IN MEMORIAM: DR. BRANT WALTON

Brant Walton with his wife, Melissa, and son, Will

ANESTHESIOLOGIST G. BRANT WALTON DIES AT 34 BY DIANE ROGERS¹

Geoffrey Brant Walton, MD, a clinical instructor in anesthesia at the Stanford University School of Medicine, died peacefully at his Menlo Park home on Dec. 17, 2009 of colon cancer. Walton, 34, was appointed a clinical instructor in July 2007, after completing an anesthesia residency at Stanford University Medical Center. He had graduated from medical school at Duke University, where he received a Howard Hughes Medical Institute Research Fellowship. He also was a graduate of the North Carolina State University School of Veterinary Medicine.

Ronald Pearl, chair of the Department of Anesthesia, said the department has named an annual award after him: The Geoffrey Brant Walton Resident Award for Excellence in Teaching. “Brant was an outstanding anesthesia resident and faculty member,” Pearl said. “In addition to his superb clinical skills, he had a passion for teaching and was effective at communicating difficult concepts in an understandable way.”

Pearl noted that Walton received multiple awards for his research, which was directed toward developing methods to improve the function of the failing heart. “He had an innovative approach to solving problems, using a combination of advanced technology and molecular biology, “Pearl added. “Outside the hospital, he had a passion for music. Although he was only at Stanford for five years, he made a lifetime of friends here.” (Continued below and beyond)

In Memoriam: Dr. Brant Walton 1
From the Chairman, Dr. Ron Pearl 6
From the Deputy Chief, Dr. Rick Novak 7
From the Residency Director, Dr. Alex Macario 9
Alumni Corner
Dr. Elizabeth Steele 10
Dr. Linda Hertzberg, CSA Leader 10
Dr. Bill New, Inventive Leader 12
Medicine and Muse 14
Stanford Residents Shine at WARC 15
23rd Annual Stanford Anesthesia Update 16
Enlightening Questions: annual research awards 17
Additions to Library 18
The 8th Annual Golf Tournament 19
Faculty Corner 20
Letter to Editor 24
Life’s Transitions: Babies 25

The author of 10 publications, Walton received The Resident Research Award of the 2007 Stanford anesthesia class. He was a member of the American Society of Anesthesiologists.

Walton’s blog http://caringbridge.org/visit/brantwalton/journal chronicled his experience describing him as “the most caring husband, devoted father, exceptional

¹ Clinical Affairs Writer, School of Medicine, Communications and Public Affairs, Stanford University
son, and dedicated physician. “In lieu of flowers, his family asks that friends visit the website www.brantwalton.org to make a memorial contribution to the Walton Family Trust.

Walton is survived by his wife, Melissa; his 3-year-old son, Will; his parents Brenda and Bob; and his brother, Zaak. The department held a memorial service at 4 p.m. Jan. 19 in Memorial Church.

FROM STEVE LIPMAN

Brant was a talented individual—his talent crossed multiple domains of human endeavor—including but not limited to culinary (superb chef), musical (professional level jazz drummer), woodworking (master furniture builder). He was a gifted scientist, researcher, and clinician with an obvious and natural compassion for his patients.

But what was truly special about Brant was that he was a remarkable individual personally. As a friend, father, husband, brother, and son, he was exceptional. He was obviously courageous and extremely stoic. He was also open-minded, and friendly to all. He had dear friends who were not religious and those who were extremely so. He was an avowed carnivore, but his wife was a vegetarian. His friends came from all different ethnicities and cultural traditions. His intellectual curiosity was matched only by his genuine interest in and empathy for other people—family, friends, and patients. I was always buoyed by his contagious, positive attitude. He had an easy smile, a pleasant, humble demeanor, and a charisma that makes his loss particularly difficult to accept. Part of me still expects to see him walk around the corner here at work or at his home. I take some comfort in the fact that he is not suffering anymore, and that he made me a better person. But I miss him.

Thank you, Brant, and peace

FROM DEAN PHILIP PIZZO

EMAIL 1/25/10

“It is natural that we feel the loss of individuals who are members of our family and community. On December 17th Dr. Brant Walton, a young and promising faculty member in the Department of Anesthesia, died of colon cancer, leaving his wife Melissa and 3-year-old son, Will. His friends and colleagues felt his loss deeply and acknowledged his life in a ceremony at Memorial Church on January 19th….Death is part of the human condition and something we all will face. As a pediatric oncologist and AIDS specialist for children, I have witnessed the death of children over a number of decades. Even when death comes as an end to suffering, it creates a deep void in those left behind—especially family, friends and community. This void runs even deeper when death occurs suddenly and unexpectedly or at a young age and for those leaving behind young families. …These personal and global tragedies are devastating - especially for the individuals and families directly and immediately affected. Our hearts go out to them. But these events are also reminders of our human fragility and of why it is important to support each other, not only at times of crisis and loss, but throughout our lives as well.

FROM BROOKS ROHLEN

This is a tremendous personal tragedy, and yet it is also a teaching tragedy, a scientific tragedy, and a medical tragedy. The medical community will miss him personally, and it will also miss his brilliance, his insight and his potential—a potential to make significant difference in the lives of others.

QUOTING BROOKS ROHLEN AND ANDREW J. PATTERSON FROM THE STANFORD DAILY

…Brooks Rohlen, a senior resident in anesthesia, fondly recalled his experiences under Walton’s supervision for the first year of his residency. On Rohlen’s first day, Walton showed up with a cup of coffee and insisted on getting Rohlen one, too. “Instead of a superior-inferior relationship, he treated me as an equal,” Rohlen said. “It was a beautiful way of approaching a student. He didn’t blow me off, and made sure to take care of me.” According to Rohlen, when he shared ideas and concepts about medical technology over breakfast, Walton remained supportive….
In addition to exceptional teaching, Walton will be remembered as an accomplished researcher. An emerging mind in modern medicine, Walton won various awards including the Anesthesia Department’s Resident Research Award in 2007 and a prize from the California Society of Anesthesiologists. “Medicine has suffered a huge loss to lose a mind like that,” Rohlen said. “His ability to teach, invent and develop all made him a huge asset to academic medicine.”

In 2000, Walton was named a Howard Hughes scholar. Recipients of the prestigious fellowship are up and coming thinkers in the country, who can make a difference on a global scale, according to Rohlen. Using this scholarship, Walton worked closely with Dr. Wally Koch at Duke University, investigating cardiovascular physiology and adrenergic receptor biology.

After completing the fellowship, Walton came to Stanford to further his research in cardiovascular physiology. Andrew J. Patterson mentored Walton during his fellowship at the Stanford Medical Center. According to Patterson, Walton taught several members of his laboratory team how to perform the microsurgery techniques that he had developed in the Koch lab. “Brant was a phenomenal researcher,” Patterson wrote in an e-mail to The Daily. “[Walton] was known to have ‘golden hands’ in the laboratory,” he added. “He quickly showed us why when he started to work in my laboratory.” Walton’s work on gene expression profiling, done in Patterson’s lab, will be published in Critical Care Medicine in January 2010. Prior to his diagnosis of cancer, Walton also co-authored 10 publications. “Unfortunately, Brant [Walton] developed cancer before he could realize his full potential with regard to research,” Patterson wrote. “He would likely have developed novel means of monitoring the cardiovascular system – his talent was exceptional. “[He] would have invented something to save lives, and he would have contributed to a better understanding of heart disease,” Patterson added. “He was just reaching a point in his life where he could make a significant difference.”

FROM BROUGHTON HIGH SCHOOL ALUMNI FACEBOOK PAGE

...Brant was born and raised in Raleigh, North Carolina. He attended North Carolina State University and was accepted to the Duke University School of Medicine in 1998. In its attempts to recruit the best, brightest, and most well-rounded students, Duke struck gold with Brant. He was remarkably intelligent and exceptionally driven. His ability to teach manifested early as Brant taught cardiovascular physiology to many of his classmates. He had a sharp wit and humor, most of which was dispensed over class-wide emails, some of which continue to create laughter years after they were sent.

He was a true citizen of his class. He could be found at every campout, and rallied for Duke basketball at every possible moment, although his true loyalty was to the Wolfpack. He attended the Final Four in 1999 instead of studying for a microbiology exam. Although Duke lost, he passed with flying colors. He was a gourmet cook, a nationally recognized jazz drummer, and knew every historical fact about the state of North Carolina....

After learning of his diagnosis in January 2009, Brant’s approach to fighting his cancer left his family and friends in awe: he named his tumor Earl and started a blog that can only be considered part medical, part humor, and totally Brant. It can be found at http://www.caringbridge.org/visit/brantwalton. Keeping his friends and family updated regularly, Brant described his experiences with imaging scans, cancer therapies, and everything in between. Behind his wit and laughter was a man of enduring strength who cared about nothing more than the welfare of his wife and son, Will.

CARING WAS HIS SPECIALTY FROM RALEIGH NEWS OBSERVER BY ALETA PAYNE

The joker in Brant Walton named his tumor “Earl.” The doctor in Walton knew Earl might well kill him. During the last 11 months of Walton’s life, his sense of humor was a comfort...
and a shield through a situation as heartbreaking as it was inspiring, as ironic as it was sad:
That a man who appeared healthy and fit had been diagnosed with advanced rectal cancer at 33.
That a person accustomed to giving had to overcome his reluctance to accept the gifts offered to help him fight his illness.
That a brilliant doctor surrounded by brilliant doctors had no way of stopping the relentless progression of his disease.
“...I think he knew very early that his diagnosis was very bleak,” said Matt Ellis, one of Walton’s medical school roommates. “But his attitude was so positive. He never got down about things.
“Brant hated that people worried about him. He always felt there were people who deserved generosity more than him.”

...From boyhood, Walton rarely slowed down.
His parents recalled that he took naps only if he was riding in the car or when he toddled over to the sofa long enough to rest his head on it and doze off. He showed an early concern for critters and other people. “He was always taking care of things,” said his mother, Brenda. “Anything that seemed to be hurting, he’d bring it to the house.” Sometimes that meant a wild bird flying around their home. Other times, it meant offering a struggling friend a place to land. “Brant could pick up when somebody was in trouble or when somebody needed to be heard,” his mother said.
At Broughton [High School], Walton played drums in the marching band and show choir. Jason Karn, a high school band mate, recalled Walton rehearsing with the other musicians while studying from a science book open on the floor beside him. He didn’t miss a beat. Away from the music, they’d each get a gallon of milk and head over to the Krispy Kreme on Peace Street, where they would eat as many doughnuts as they could hold, and then vow never to do that again. Until the next time.
“He was one of those people who could light up a room,” Karn said.

Quite the teacher
...Karn said Walton had a gift for taking information, synthesizing it and helping others understand, including helping Karn, now a professional musician, understand science. “He would explain it to you in layman’s terms and make you feel brilliant,” Karn said.
Walton switched from surgery to anesthesiology so he could meet his own expectations for being a husband and father as well as a physician. “I think he showed some people how to be a good father. He showed other people how to be a good clinician. He showed other people how to have a sense of humor,” said Shaheen Wirk, a friend from med school.

His real gift was passion
Friends and family say Walton exemplified how to live with passion. “His real gift was passion, and he knew how to work hard, how to focus his mind such that any pursuit he made always went beyond what would normally be expected of most people,” his brother, Zaak, said by e-mail from California. “He never understood the concept of ‘adequate.’”
He became a gourmet cook who would take his own bag of tools and spices when preparing a meal at a friend’s house or traveling on vacation. Maureen Tedesco, who trained with him at Stanford, recalled Walton coming to her home to cook after her daughter was born. Tedesco said the meal was a special gift for her newly expanded family, and Walton prepared it the way he did everything else.
“It was always going to be the best,” she said. “The absolute best.”

Selfless in giving
That was true even in cases where others might not recognize it. Walton was also a woodworker who, among other things, built a changing table and train table for his son, Will. Justin Swan, another Stanford colleague, described in a eulogy how Walton became interested in learning to cut a particularly complex joint, one that would be invisible to the eye once the piece was constructed. The piece could have been easily purchased, but Walton told Swan that he wanted

Continued
to master the intricate joint because that would make him appreciate the finished product more.

“That attribute, that philosophy, permeated his life. The things that he shared with his friends and family were always beautiful,” Swan said in his eulogy. “And he was selfless in his giving. He always had a hand personally in whatever he was offering because he cared that much about the people that he loved.”

In the final months of Walton’s life, friends arranged for him, his wife, Melissa, and their son to travel to Hawaii during a break from his chemotherapy and radiation and later for them to stay several weeks in New York while Walton received treatment there. In both cases, the plans were set in motion without his knowledge. When he learned of friends’ efforts to make sure he would go to New York, Walton wrote on his blog: “I am convinced that I have done nothing to deserve this outpouring of generosity. The only explanation that I have come up with to rationalize why I find myself in this position is that I have been blessed to be surrounded by truly generous and loyal friends who would do this for anyone else they knew. I am no one special. I cannot accept that I am. I can only accept that I have support from others who are.”

A Tragic Loss
FROM WILLIAM WOOD, MD

Brant was a close friend. I have written about him several times during the last year, sometimes referring to him by a pseudonym, but now that he has gone, I wanted to write about him one more time and devote one of my columns to his memory. Brant was a true “Renaissance man.” He was an accomplished jazz drummer, an exceptional cook, a hilarious class clown, a caring father, a devoted husband, and to me, a dear friend and colleague. Brant left behind a beautiful family — his wife, Melissa, and his 3-year-old son, Will.

I have many memories of Brant. Losing Brant has felt, many times these last few weeks, like I’ve lost someone from my own family. Brant had a way of forging relationships with others that was unique.

In the wake of his death, many have come forward to share heartfelt remembrances about the personal and important roles that Brant played in their lives.

Brant’s death has been transformative

For me, Brant’s death has been transformative. I don’t think about my relationships with my family and friends in the same way anymore. I know that anything can happen at any time, and nothing can be taken for granted. It is easy, in medicine, to put personal relationships on a back burner while developing a professional career. I can’t afford to do this anymore. I also feel differently about my work. Multidisciplinary tumor board conferences are now almost overwhelming to me due to the implications of the life-changing management decisions that we make around the table.

My visits with my patients are rich with substance and meaning. Any new research project I choose must be very meaningful, with achievable results that have the potential to affect usual clinical practice. Our cancer patients have no time to lose in waiting for the outcomes of our efforts.

Brant’s experience with cancer also speaks to me directly. When Brant was diagnosed, in January 2009, he set up a CaringBridge website. During the next year, he kept a journal on the site with updates and reflections that were both heart-wrenching and humorous, until closer to the end when humor gave way to sadness around almost every turn.

Eventually, others would write for Brant when he was too sick to write for himself. The guestbook section of the site was used first for words of encouragement, and later for tributes, and finally goodbyes from friends and colleagues around the country and around the world — read to him by a friend as he lay dying in his last days, just a week before Christmas.

I learned so much about the cancer experience through Brant’s site — far more, even, than I’ve learned as an intern, resident or fellow.

Now, I am thinking about a research project in which, as oncologists, we might use sites such as
these to learn about what our patients can’t possibly have the time or space to tell us in the clinic, about what it is to become a patient from a person, while desperately holding onto personhood through the very end.

… I will grieve as Brant’s friends and family continue to grieve — and moving forward, I know that my life and my work will never be the same.

FROM THE CHAIRMAN
BY RON PEARL, MD, PhD
RICHARD K. AND ERICKA N. RICHARDS PROFESSOR
CHAIRMAN, DEPARTMENT OF ANESTHESIA
rgp@stanford.edu

Later this month I will have the honor of addressing the graduating anesthesia residents at University of California at Davis as their faculty speaker. Traditionally, the role of a graduation speaker is to provide sage advice graduates can use as they contemplate the future. Before giving some of my thoughts, let me first challenge you, the reader, to think about what pearls of wisdom you would want to receive as a graduating resident or impart as a Stanford alumna or alumnus.

Although I may change my mind in response to your feedback about this column, I currently intend to emphasize two themes in my speech: be a physician and strive to be happy.

Be a physician—The future of anesthesiology is filled with challenges and uncertainty—for example, health care reform, the role of mid-level providers, and advancements in surgery and pharmacology—all of which may change how we provide anesthesia today. As graduating residents, you can meet these challenges by *being a physician*. What do I mean by that phrase? Three things. First, pursue the ideals (embodied in The Hippocratic Oath to do the best for each patient) that motivated you to choose medicine as a career. Second, fully employ all the skills you obtained throughout the entire eight years of training. Practice the six ACGME core competencies of patient care, medical knowledge, practice-based learning and improvement, systems-based practice, professionalism, and interpersonal skills and communication. Use all of these competencies to optimize for each patient your anesthetic care and improve the health care system in which it occurs. Third, be a perioperative physician, not a technician, with each patient you treat. Put each patient’s best interests ahead of other considerations. You may need to cancel a case if your patient has not had an adequate preoperative evaluation and optimization, or you may need to discuss with a surgeon whether a specific surgery is in fact in the patient’s best interests. These three aspects—pursuing ideals, fully employing skills, and practicing perioperative medicine—define your goals and emphasize your strengths, enabling you to succeed in the uncertain environment ahead.

Strive to be happy—Although the concept of being a physician may seem obvious, the concept of striving to be happy may not, partly because we often do not understand what makes us happy. Modern psychology literature has studied this topic extensively. The standard maxim, “Money can’t buy happiness” turns out to be true, as there is almost no correlation between income and happiness, once basic needs are met. However, several things do correlate with happiness, for example, traditional positive values and emotions such as finding meaning in life, alleviating suffering, and having confidence in the future.

As anesthesiologists, the work we do each day is meaningful, whether it is saving a life, decreasing pain, relieving preoperative anxiety, or simply preventing postoperative nausea and vomiting. Also meaningful is our training in leadership and being able to apply it to have a positive impact on our world. But happiness also depends upon finding meaningful activities outside of work, including time with our families and friends and...
volunteering to help our larger community. Long-term happiness is enhanced when we continue to use our minds to learn both professionally and personally. Finally, the literature on happiness demonstrates that individuals tend to have a set level of happiness, despite external events, but there are techniques to increase this level. I would emphasize two complementary ones. First, reflect each day on the positive things that have occurred, at work, at home, and in the larger world. Second, approach the future with optimism, while taking actions to improve it.

Admittedly, there are concerning issues for the future of anesthesia. However, if we view ourselves as physicians and work to create a professionally and personally fulfilling present and future, there is no doubt that anesthesia will continue to be the right profession.

I look forward to readers’ comments about advice you would give the graduating residents.

Finally, I want to congratulate our 24 Stanford graduating residents as they embark on their anesthesia careers. They are an incredible class, and I know that we will be proud of their future accomplishments. I look forward to celebrating with them and their families on June 26. They will become alumni one week later, and we hope they will join us as we celebrate the 50th anniversary of the Stanford Department of Anesthesia the weekend of September 25.

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

Clinical Case: You’re the anesthesiologist for a 51-year-old man scheduled for arthroscopic rotator cuff surgery at a freestanding surgery center. His wife volunteers that the patient is a loud snorer. The patient denies ever being diagnosed with obstructive sleep apnea (OSA). Should you proceed with the surgery? Can the patient safely be discharged home after surgery at a freestanding facility?

What would you do?

You discuss the case with an anesthesia colleague. She recommends you utilize a STOP-BANG questionnaire on the patient. What is she talking about?

Discussion: Frequent snoring is present in 34% of men and women over the age of 40. (Baldwin, et al. Sleep disturbances, quality of life, and ethnicity: the sleep heart health study. J Clin Sleep Med 2010 Apr 15;6(2):176-83). Does any physician ever cancel a surgery at a freestanding surgery center because the patient is a snorer? Should we? Is there any data?

STOP-BANG may sound like a title from the next James Bond movie, but it has nothing to do with spies, guns, or crime. STOP-BANG is a relatively new tool for diagnosing OSA.

OSA is a common comorbidity in surgical populations. It’s estimated that approximately 4% of men and 2% of women, 18 million Americans overall, have OSA (Miller’s Anesthesia, 2010, p. 2776). An estimated 82% of men and 92% of women with moderate or severe sleep apnea have not been diagnosed (Chung F, Elsaid H. Screening for obstructive sleep apnea before surgery: why is it important? Curr Opin Anaesthesiol 2009 Jun;22(3):405-11). Patients with OSA are at higher risk for post-operative respiratory arrest (Cullen DJ. Obstructive sleep apnea and postoperative analgesia—a potentially dangerous combination. J Clin Anesth 2001;13:83).

OSA is defined as complete cessation of airflow during breathing lasting 10 seconds or longer despite maintenance of neuromuscular ventilatory effort, and occurring five or more times per hour of sleep, accompanied by a decrease of at least 4% in Sao2. (Miller’s Anesthesia, 2010, p. 2092). The gold standard for diagnosis is an overnight sleep
study, or polysomnography, which is both expensive and resource-intensive. The results of polysomnography are reported as the apnea/hypopnea index (AHI). The AHI is derived from the total number of episodes of apnea and hypopnea divided by the total sleep time. The American Academy of Sleep Medicine classifies the disease as follows:

Mild OSA = AHI of 5 to 15 events per hour
Moderate OSA = of 15 to 30 events per hour
Severe OSA = AHI of >30 events per hour


The STOP questionnaire queried patients on:

(S) Snoring: Do you snore loudly (loud enough to be heard through closed doors)?
(T) Tired: Do you often feel tired, fatigued, or sleepy during daytime?
(O) Observed: Has anyone observed you stop breathing during sleep?
(P) Blood Pressure: Do you have high blood pressure?

A patient with a STOP score of 2 out of 4 was considered at high risk for OSA. Each patient’s STOP score was evaluated against the corresponding AHI total from polysomnography. In Chung’s study, the STOP questionnaire was given to 2,467 patients, 211 of whom underwent polysomnography. The sensitivities of the STOP questionnaire in identifying patients with an AHI greater than 5, greater than 15, and greater than 30 were 65.6%, 74.3%, and 79.5%, respectively.

In the same study, the STOP questionnaire was expanded into a STOP-BANG questionnaire, which also queried patients on:

(B) Body mass index>35 kg/m2?
(A) Age>50?
(N) Neck circumference >40 cm (15 ¼ inches)?
(G) Gender=male?

With the added four questions, a patient with a score of 3 out of the possible 8 was considered at high risk for OSA. With STOP-BANG, sensitivities in identifying patients with an AHI >5, >15, and >30 were increased to 83.6, 92.9, and 100%.

In a recent study, (Ong TH, et al. Simplifying STOP-BANG: use of a simple questionnaire to screen for OSA in an Asian population. Sleep Breath 2010 Apr 26), 348 patients undergoing polysomnography were asked to fill in the 8-question STOP-BANG questionnaire. The sensitivities of the STOP-BANG screening tool for an AHI of >5, >15, and >30 were 86.1%, 92.8%, and 95.6%, respectively.

Thus STOP-BANG has been validated as a tool with high sensitivity that can be used to screen patients for moderate and severe OSA. As a clinician, what do you do with the STOP-BANG information?

You ask your shoulder arthroscopy patient the 8 STOP-BANG questions, and he scores 1 point for snoring, 1 point for age>50, and 1 point for male gender. These results qualify him for a possible diagnosis of OSA. Will you still anesthetize him for this outpatient surgery?

The most useful reference to answer this question is the ASA Practice Guidelines for the Perioperative Management of Patients with Obstructive Sleep Apnea (Anesthesiology 2006; 104:1081–93). If a sleep study is available, the Practice Guidelines feature an OSA Scoring System which scores on three criteria: (A) the severity of sleep apnea, (B) the invasiveness of the surgery and anesthesia, and (C) the requirement for post-operative opioids.

Per this OSA Scoring System, our shoulder arthroscopy patient scores (A) 2 points for presumed moderate OSA, (B) 2 points for peripheral surgery with general anesthesia, and (C) 2 points for possible high doses of oral or parenteral opioids post-op. His OSA Score is the total of (A) and the higher of (B) or (C), or 2 + 2 = 4 points. The Practice Guidelines state that, “Patients with a score of 4 may be at increased perioperative risk from OSA.”

The Practice Guidelines state that for “minor orthopedic surgery/general anesthesia” on
patients suspected of having OSA, the decision to discharge the patient home after outpatient surgery is “equivocal,” as there is no convincing data advising one way or another. The Practice Guidelines also state that “these patients should not be discharged from the recovery area to an unmonitored setting (i.e., home or unmonitored hospital bed) until they are no longer at risk for postoperative respiratory depression, . . . and may require a longer stay as compared with non-OSA patients undergoing similar procedures.”

The Practice Guidelines suggest regional techniques rather than systemic post-operative opioids, in an attempt to reduce the likelihood of adverse outcomes in patients at increased perioperative risk from OSA.

So what do you do?
You go ahead and anesthetize the patient. If you’re comfortable with upper extremity regional blocks, you may utilize this technique in your anesthetic. In any case, you’ll use your excellent judgment to delay discharge until the patient looks safe to be discharged home. If his oxygen saturation, airway status, or opioid requirements are unsatisfactory, you’ll transfer him to a hospital for overnight stay.

With or without STOP-BANG, your clinical judgment . . . based on your training . . . will still be your most valuable tool.

Editor's Note: Rick Novak’s catalog of past Clinical Case of the Month Columns is now available online at www.TheAnesthesiaConsultant.wordpress.com

We have had another terrific year and will graduate 24 newly minted anesthesiologists in 2010. Congratulations to each of them. This academic year has been quite successful, and some of the initiatives that come to mind for the residency include:

- New month-long resident rotations in orthopedic anesthesia, ambulatory anesthesia, chronic pain, and preoperative medicine at the VA, all with rotation directors, goals, and objectives, and assessment of ACGME competencies
- New lecture capture/recording of Grand Rounds and PGY2 didactic lectures to build online archive and to provide access to residents unable to attend
- New Successful Transition to Anesthesia Residency Training (START) Program, which is a 10-month, online, blended-learning, educational and virtual mentorship program designed to enhance the preparedness of interns to begin anesthesia residency. START is divided into monthly modules. Each module contains: 1) a 30-minute video podcast featuring clinical vignettes and mini-lectures, using a Moodle lecture-management system; 2) in-depth lectures accompanied by pre- and post-quizzes, using the Panopto lecture-capture system; and 3) an interactive, social networking assignment.
- A 5-year 96% Board Certification rate for Stanford anesthesia graduates

50TH YEAR CAMPAIGN IN FULL SWING

Please join us in celebrating the 50th anniversary of the Stanford Anesthesia Department the weekend of September 24-26, 2010. Also, please consider making a donation. Simply click here to make your tax-free donation. Thank you.
New online Medical Student Evaluation Form of Residents
New resident to resident (peer to peer) evaluations at the Palo Alto VA which are considered 360 degree evaluations by ACGME

Also, this summer we will have the annual airway workshop (August 21-22, 2010), and the following weekend will be the inaugural Resident Wellness Retreat designed for the new CA-1’s.

In addition, I would like to announce the Grand Rounds schedule for first half of next academic year.

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Speaker</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/5/10</td>
<td>HOLIDAY</td>
<td></td>
</tr>
<tr>
<td>7/12/10</td>
<td>Medical Work in Haiti after the Earthquake</td>
<td>Dr. Kent Garman</td>
</tr>
<tr>
<td>7/19/10</td>
<td>Malignant Hyperthermia</td>
<td>Drs. John Nguyen/ Lorenzo</td>
</tr>
<tr>
<td>7/26/10</td>
<td>Anesthesia for Myasthenia Gravis</td>
<td>Dr. Lee Hanowell</td>
</tr>
<tr>
<td>8/2/10</td>
<td>Liver Transplant Anesthesia</td>
<td>Dr. Harry Lemmens</td>
</tr>
<tr>
<td>8/9/10</td>
<td>CT ICU</td>
<td>Dr. Pieter Van Der Starre</td>
</tr>
<tr>
<td>8/16/10</td>
<td>Phenochromocytoma Case</td>
<td>Drs. Brooks Rohlen/ Fred Mihm</td>
</tr>
<tr>
<td>8/23/10</td>
<td>NO LECTURE DUE TO AIRWAY WORKSHOP</td>
<td></td>
</tr>
<tr>
<td>8/30/10</td>
<td>Pediatric Pain Management</td>
<td>Dr. Elliot Krane</td>
</tr>
<tr>
<td>9/6/10</td>
<td>HOLIDAY</td>
<td></td>
</tr>
<tr>
<td>9/13/10</td>
<td>Issues in Preoperative Assessment</td>
<td>Dr. Cliff Schmiesing</td>
</tr>
<tr>
<td>9/20/10</td>
<td>Subspecialty Education Meeting:</td>
<td>Drs. Vanila Singh/Lindsey Vokach-Brodsky</td>
</tr>
<tr>
<td>9/27/10</td>
<td>Simulation and Anesthesia</td>
<td>Dr. David Gaba</td>
</tr>
<tr>
<td>10/4/10</td>
<td>Orthopedic anesthesia</td>
<td>Dr. Pedro Tanaka</td>
</tr>
<tr>
<td>10/11/10</td>
<td>Visiting Professor</td>
<td>Dr. Paech (University of Western Australia)</td>
</tr>
<tr>
<td>10/18/10</td>
<td>ASA WEEK—NO LECTURE SCHEDULED</td>
<td></td>
</tr>
<tr>
<td>10/25/10</td>
<td>Regional Anesthesia and Ultrasound for Kids</td>
<td>Dr. PA Lonnikvist (Stockholm)</td>
</tr>
<tr>
<td>11/1/10</td>
<td>Palo Alto VA</td>
<td>Dr. Peter Barelka</td>
</tr>
</tbody>
</table>

Lastly, I would like to congratulate our 2010-11 chief residents, Drs. Bill Ennen, Erin Hennessey and Nate Ponstein and our residents of the month:

- January: Dr. Stephen Fink
- February: Dr. Stephanie Steinhoff
- March: Dr. Frain Rivera
- April: Dr. Nisha Malhotra
- May: Dr. Jon Bradley

**ALUMNI CORNER**

*Elizabeth Steele* reports that beginning June 1, 2010 she will become the Anesthesia Residency Program Director at the University of New Mexico. Congratulations, Dr. Steele.

**DR. LINDA HERTZBERG: ADVOCATE FOR ANESTHESIOLOGISTS BY PATRICIA ROHRS**

![Dr. Linda Hertzberg](image)

**The Governor’s Bomb**—“In mid-July [2009] Gov. Schwarzenegger dropped a bomb,” stated Linda Hertzberg, MD, the outgoing President of
the California Society of Anesthesiologists (CSA), who is a 1980 graduate of Stanford Medical School and a 1983 graduate of Stanford Anesthesia. Without consulting the medical board, as is required, the governor wrote to the Centers for Medicare and Medicaid Services (CMS) stating that it could opt out of requiring certified registered nurse anesthetists (CRNAs) to be supervised by a physician.

As far as Dr. Hertzberg and her colleagues were concerned, the governor’s letter represents the “dumbing down of American medicine” and deserves a vigorous legal and political response. As CSA’s 2009-2010 leader and chief advocate, Dr. Hertzberg immediately enlisted CSA’s lobbyists (Barnaby & Barnaby) and legal counsel who outlined the patient-safety implications and summarized the legal interplay between state and federal laws, giving CSA leaders ammunition for their challenge to the governor’s directive. According to Dr. Hertzberg, CSA does not dispute the value and role of CRNAs in the care team model, but it does argue that because Anesthesiology is a medical practice, CRNAs, who are nurses, not physicians, should administer anesthesia under the supervision of a physician. She emphasized, “Things may go awry in anesthesia during surgery that require a physician’s expertise to resolve.”

**Historical Context**—The Clinton Administration (2000) repealed a Medicare rule requiring supervision of CRNAs by doctors. The Bush Administration (2001) replaced the rule with a compromise: a state could opt out of the supervision requirement provided that a state consulted with its state boards and maintained consistency with state law, and provided that the governor found opting out to be in the state’s best interest. However, the Medical Board of California (MBC) said doctors must supervise CNRAs.

**Interpreting Language**—CSA and the California Medical Association (CMA) have long differed with the Bureau of Registered Nursing (BRN) over the CRNA scope of practice, arguing over the meaning of certain verbs in the legal language: supervised by a physician (used by CSA and CMA) vs. ordered by a physician and directed by a physician (both contained in state regulations). The BRN website says this: “The nurse anesthetist is a registered nurse who provides anesthesia services under the direction of a physician, dentist, or podiatrist, and is certified by the BRN in this specialty.” In contrast, the California Legislative Counsel, responsible for writing laws enacted by the Legislature, confirms the CSA and CMA interpretation: “State law does not authorize a certified registered nurse anesthetist to perform anesthesia services without supervision by “a physician.”

CSA contends that Gov. Schwarzenegger’s directive is not consistent with state law. Moreover, the Medical Practice Act bestows the broadest healing arts scope on physicians, including authorization “to use drugs, “perform surgery and “to use any and all other methods in the treatment of diseases, injuries, deformities and other physical and mental conditions.”

Accordingly, “administering [potentially lethal] anesthesia constitutes the practice of medicine.”

It was on this basis that both the CSA and California Medical Association (CMA) filed suit against Governor Schwarzenegger in State Court in San Francisco in early February, requesting that the court enjoin him to withdraw his letter to CMS. Motions are now underway to that effect.

**Stanford Brings out the Best in People**—After graduating from Stanford Medical School, Dr. Hertzberg pursued a residency in Anesthesiology at Stanford and subsequently became Dr. Mike Rosenthal’s 13th critical care fellow. Stanford Anesthesia “brings out the best in people,” she said, citing her other Stanford role models, who, like her, have also served as CSA leaders—Dr. Tom Feeley, Rick Fogdall (currently one of her medical partners at Anesthesia Consultants of Fresno), and Kent Garman.

Post-residency, Dr. Hertzberg held an academic position at Dartmouth University Medical College and The Hitchcock Clinic in Anesthesia and Critical Care. After four years in the cold northeast, she was eager to return to California and followed her husband, when he was recruited to practice pediatric critical care in Fresno, CA. After working in one private practice for a year, also in Fresno, she eventually joined another private practice at a tertiary-care hospital (no
transplants or trauma work). Dr. Hertzberg was the first woman to become President of the Medical Staff. The Fresno area is economically depressed, with an unemployment rate currently at 18%. In addition, the Medicare reimbursement rate is among the lowest in the state. These conditions make it difficult to recruit and retain specialty physicians to the Fresno area, something that Dr. Hertzberg believes was not properly addressed, in the recent passage of health care reform.

For such a leader and advocate as is Dr. Hertzberg, becoming CSA president for the past year was a natural career step that gave her a broader scope for service and provides intellectual stimulation. In her President-Elect’s address to CSA’s House of Delegates, Dr. Hertzberg emphasized that CSA must challenge the attitude represented by the words, “That’s the way we do it here.” She referred to Dr. Jerome Groopman’s superb book, How Doctors Think, in which the author emphasizes questioning the old ways and seeking innovation and improved patient care. Clearly the challenges anesthesiologists must address as they seek such innovation and improvement include legislative [and executive] and regulatory pressures and challenges to scope of practice.

CSA leadership, including Dr. Hertzberg, attended the ASA Legislative Conference in Washington D.C. in April. They met with members of the House and Senate to discuss concerns with the Health Care Reform Legislation, including the lack of change to the Medicare payment formula, rural anesthesia services, and Independent Payment Advisory Board. Several residents attended, including one from the Stanford Anesthesiology program.

Despite what happened with opt out, Dr. Hertzberg is proud that the other initiatives she had envisioned for the CSA during her 2009-2010 term are coming to fruition. For example, the CSA is redesigning its communications with its members and members of the public. A complete web site design is underway that will support mobile devices and Web 2.0 interactivity, as well as improved electronic communications.

A Personal Footnote—Dr. Hertzberg’s secret desire is to become a gymnastics judge, her interest in this pursuit stimulated by her college-aged daughter’s having achieved level 10 (just below elite level) as a gymnast. With Dr. Hertzberg’s understanding of balance, strength, agility, and tough-mindedness, being a successful judge would suit her talents.

**COMPUTING + TALENT = SAFER PATIENTS**
**BY BILL NEW, MD, PhD**

**The birth of computing at Stanford**

In 1959, when I arrived as a Stanford freshman, only two computers existed on the campus: a Burroughs B220, installed in the basement of Encina Hall, and an IBM 650 rotating drum machine in the electronic engineering lab. A vacuum tube IBM 709 was rumored to arrive, but it was replaced by a transistorized IBM 7090, whose upgrades, successors, and fellow mainframes would become the backbone of Stanford computing during the 1960s. These machines and the associated keypunch card machines, digital tape recorders and large printers were housed behind Pine Hall’s glass walls. The IBM machines ran FORTRAN, and the Burroughs machine ran BALGOL, an early variant of ALGOL (ALGOorithmic Language), an “open source” language, which gave rise to C and other languages. ALGOL 60 (introduced in 1960) shortly became Stanford’s de facto standard computer language. In 1965 the Department of Computer Science was founded by some Stanford electrical engineers who recognized that computing had become an important academic and research field unto itself.

**My introduction to the Department as Research Assistant**

I was introduced to the brand-new Stanford Department of Anesthesiology in the early 1960s, when it was located in the part of the then-new hospital known today as the Edwards Research Building. John Bunker was the newly appointed professor and chairman of the department, created after the Medical School’s move in 1960 from San Francisco to the Stanford campus. Other early department members included Drs.
Allen Ream and I were graduate electrical engineering students who became RAs to help Charles Whitcher with his early work in physiologic measurement and recording in anesthetized patients, an interest which led us both to become anesthesiologists and later join the faculty.

**Early Department computers modeled physiologic responses**

The original department was small and cramped. The largest room contained a big Beckman Instruments analog computer (costing over $200k and measuring 12 x 8 x 6 feet), under the direction of Jay Bellville and Ty Smith, who programmed the beast to model physiologic responses to anesthesia. There was a nearby suspended lightweight stretcher for ballistocardiography and other measurements on student volunteers. The computer’s vacuum-tube amplifiers required continual maintenance and service. Lloyd Gano, a full time technician, performed electronics support in the Department for many years. He owned a small car he had converted to electric drive using a war-surplus aircraft starting motor and rechargeable batteries that filled the back seat.

**A succession of computers**

When the department moved to the Grant Building, we had a succession of computers. The first was a digital DEC PDP-8 minicomputer, acquired in the late 1960s (costing $65k and approximating the size of two refrigerators), under the direction of Jobst von der Groben. Next were a desktop Hewlett-Packard 9100A programmable calculator (costing $5k in 1972), followed by the loan of a desktop IBM 5100 (costing $18k and too expensive to buy). In the mid-1970s, during my residency, a dishwasher-sized DEC PDP-11 computer and 5-megabyte hard-disk drive appeared (my first introduction to UNIX using the C computer language). After I joined the faculty in 1975, cheap desktop microcomputers became available (costing less than $1k), and in short order an Altair 8800 (2 kilobyte memory), a Commodore PET (8 kilobytes), a Radio Shack TRS-80 (16 kilobytes), and an Apple II (32 kilobytes!!) appeared as fellow faculty members started experimenting with computing.

**The Homebrew Computer Club (Steve Jobs and Steve Wozniak) stimulated more experimentation**

Computer-geek doctors in our department and others would often chat in the cafeteria or the OR locker room about the “latest and greatest,” as microcomputer makers (Commodore, Cromemco, HP, Sun, Apple) soared in Silicon Valley. In Menlo Park the Homebrew Computer Club formed and became a forum for discussing and building microcomputers for personal use. Urologist Ed Butler at the Menlo Clinic and I obtained permission for the Club to meet at Stanford, because of student interest. I met Steve Jobs and Steve Wozniak at the Homebrew meetings, run by Lee Felsenstein, who pointed a stick at a participant wishing to speak. Wozniak made available the first Apple I printed circuit boards for constructing a computer from a parts list he supplied. Building these first computers was how many of us learned microprocessors, assembling computer programs from simple machine-language instructions, managing memory, peripheral displays and keyboards.

**The first pulse oximeter was crafted from computer elements**

A few years later, I crafted a pulse oximeter by programming a microprocessor and 4 kilobytes of memory to optically measure blood pulsation in the finger tip and perform computations on the digitized waveforms. The oxygen saturation and heart rate results were numerically displayed on the front panel.

**Computer networking evolved into an interactive medium for both people and things**

I had learned how computers can interconnect over long-distance networks from Vint Cerf, my Stanford undergraduate and UCLA graduate school contemporary, who is often called the “Father of the Internet.” In the 1980s, we sent small text files from one computer to another as
primitive email. In the 1990s, we posted graphics and text on a website, which users could access via the Internet. In the first decade of the 2000s, we share video, music, photos, and words with many people at once (think: Facebook, blogs, wikis). Today the Internet connects things that interact with other things. For example, my vacationing uncle’s pacemaker in Hawaii “talks” to the clinic back home, and my aging aunt’s wristwatch in England sends alerts when she falls (and doesn’t get up) to her doctor’s iPhone in Oxford and mine in Palo Alto.

**Now, body sensors allow doctors to remotely measure and monitor a patient’s physiology**

As the size of computers has shrunk further into laptops and handheld devices, the computing power has vastly increased (a cell phone now contains far more computing power than did the two original Stanford computers combined). I am now designing wireless body sensors for pre-op status evaluation to post-op recuperation, from home to hospital and back. These sensors are essentially entire medical measurement and monitoring instruments on a single chip (with megabytes of memory), disposable after single patient use. These instruments “talk” to a cell phone, which displays sensor data, controls it, and, if necessary, signals alarms. Through the cellular “cloud,” we can look at the physiology of any patient anywhere anytime.

**What’s next?**

Fifty years of Stanford Anesthesia have contemporaneously paralleled the fifty years of computing at Stanford. The field of Anesthesia has progressed over these five decades: as a medical student I used ether and cyclopropane and studied halothane toxicity; today, as computing power continues to grow geometrically (Moore’s Law), we model molecular mechanisms on the computer and use the results to design drugs. Because today’s medical students, residents, and young faculty are *digital natives*, who have never lacked instant personal communication and immediate access to information, we can anticipate that the healthcare and education industries (historically decades behind in information technology) will become fully computerized. Being able to interconnect things as well as *people* promises to revolutionize medicine, so that care become more patient-centered, more affordable, and more accessible, while also becoming less schedule-controlled and facility-centric.

These factors combined with Stanford Anesthesia’s favored spot in Silicon Valley, make me confident that Stanford Anesthesia can remain prominent in the expanding world of medical technology and bioengineering. It took hard work and imaginative vision to get us here over the last 50 years, and with more of the same and a little luck we can celebrate our Centennial in 2060, still a leader.

**MEDICINE AND THE MUSE: AN ARTS, HUMANITIES AND MEDICINE SYMPOSIUM BY AUDREY SHAFER, MD**

The ninth annual spring Medicine and the Muse Symposium attracted an audience of over 500 to hear a range of student presentations and a keynote speech by Malcolm Gladwell, *New Yorker* essayist and author of books such as *Outliers*, *The Tipping Point*, *Blink*, and *What the Dog Saw*.

**Malcolm Gladwell**

The program opened with the Chrysalis Quartet, and continued with creative writing readings and presentations on the writing process, patient perspectives, and cultural implications of neuropsychiatric disorders. Malcolm Gladwell discoursed on the relationship of serendipity and biomedical discovery, in particular, the search for anticancer drugs. The exhibit featured multimedia
visual arts by students, faculty, and staff. The event gave attendees an opportunity to reflect on the meaning of medicine, the experience of illness, and the human story behind biomedical research.

The event was organized by a medical student committee and directed by first-year student Katherine Bell. Paula Bailey, education coordinator for the Stanford Center for Biomedical Ethics, provided expert administrative support.

For more information about the Arts, Humanities and Medicine Program, please visit http://bioethics.stanford.edu/arts/ and to see an archive of Medicine and the Muse symposia, visit http://bioethics.stanford.edu/arts/events/MedicineandtheMuse.html.

---

**STANFORD RESIDENTS SHINE AT WARC 2010**
**BY JOHN BROCK-UTNE, MD, PhD**

The university of Southern California (USC) Anesthesiology Department hosted the Western Anesthesia Resident Conference (WARC) from 30 April to 2nd May 2010. The venue was Disneyland Resort Hotel. WARC is specially designed for anesthesiology resident, medical students and fellows from 19 anesthesiology residency programs in the Western US. Its object is to promote and encourage academic pursuits by future leaders in anesthesiology.

This year’s WARC had 340 abstracts and oral presentations—the biggest number ever. Many residents submitted more than one abstract; one resident from Loma Linda, a very nice chap, submitted 7 abstracts and had one oral presentation. Eleven of Stanford Anesthesia’s residents participated. They were in no particular order:

**Posters:**
- Carlos Brun, *Massive postpartum hemorrhage in association with acute fatty liver of pregnancy*
- Shaun Kunnavatana, *A patient with end stage COPD and a fractured humerus. What technique would you choose?*
- Sarah Bain, *Cardiopulmonary bypass surgery in two patients infected with human immunodeficiency virus*
- Mary Laughlin, *Unexpected severe intraoperative hyperkalemia during pars plana vitrectomy*
- Michael Charles, *Severe metabolic acidosis during EC-IC bypass for Moya-Moya, induced by acetazolamide used for a SPECT scan*
- Laura Downey, *Is it safe for patients who have received bleomycin to be exposed to hyperosmolar hyperperitoneally?*
- Jennifer Hah, *Important perioperative concerns in a patient with Loes-Dietz Syndrome*
- Vikas Shah, *Does the brain implement some form of delay coordinate embedding?*
- Jennifer Lee, *Patient education handouts for regional anesthesia: help or hindrance?*
- Erin Hennessey, *Myocardial ischemia after ECT: Are cardiac troponin levels useful?*

**Oral Presentations** (the organizing committee decides who should make an oral presentation):
- Vikas Shah, *Changes in the chaotic properties exhibited by brain regions and resting state networks during sedation with propofol: a pilot fMRI study*
- E. R. Gross, *Acute capsaicin treatment reduces myocardial infarct size in rats via the transient receptor potential vanilloid 1 (TRPV1) channel*

Eric Gross received first prize for his presentation. It was very well-deserved. He left the audience in no doubt that he knew his topic. That he did so well was a miracle, as just as he was to start his presentation, the audio equipment went into total chaos. The noise level reached several 1000 decibels and nearly emptied the room. Eventually some clever person turned the offending microphone – off. Brilliant. The whole episode lasted 5-7 minutes. So despite this setback, Eric came through splendidly.

Vikas Shah presented his work and did extremely well. I personally feel that he was robbed. The questions he got were fielded like an outstanding cricket batsman. There was no question that he knew his topic. Very well done.
Friday evening was a get-together for all the residents and faculty. Afterwards, Laura Downey, Mary Laughlin, Vikas Shah, Erin Hennessey, Ron Pearl, and I enjoyed Downtown Disney. The Jazzbar was terrific, and we had a great time.

The poster session on Saturday afternoon was a hive of activity with teams of judges roaming around asking questions and giving marks for each presentation. Our residents were terrific. I was afterwards complimented by several of the judges on how well they did. I was very proud of them. I do believe that our practice session at the FNR on Thursday night before WARC was vital. I want to thank the following faculty for being there and asking/advising the residents: Mike Rosenthal, Rona Giffard, Pieter van der Starre, and Bruce MacIver. If I have forgotten anyone, please forgive me.

As is usual during any Saturday night WARC dinner, a dignitary gives a talk. This year it was Mr. Dave Hume Kennerly, the famous Pulitzer Price photographer, most known for being President Gerald R. Ford’s personal photographer. He told us that when he interviewed for the job he said to President Ford, “I want full access. If not, I am not taking the job.” Ford said: “I presume you want my plane, Air Force I, for the weekend?”

Back row, left to right: Eric Gross, Erin Hennessey, Vikas Shah, Sara Bain, Mary Laughlin, Michael Charles
Front row, left to right: John Brock-Utne, Jennifer Hah, Laura Downey

Kennerly got the job but not Air Force I. His pictures of his time in the White House were extraordinary. There was one with Betty Ford (President Ford’s wife) dancing bare-footed on the cabinet table, which was priceless. So were the pictures of Donald Rumsfeld, Dick Cheney, and even Hillary Clinton advising the President. I think we were all very surprised that the above-mentioned characters have been around so long.

The only criticism I have of WARC 2010 is that I would have liked to have had Donald Duck or Goofy giving out the prizes. However, what I did not know is that renting a walking, talking Donald Duck etc. costs $1500 per hour. I volunteered for $500, but there was no interest.

Next year’s WARC is in Tucson, Arizona from the 29 April to 1 May 2011. See you there.

A HUGE (SNOWY) SUCCESS—23ND ANNUAL STANFORD ANESTHESIA UPDATE IN BIG SKY

The 23rd Stanford-sponsored Anesthesia Update took place in Big Sky, Montana’s winter wonderland February 14–19, 2010. Unfortunately, because Stanford’s CME policies have changed, this was the final conference sponsored by Stanford. Attendees included the community of general and subspecialty anesthesiologists and nurse anesthetists, from 28 states and five countries, there to learn from luminaries about the latest advances and published guidelines in anesthesia.

Lone Peak, Big Sky, Montana

Among several outstanding speakers was Dr. Kim Eagle, a cardiologist and Director of the Cardiovascular Center at the University of
Michigan. He lectured on preoperative evaluation of the non-cardiac surgery patient, an area he has pioneered.

Stanford Anesthesia faculty participants included Drs. Jeremy Collins, Sean Mackey, Fred Mihm, Drew Patterson, Ron Pearl, and Myer Rosenthal. Faculty participants from other universities included Dr. Evan Kharasch, Washington University; Dr. Deborah Culley, Brigham and Women’s Hospital/Harvard Medical School; Dr. Santhanam Suresh, Northwestern University; and Dr. Matthew Weinger, Vanderbilt University.

Lecture topics ranged from Airway Management to Post-operative Delirium to Echocardiography to Pharmacogenomics.

Skiers enjoyed blue skies, fabulous snow, and non-existent lift lines. Nearby Moonlight Basin offered skiing on steep Lone Peak, as well as long, cruising runs and beautiful glade skiing. Kids skied for free. Beautiful scenery and abundant wildlife were also part of the appeal.

**ENLIGHTENING QUESTIONS:**

**ANNUAL RESEARCH AWARDS**

**BY PATRICIA ROHRS**

“It’s been an enlightening day,” commented guest evaluator Dr. Alex S. Evers, Chair of the Department of Anesthesia at Washington University in St. Louis, who is also a professor of medicine and of molecular biology and pharmacology. “I visit many departments. This one really stands out for its members’ energy, curiosity, interactivity, and collaboration.” Dr. Evers’ after-dinner remarks, made at the annual departmental research event, applied to the 51 poster abstracts he had seen and the discussions he had had with the researchers who prepared them. He also complimented Dr. Ron Pearl for fostering such a vital research culture, noting that it clearly had creative momentum.

Dr. Evers, a member of the National Academy of Sciences, is renowned for his research on the molecular mechanisms through which anesthetics depress the nervous system, focusing on target molecules with which those anesthetics preferentially interact. Using labeling techniques, he has identified relevant proteins and structures of specific anesthetic binding sites. His laboratory also works to identify specific cellular functions that are affected by anesthetics.

Before dinner, members of the Department sipped wine and nibbled on hors d’oeuvres, while engaging with researchers and their poster abstracts. After a lovely buffet dinner, Rona Giffard, MD, PhD, who is vice chair of research, opened the after-dinner program by noting that the Department had 14 federally funded research projects and 32 non-federally funded ones. She remarked that her recently awarded T32 training grant will support 4 anesthesia fellows per year who are interested in pursuing an academic anesthesia research career. Dr. Giffard also announced that the Department’s Fellows in Anesthesia Research and Medicine (FARM) program, which began 4 years ago, has grown: 4 new fellows will join the program in July. Finally, she recognized Divya Chander for receiving a FAER mentored research training award.

Dr. Giffard introduced speakers for each award-winning abstract, each of whom described intricate, seminal work.

The first speaker, Dr. Jarred Younger, co-authored his abstract with Larry Chu, Nicole D’Arcy, Kiley Trott, and Sean Mackey: *Prescription opioid analgesics rapidly change the human brain.*

The second speaker, Dr. David Ruau, co-authored his abstract with Atul Butte, J. David Clark, and Martin Angst: *Bioinformatics approach for biomarker identification with aid of large medical and gene-expression databases.*

The third speaker, Dr. Gary Peltz, on behalf of Dr. Hong-Hsing Liu, co-authored his abstract with Hong-Hsing Liu, Ming Zheng, David Dill, Jianmei Wang, Rosanne Spolski, and Warren J. Leonard: *The trans-genetic effect of Cd14 rSNPs on Type I interferon production and the innate immune response.*

The fourth speaker, De-Yong Liang, co-authored his abstract with XiangQi Li, Yan Sun, Peyman Sahbaie, Xiaoyu Shi, WenWu Li, and J David Clark: *The complement component C5a mediates pain and inflammatory sensitivity in a postsurgical pain model.*

The Gas Pipeline, January 2010, Page 17
**NEWS FROM THE DEPARTMENT LIBRARY**

Hillary Farkas, Anesthesia Medical Librarian, reports new happenings in computers, books, journals, and department archives: “Since May 2009, we’ve acquired a wonderful range of new books and updated editions. Thank you to Drs. Macario and Lemmens for their new book donations, and special thanks to Dr. Garman who contributed many of the books listed below. I also extend my grateful thanks to Dr. Buechel for his continued support and donations to our library journal collection. His latest contribution is the New England Journal of Medicine.”

**Computers**

We now have five computers in the library—two PCs and one Mac in the computer lab and a workstation (reserved for Xcelera and for urgent clinical access only) and a new, wireless Mac laptop in the reading room. The Mac laptop’s desktop displays icons for direct access to LPCH (Cerner) and EPIC, but you’ll need your fob for secure login. Icons for Word, Excel and PowerPoint are on the dock at the bottom of the desktop, and print jobs are sent wirelessly to the library’s printer.

**Books**—Books are listed below by title and call number:

- *Acute pain management*. Sinatra. RB 127 A32 2009
- *Advances in anesthesia*, vol. 12 RD 78.3 A38 1995
- *Advances in Cardiovascular Pharmacology*. RD 598.C34 2008
- *Anesthesia for Congenital Heart Disease*. RD 598 A57 2010
- *Anesthesia for the high-risk patient*, 2nd Ed. RD 82.5 A53 2009
- *Anesthesia oral board review: knocking out the boards*. RD 82.3 A47 2010
- *Anesthesiology & critical care drug handbook*, 9th Ed. RD 82.7 A35 2010
- *Board stiff THREE: preparing for the anesthesia orals*, 3rd Ed. Gallagher, RD 82.3 G35 2009 (please use DVD in library only)
- *Cardiovascular drugs in the perioperative period*. RD 87.3 H43 C17 1999
- *Clinical Anesthesia: Near Misses and Lessons Learned*. John Brock-Utne. RD 82.45 B76 2008
- *Cottrell and Young’s Neuroanesthesia*. RD 593 C82 2010
- *Cousins and Bordenbaugh’s neural blockade in clinical anesthesia and management of pain*, 4th Ed. RD 84 N48 2009
- *Digital medicine: Implications for healthcare leaders*. R 858 G65 2003
- *Handbook of epidural anaesthesia and analgesia*. RD 84 P24 C83 1985
- *Manual of Pediatric Anesthesia*. RD 139 S84 2010

---

The Gas Pipeline, January 2010, Page 18
The 8th Annual Golf Tournament
By John Brock-Utne

Sunday 16 May 2010 a total of 24 people associated with the Department of Anesthesia in some way or another carried their golf clubs onto the Stanford golf course. Last year we had 36 players. This year there was a lot of interest, but the weekend that was given to me by the Pro shop was not suitable for many people. Graduations, weddings and of course some people had practiced too much and overdid it, resulting in last-minute cancellation. There were also some of you who claim you never had an invitation. If so, let me know and I will put you on the mailing list for next year. Middle of June would seem a better time.

The weather was nice and sunny but unusually cold for this time of the year. The course was in great shape but the rough was very rough. Losing balls occurred with monotonous regularity. The Pro shop did a roaring trade in new and old balls.

The 24 players were randomly assigned to 6 groups. Every team had to use at least 2 drives from each of the four players. After everyone had teed off and the best ball was selected, all players then hit or putted from that position until the ball was holed out. In other words, there was very little pressure on the individual players.

The winning team with a score of 63 consisted of Jesse Hill (CA2), Mark Pratt, and Arne and Sue Brock-Utne. I believe that is the first time this has happened.

After golf, we assembled on the patio overlooking the 18th Green.

Continued
The prize-giving was the usual chaos, but in the end everyone who should get a prize got one. Snacks and drinks were provided and the company became more and more lively.

So let’s hope we can do this again next year. Sharpen your clubs and bring more balls than you think you will need, and we will whack our way around the course once more…..

**Faculty Corner**

**Published Articles**


Angst MS. Evaluating the analgesic efficacy of intrathecal cyclooxygenase inhibitors in humans: Don’t throw in the towel! *Anesthesiology* 2010;112:1082-1083.


### Abstracts and Posters


Rubin P, Butwick AJ. Internal iliac balloon catheterization prior to non-elective cesarean delivery in a patient with placenta accreta. SOAP 42nd Annual Meeting, May 2010, San Antonio, TX.
- Ruchlmann S; Atkinson L; Brun C; Butwick AJ. Massive postpartum hemorrhage following vaginal twin delivery in a patient with acute fatty liver of pregnancy. SOAP 42nd Annual Meeting, May 2010, San Antonio, TX.


---

**INVITED TALKS AND GUEST PROFESSORSHIPS**


- Brendan Carvalho, MD, spoke about Strategies to optimize analgesia for labor at the Kaiser Permanente Annual Anesthesiology Symposium in San Francisco, CA in April 2010.


- Brendan Carvalho, MD, spoke about Optimizing post-cesarean analgesia at the Combined Anaesthesia and Obstetric Academic Meeting at the Groote Schuur Hospital, in Cape Town, South Africa, in February 2010.

- Brendan Carvalho, MD, spoke about 1) Analgesia for labor: strategies to optimize maternal and fetus outcomes, and 2) Post-cesarean section analgesia at the Annual Wintersymposium in Leuven, Belgium in January 2010.

- Martin Angst, MD, spoke about Surrogate markers of OIH in humans: Are they valid and where do we stand? at the Spring Pain Conference in Grand Cayman Island in April 2010.

- Sean Mackey, MD, PhD, spoke about Mechanisms & neuroplasticity of pain: clinical implications at the American Academy of Pain Medicine 26th Annual Meeting in San Antonio, TX in February 2010.

- Sean Mackey, MD, PhD, spoke about Human brain activity identifies the presence or absence of pain at the American Academy of Pain Medicine 26th Annual Meeting in San Antonio, TX in February 2010.

- Sean Mackey, MD, PhD, spoke about The perioperative patient on chronic opioids at the Stanford 23rd Annual Anesthesia Update, in Big Sky, MT in February 2010.

- Sean Mackey, MD, PhD, spoke about The challenges of complex regional pain syndrome at the Stanford 23rd Annual Anesthesia Update in Big Sky, MT in February 2010.

- Sean Mackey, MD, PhD, spoke about How functional neuroimaging will transform the diagnosis and treatment of central neuropathic pain conditions at the American Academy of Neurology 62nd Annual Meeting in Toronto, Ontario, Canada in April 2010.

- Sean Mackey, MD, PhD, spoke about Prefrontal cortical systems in low back pain versus generalized anxiety disorders at the Spring Pain Research Conference in Grand Cayman Island in April 2010.

- Sean Mackey, MD, PhD, spoke about Virtual reality & pain management at the American Pain Society 29th Annual Meeting in Baltimore, MD in May 2010.

---
Sean Mackey, MD, PhD, spoke about *Mechanisms & neuroplasticity of pain: clinical implications* at the Potomac Center for Medical Education Symposium in Baltimore, MD in May 2010.

Sean Mackey, MD, PhD spoke about *Overview of the treatment of acute and chronic pain in the patient with a history of addiction* at the American Psychiatric Association 163rd Annual Meeting, Invited Speaker in New Orleans, LA in May 2010.

Ian Carroll, MD, MS, spoke about *Chronic postsurgical pain* at Grand Rounds in the Department of Plastic Surgery, Johns Hopkins University, Baltimore, MD on May 6, 2010.

Ian Carroll, MD, MS, spoke about *Psychological impairment influences pain duration following surgical injury* at the NIH Symposium on Advances in Pain Research in Bethesda, MD on May 5, 2010.

Ian Carroll, MD, MS, spoke about *Pain management: an overview for the Marfan Symposium* at the 3rd Annual Regional Marfan Educational Symposium in Rocklin, CA on May 1, 2010.

Ian Carroll, MD, MS spoke about *Pharmacologic and interventional management of cutaneous nerve injuries* to the Association of Extremity Nerve Surgeons Meeting in Portsmouth, NH on April 25, 2010.

Sean Mackey, MD, PhD, was symposium chair and speaker about *Introduction to NIH grants* at the American Academy of Pain Medicine 26th Annual Meeting in San Antonio, TX in February 2010.

Sean Mackey, MD, PhD, spoke about *Central pain systems: lessons from functional neuroimaging* at the University of Pennsylvania in Philadelphia PA in March 2010.

Sean Mackey, MD, PhD, was symposium chair and speaker about *Mechanisms & neuroplasticity of pain: clinical implications* at the American Pain Society 29th Annual Meeting in Baltimore, MD in May 2010.

---

**Promotions, Awards, and Honors**

- Dr. Ian Carroll was appointed to Assistant Professor of Anesthesia at the Stanford University Medical Center, effective 1/01/10.

- Dr. Rebecca E. Claure was reappointed as Clinical Assistant Professor of Anesthesia (Pediatric Anesthesia), effective 1/15/10.

- Dr. Jeannie L. Seybold was promoted to Clinical Assistant Professor of Anesthesia (Pediatric Anesthesia), effective 2/10/10.

- Dr. Birgit Maass was appointed as Clinical Assistant Professor of Anesthesia (Pediatric Anesthesia), effective 3/01/10.

- Dr. Brenda Golianu has been promoted to Associate Professor of Anesthesia at the Stanford University Medical Center, effective 4/01/10.

- Dr. Periklis Panousis was promoted to Clinical Assistant Professor of Anesthesia, effective 4/16/10.

- Dr. Mackey has been awarded a five-year NIH NIDA K24 Mid-Career Development Award for *Neuroimaging and Mentoring in Translational Pain Research*.

- Drs. Timothy Angelotti and Juli Barr graduated from the medical school’s 2009 Faculty Fellows Program. This program connects fellows and mentors from clinical and basic science departments into small groups to explore the careers and life journeys of Stanford leaders. Dr. Angelotti said, “[It] gave me the opportunity to network with faculty from different departments at a similar stage in their academic careers. I had the opportunity to listen to various leaders from within Stanford describe how they navigated their careers. … I was able to see myself and how others see me, and learn to interact with people of different personality styles. It was a beneficial experience.”
LETTER TO EDITOR

from Leo Stemp, MD leos@cox.net
to Rick Novak

Rick, in your commentary about the January Gas Pipeline case, you wrote about what clinical tests are reliable at excluding “clinically significant residual curarization”—but you didn’t mention what exactly IS “clinically significant” residual neuromuscular blockade.

To be more accurate, I would suggest that what really matters is three specific aspects of neuromuscular function which must be unequivocally adequate at the end of every case: The patient must have the ability to maintain a patent airway, the ability to protect the airway (via cough), and the ability to ventilate adequately.

So the real question is, what specific clinical tests correlate with those three functions? All anesthesia practitioners should have unequivocal knowledge of that, because they’ll employ those tests in just about every case they do.

Neuromuscular function is not my field of expertise, but AFAIK, protrusion of the tongue has been shown to correlate with the ability to maintain a patent airway; five-second sustained head lift has been shown to correlate with ability to protect the airway; and an adequate ETCO2, or adequate SpO2 on room air, to correlate with the ability to ventilate adequately. A great article about that is: Pavlin, et al. Recovery of Airway Protection Compared with Ventilation in Humans after Paralysis with Curare. *Anesthesiology* 1989;70:381-85 (attached). This article is well written, easy reading, and gives great perspective. IMO, it should be on the required reading list of key papers for every resident.

One other important clinical point should be appreciated by the residents, especially as the operative population ages:

There’s a big difference between the ability to ventilate adequately at the end of the case, and the ability to sustain that adequate ventilation. Our experience suggests that two factors are relevant to the latter: endurance and the clearance of NMBs and/or volatile agents.

In intensive care, endurance is a common concern; it is defined practically as the ability to remain successfully extubated (i.e., not needing to be reintubated) after weaning from mechanical ventilation. The best, easily employed test to measure endurance is called the rapid shallow breathing index (RSBI), or f/VT (resp rate divided by tidal volume in liters). A quotient of less than 100 has been shown to correlate with successful extubation.

The clearance of NMBs and volatile agents comes into play, especially in elderly patients, as demonstrated by the following curious phenomenon we’ve noticed recently: In the last year, we’ve had four elderly patients (none of whom was robust) who extubated easily and then gradually developed clinical respiratory failure (rapid shallow breathing*) and obtundation in the PACU. The first three were reintubated and ventilated, and the fourth was treated with BiPAP. All recovered in 2-4 hours and were easily extubated onto nasal cannula without specific management other than giving them time (suggesting that there was no acute cause of the respiratory failure, such as aspiration or acute CHF or the like).

It’s our conclusion that these cases are a result of two factors: First, borderline endurance because of depleted muscle mass and deconditioning common to many elderly operative patients; and second, residual NMBs (not detected by any of the three tests noted above) and/or more likely, residual volatile agent, that exacerbated the borderline endurance. (All of these four patients received multiple doses of rocuronium during the case, and all were given reversal agents prior to extubation at the end of surgery (with “full” reversal documented by nerve stimulator in at least two of them); and in none of the cases was desflurane the volatile agent used.)

All of which lead me to the following conclusion: In debilitated and/or very elderly patients, avoid multiple doses of NMBs, and whatever drugs you use should be as short acting as possible.

Great cases, Rick, Leo

* PS. The attached discussion of ventilator failure might be useful.
**Life’s Transitions: Babies**

Joshua Kirz (Pain Clinic Psychologist) and Nina Kirz (Child Psychiatry) welcomed Aaron and Zachary to the world on January 30, 2010. They weighed in at a svelte 4.5 lbs each but are otherwise healthy and happy. The psychology and psychiatry backgrounds of the proud parents will undoubtedly come in handy (or prove a hindrance, as the case may be).

Aaron and Zachary Kirz

Brooks H. Rohlen and his wife, Rachel, announced the birth of their son, Beau Smith Rohlen, on March 3, 2010. He weighed in at 5 pounds, 9 ounces, and was 18 inches long. Both mom and baby are doing well. Hats off to Steve Lipman, who provided a textbook epidural including a well-thought-out consent, flawless placement, and height/weight-adjusted dosing. Rachel felt contractions but no pain. Looking back on the experience, I realize this was literally a demonstration of epidural excellence. A big thanks to Darrin Flynn, who volunteered in the final moments to hold our video camera.

Beau Rohlen

Bill Hightower and his wife, Tira, announce the birth of Claire Aspen Hightower Feb 7, 2010, after a loooooong labor. She weighed 7 pounds 12 ounces and measured 20.5 inches. Alex Butwick administered a fantastic epidoodle (LOR at 3.5cm?!), and Javier Lorenzo did some expert troubleshooting in the middle of the night. Amazingly, she was born on my [Bill’s] birthday!

Claire Aspen Hightower

Elated parents, Aileen Adriano and her husband, Buddy, are thrilled to announce the arrival of their daughter, Emilia Rose, January 8, 2010. She arrived one week late, but nonetheless healthy, at 8 lbs, 14 oz and 21.5 inches in length. They thank the exemplary anesthesia team that helped bring their greatest joy into this world: Drs. Ed Riley, Alex Butwick, and Jenna Hansen. The feel blessed to have received such wonderful care.
Sara Goldhaber-Fiebert and her husband, Jeremy, with happiness and thanks announce the birth of their daughter, Miriam Goldhaber-Fiebert, on Monday morning, January 4th, 2010. At 7 pounds 14.8 ounces, 20 inches, and 36cm head circumference, she is beautiful and healthy. Miriam joins her older brother, Eytan. Sara and baby are both doing well.

Matt Jolley and his wife, Kara, welcomed Mark “Marco” Townsend Jolley, who showed up a month or so early, evidently not wanting to miss any of the kiteboarding season. He left the IVs behind and now chows down at home. We would like to thank the stellar OB, pediatrics, and OB anesthesia staff, particularly Eric “Cool Hands” Gross and Dr. Atkinson for their stellar epidural.