11/1/2011. Profile: http://med.stanford.edu/profiles/Daryl_Oakes
- Dr. Anthony Doufas was reappointed to Associate Professor of Anesthesia at the Stanford University Medical Center, effective 12/1/2011. Profile: http://med.stanford.edu/profiles/Anthony_Doufas
- Dr. Jennifer W. Wagner was promoted to Clinical Assistant Professor of Anesthesia, effective 1/1/2012. Profile: http://med.stanford.edu/profiles/Jennifer_Wagner
Dr. Rosario Garcia was promoted to Clinical Assistant Professor of Anesthesia, effective 1/1/2012. Profile: http://med.stanford.edu/profiles/Rosario_Garcia

Dr. Ethan Jackson was promoted to Clinical Associate Professor of Anesthesia, effective 2/1/2012. Profile: http://med.stanford.edu/profiles/Ethan_Jackson

Dr. George Caballero, Resident in Anesthesia, and Dr. Alex Macario, Professor of Anesthesia, were awarded the ASA Professional Diversity Mentorship Award. Profile: http://med.stanford.edu/profiles/Alex_Macario/

Ruth M. Fanning was reappointed to Clinical Assistant Professor of Anesthesia, effective 12/1/2011. Profile: http://med.stanford.edu/profiles/Ruth_Fanning/

Drs. Heather Chapin, Jennifer Hah, and Jiang-Ti Kong were each awarded an NIH T32 Training Grant Fellowship from the Department of Anesthesia.

Dr. Sean Mackey was awarded a Stanford BioX NeuroVentures pilot grant for Detection of Chronic Pain States in the Central Nervous System.

Audrey Shafer, MD, won an essay contest for Sweet Honey in the Rock at the event “Ms. at 40 and the Future of Feminism”, sponsored by the Clayman Institute for Gender Research, Stanford University January 2012.

Dr. Elliot Krane was awarded the Jeffery Lawson Award for Advocacy in Children’s Pain Relief by the American Pain Society.

Dr. Brice Gaudilliere, Resident, and Ryan Schubert, SMS 4 were awarded a $5,000 research grant by the Stanford Society of Physician Scholars (SSPS) for “Single-cell analysis of molecular signaling pathways regulating opiate-induced immunosuppression in humans.”

Dr. John Brock Utne’s new book Case Studies of Near Misses in Clinical Anesthesia was Springer’s best-selling medical textbook at the ASA.

Dr. Ed Mariano will become Editor-in-Chief of ASRA News, the newsletter of the American Society of Regional Anesthesia and Pain Medicine (ASRA). He will also chair the 2013 ASRA Annual Meeting and Workshops. Ed (with the Palo Alto VA) will be one of the 5 sites for a DOD multi-center phantom limb pain study (lead site UCSD with Brian Ilfield) totaling over $2.6 million for all sites over the next four years.

The School of Medicine formally recognized Drs. Ed Bertaccini, Rich Jaffe, Calvin Kuan, Sean Mackey, and Julie Williamson for their contributions to educating medical students during 2010-2011.

Dr. Sean Mackey has been appointed to serve on the Interagency Pain Research Coordinating Committee of the National Institutes of Health (NIH).

POPULAR PRESS

- PAINWeek 2012 to Address Diabetes & Pain Connection. Digital Journal December 14, 2011
- How the Brain Interprets Pain and How to Get Relief. US News December 7, 2011
- Rewiring the Brain to Ease Pain. Wall Street Journal November 15, 2011
- Lessons Learned from the Neuroimaging of Pain. Prohealth November 9, 2011
- Pain Measurement Tool in Development. Outpatient Surgery Magazine October 4, 2011
- Canadian research on cutting edge of efforts to validate chronic pain. Edmonton Journal October 2, 2011
- Imaging the brain predicts the pain. Visionsystems September 29, 2011
- The Ways We Talk About Pain. Scientific American September 27, 2011
NEW LIBRARY BOOKS

Hillary Farkas, Anesthesia Medical Librarian, announces additions and invites you to browse. The first five titles listed below are among 16 complete anesthesia texts also available as PDFs through Expert Consult, which you can access as follows:

— If you are off site, sign in through Axess, using your Stanford and Sunet IDs.
— Go to: www.expertconsult.com
— Enter login: hfarkas@stanford.edu
— Enter password: anesthes1a (lowercase-use no. 1 in place of the i)
— Click on login button and select a title.


Peripheral nerve blocks & peri-operative pain relief. 2nd Ed. Harman et al., (eds.) RD 84 P47 2011 (Expert Consult)

Essentials of pain medicine. 3rd Ed., Benson et al., (eds.) RD 84 E87 2011 (Expert Consult)


Essence of anesthesia practice. 3rd Ed., Fleisher & Roisin (eds.) RD 82.2 E87 2010 (Expert Consult)

Writing the NIH grant proposal: A step-by-step guide. 2nd Ed. R 853 .P75 G47 2011

Pocket companion to Robbins and Cotran pathologic basis of disease. 8th Ed. RB 111 P75 2012

The essence of analgesia and analgesics. RB 127 E87 2010

The Merck manual. 19th Ed. RC 71 M53 2011

Drugs in anaesthesia and intensive care. 4th Ed. RD 82 .I8 S27 2011

Anesthesiology clinics of North America. Pediatric Anesthesiology RD 139 P34 2005 v.23 (4)

Principles and practice of anesthesia for thoracic surgery. RD 536 P93 2011

Rogers’ handbook of pediatric intensive care. 4th Ed. RJ 370 H36 2009

Practical perioperative transesophageal echocardiography: with critical care echocardiography RC 683.5.T83 P5 2011 (includes DVD)

An introduction to cardiovascular physiology. 5th Ed. (Levick) QP 101 L47 2010

Principles of airway management. 4th Ed. (Finucane) RC 732 F56 2011

Capnography. 2nd Ed. (Gravenstein) RD 52 .R4 C36 2001

Monitoring in anesthesia and perioperative care. (Reich) RD 82 .M7 M68 2011
Thanks to Dr. Pearl for donating the following:

- *Closed-circuit anesthesia: from anesthesia based on experience to anesthesia on a scientific basis.* 2000. Lin, Chung-Yuan RD 78.8 C47 2000
- *Clinical manual and review of transesophageal echocardiography.* RC 683.5 .T83 C54 2010 +CD ROM

Thanks to Dr. Macario for donating the following:

- *Essential clinical anesthesia.* RD 81 E85 2011
- *Quality of anesthesia care.* (Anesthesiology Clinics) RD 82 .Q3 2011 v.29 (1)
- *Laughing and crying about anesthesia: A memoir of risk and safety.* by Gerald L. Zeitlin (autobiography and history of anesthesia) RD 80.6 I. 2011
- *Anesthetic Pharmacology.* 2nd Ed. RD 82 .P4 A68 2011
- *Biodesign: The process of innovating medical technologies.* R 856 B45 2010
- *Atlas of image-guided intervention in regional anesthesia and pain medicine.* 2nd Ed., Rathmell RD 84 R37 2012 (includes searchable text and image bank)

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**Babies**

On June 30, 2011 Judy and Ted Leng, welcomed their second daughter, June Sailom. Her middle name, Sailom, her grandmother’s name, means “light breeze” in Thai. Special thanks to Brice Gaudilliére (CA-2) for an outstanding epidural.

![Big sister Daisy with June Sailom Leng](image1)

Adam and Aurora Djurdjulov welcomed Braden Vojin Djurdjulov on July 16, 2011 at 12:30 am! (The Serbian middle and last names are pronounced “voyn jer-ja-lov.”)

![Braden Vojin Djurdjulov](image2)
It’s with great happiness that Neil Lawande and his wife Sahr announced the birth of their baby boy, Rishaan Neil Lawande, at 11:37 am on Friday, October 7, 2011. Special thanks to Drs. Andy Powers and Aileen Adriano for getting up in the middle of the night to put in a fantastic epidural (it renewed Sahr’s faith in what we do for a living)!

Rishaan Neil Lawande

Ed and Karley Mariano announced the birth of their son, Luke Jonah Mariano, on Nov 8, 2011. He weighed 7 lbs 11 oz and was 20.5 in long. They are grateful for their obstetrician, Dr. Christie Coleman and in awe of the perfect epidural, thanks to Dr. Brendan Carvalho.

Luke Jonah Mariano

Boris Heifets, his wife, Kate Wies, and their daughter Zoe welcomed the birth of Vivian Alexis Heifets, on Saturday November 19, 2011. She weighed 6 lbs 13 ounces, cried loudly and looked pink and only a little wrinkled. They thank Drs. Brice Gaudilliere and Nate Ponstein for the best spinal ever.

Sister Zoe, Baby Vivian, and Mama Kate Heifets

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