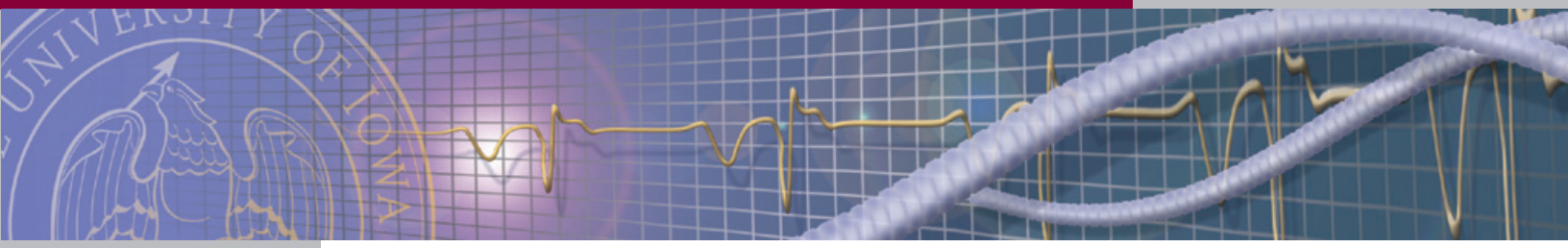
University of Iowa Hospitals & Clinics
University of Iowa Health Care

Department of
ANESTHESIA
The University of Iowa



Spring 2009

Inside This Issue

Newsletter Staff

Editor-in-Chief
Tyrone Whitter, M.D., Ph.D.
tyrone-whitter@uiowa.edu

House Staff Representative
Smith Manion, M.D.
smith-manion@uiowa.edu

Managing Editor
Barb Bewyer
barbara-bewyer@uiowa.edu
319-353-7559

Consultant and Contributor
Jim Lane
james-lane@uiowa.edu

NOTES FROM THE Chair

Why I Donate to the Foundation for Anesthesia Education and Research

One of the most important events in recent department history was the awarding of a Foundation for Anesthesia Education and Research (FAER) grant to Dr. **Christina Spofford**, for her project entitled, "Neurotrophic Factor Expression in Post-Operative Pain." This was the first FAER award won by a member of this department in many years - in fact, not sense Christina's mentor, Dr. **Timothy Brennan**, Gergis Professor of Anesthesia, won it in 1995. It is a huge step forward in the rebuilding of our academic position, along with the endowments provided by Drs. Sam Gergis and Gil Kinyon, and others in the planning stages.

What is the Foundation for Anesthesia Education and Research? FAER was founded by the American Society of Anesthesiologists (ASA) in 1987, to consolidate and expand upon the "ASA Young Instigators Awards" which had been evolving since the early 1970s (some of you may remember the Parker B. Francis Awards). Since its founding, FAER has made well over $20,000,000 in grants to young anesthesiologists! FAER is easily the largest and most important source of funds for "early career" research in our specialty. It recently instituted a number of scholarships for medical students interested in anesthesiology. Our department was selected as one of 33 host institution sites for the summer of 2008, and we welcomed Ms. Kara Siegrist, medical student at the University of Kansas. Kara, as well as our department, enjoyed the benefit of this experience. We look forward to hosting more students in the future.

Celebrating the department's first FAER grant award in 13 years: Christina Spofford (2008 recipient), Mike Todd, Tim Brennan (Christina's mentor and 1995 recipient)

Where does FAER get its money? The largest single source is the ASA, which gets it from you. The remainder comes from a long list of other donors, both organizations and individuals. I'm pleased to be one of those donors, and pleased that the Iowa Society of Anesthesiologists has also donated. I'd also like to ask you to help FAER - because FAER helps all of us.

Why do I donate to FAER, and why should you consider doing so? The answer is easy. I think it's important and I view it as a personal obligation. Let me elaborate.

As I've said before, I believe that ALL anesthesiologists have an obligation to do whatever they can to insure the future of their profession. This means that we must work to ensure the health of our

academic medical centers. This isn't someone else's job. As I've said in previous newsletters, it has become an unfortunate fact that anesthesia departments can no longer fund their educational and research activities from clinical revenues alone. Reimbursement rates have fallen, and the overhead needed to provide the faculty nonclinical time, educational and research support personnel, and research funds has increased. This has resulted in most academic programs becoming progressively dependent on their home institutions for supplementary support. Unfortunately, these institutions - hospitals and colleges of medicine - are also being economically squeezed. Hospitals need to maintain clinical services and are sometimes less interested in supporting a more abstract "academic mission." Colleges are interested in training medical students and in generating research funds. Since most departments of anesthesia play a minimal role in basic student education (although this is NOT true at Iowa) and generate relatively nominal research funds (compared with departments of internal medicine, pediatrics, etc.), they typically rank low on the priority list for support.* It isn't surprising that a number

*** I'm speaking broadly. Our department has been incredibly fortunate in the support we've received from the UI Carver College of Medicine and the Hospitals. Many other departments have not had such enlightened support.**

of residency programs have been closed in recent years or that the academic productivity of the remaining programs has decreased. This was obvious to me as the editor-in-chief of *Anesthesiology*. Even a cursory look at the sources of submitted manuscripts to the Journal shows a progressive fall in both the absolute numbers and fraction of papers coming from American departments.

Our future lies with our youngest members - those bright individuals who will lead the academic programs in the future. Such people don't just "appear." To grow academically, they need protected time and financial support. Where does this support come from? Departments provide the bulk, although, as I've said, this is getting harder. The National Institutes of Health does not provide funding for the youngest individuals, and very little for anesthesiology. So, we must turn to organizations like FAER. FAER provides substantial funds for young scientists and mandates that recipient departments also provide substantial academic time to permit the productive utilization of these funds.

FAER's track record in helping develop the careers of young academic anesthesiologists is simply amazing. This was reviewed by King and Hug, in an article published in *Anesthesiology*.[1] Two hundred ninety-six FAER grant recipients were responsible for over 3,000 publications and received over $100,000,000 (!) in subsequent grant funding - from an initial FAER investment of just over $5,000,000 (at that time). I challenge anyone to find a better "return on investment" example anywhere.

I also have a more personal perspective on this issue. I was one of those young faculty members who benefited from FAER. FAER (or, at that time, the ASA Research Committee, FAER's direct predecessor) gave me my very first peer-reviewed research grant. I credit FAER with starting me on what has been an exceptionally productive career. And dozens of my friends and colleagues can say the same thing.

Why should you bother to donate hard-earned dollars to support research, often research that is hard to understand or which seems to have little to do with your daily activities? The answer is simple. When a profession ceases to contribute to the intellectual foundations of its practice, that profession will become progressively obsolete. We must create new knowledge; all of the continuing medical education reviews of **previously acquired** wisdom won't help. Medicine will move forward, and we must move with it. If we become dependent on other professions for our intellectual nourishment, then we will lose our place as equals. Young students will cease to see anesthesiology as a vibrant specialty and will go elsewhere. And the practice of anesthesia will cease to be physician based.

I've donated to FAER for many, many years - and I intend to continue doing so as long as I live. I can't think of a better way to insure that anesthesiology will be with us long after I'm gone. You should consider doing the same.

Michael M. Todd, M.D.
Chair, Department of Anesthesia

1. King CP, Hug CC. Survey of former recipients of research funding from the American Society of Anesthesiologists and the Foundation for Anesthesia Education and Research. Anesthesiology 1998; 88:519-524

ADMINISTRATOR'S Corner | Updating the Anesthesia Administrative Team

John Stark, M.B.A.

In the spring of 2007, I introduced you to our administrative staff. As with all dynamic organizations, we've seen some changes since that time, so I'd like to provide you with a new listing of our primary administrative contacts, listed alphabetically. As I'd written before, the Department of Anesthesia is very fortunate to have a strong group of dedicated administrative staff, each with a well-defined area of emphasis, each playing a vital role in our department's overall management structure.

Barb Bewyer
Medical Editor and Special Projects Coordinator

Barb's role within the department has evolved over the years as she has transitioned from the responsibility of managing editor of *Anesthesiology* to new functions. Chief among these responsibilities is managing editor for the department's newsletter, which as you can imagine is no small feat.

Barb's other primary duty is alumni and external relations, whereby she has been tasked by Dr. Todd to foster our relationships with our former colleagues, from trainees to former faculty and staff and everyone in between. Our goal is to keep in contact with everyone in our "anesthesia family" on an on-going basis.

Rex Dawson
Grant Manager

Rex is the newest addition to our administrative team, as he began in the department in September 2008, replacing Ms. Cindy Pierce. He brought with him a wealth of experience in a variety of financial arenas. His first University of Iowa (UI) position was in the Office of Grant Accounting, where he worked for 11 years. This gave him a strong foundation in the university's unique financial structure. Rex later spent 8 years as the chief financial officer for the Cedar Rapids Housing Authority, leaving this post prior to the flood of 2008, which decimated many housing areas maintained by his unit, including the first level of the building housing his office.

Rex's role is to assist faculty and research staff pre-award with issues such as grant applications, industry contracts and budgets, followed by post-award management of grant accounts.

Kris Jones
Billing Manager

Kris has been with the department for more than a decade, following many years of service in the UI Hospitals and Clinics Business Office. Needless to say, in the continuous financial uncertainty in today's economy, maintaining strong control over the billing and collections operation is key to our departmental success.

Since the last update, Kris and her team have been instrumental in the smooth, relatively painless transition to our new IDX anesthesia billing software. Their tireless efforts helped to insure that the department did not experience a systems-driven financial crisis as it did in 2003, with the IDX patient accounting/scheduling implementation. They were meticulous and careful, and made sure the department's concerns were addressed before the system went live. The next challenge involves our installation of Epic and its electronic anesthesia record. Trusting that Kris and her team will approach this in the same manner as IDX, we are in capable hands.

Jim Lane
Human Resources Manager

Jim took on the challenging role of managing our departmental human resources (HR) issues in September 2008. As previously written, Jim has been with our department for 10 years now and has helped us in a variety of ways. He's had experiences with our research functions, our patient simulator, and most recently with the anesthesia OR workroom.

This new role for Jim is one of the most important within our department – coordinating the recruitment and hiring of our providers while simultaneously managing all other HR needs of the department's staff. It's a big task, but one that Jim is already living up to.

ADMINISTRATOR'S Corner
(continued)

Becky Litwiller
Secretary to the Chair

Becky became Dr. Todd's secretary in 2007, following stints that began in 2001 in both the UI Departments of Surgery and Cardiothoracic Surgery.

Becky works diligently to maintain Dr. Todd's ever-changing schedule, to be sure he's on task and where he needs to be. Becky is also heavily involved with the faculty recruitment process and visiting professor scheduling. She coordinates all visits and manages the volumes of paperwork associated with each. As we may have multiple of each type of visit during any given month, Becky does an outstanding job of keeping everything straight.

Jenni Nicholson
Accountant

Jenni started with the UI in 1996 and has been in the Department of Anesthesia since 1997. Jenni has moved up the ladder with progressively increased responsibilities since that time, with roles in human resources, payroll, and accounting. She now serves as our department accountant, ensuring our supplies are purchased and all our bills are paid, including, most importantly, our payroll. She is tremendously helpful with my many financial projects and of course, our annual budgeting.

Jenni's various departmental experiences and her years of dedication continuously help to keep us in line.

As you work with the members of our administrative team, be sure to extend your appreciation for all they do for UI's Department of Anesthesia!

John Stark, M.B.A.
Department Administrator

Interesting Facts
about Mohamed M. Ghoneim, M.D.

He completed his medical school education at Ain Shams University, Cairo, Egypt in 1957.

His post-graduate education took place in Egypt, England, Norway, and Canada.

He joined the faculty at Iowa in 1967, earned emeritus status in 2005, and continues to actively contribute to the department.

He has presented at numerous meetings throughout the world.

He continues to teach and mentor medical students, residents, fellows and SRNAs.

He has published well over 100 articles in peer-reviewed publications, as well as numerous book chapters and texts.

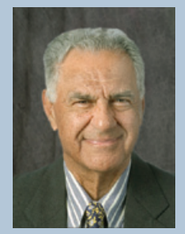
His research focus has been psychopharmacology, particularly the effects of drugs on human cognition and memory; pharmacology of drugs related to anesthesia; kinetics, drug-drug interaction and effect of disease on the action of drugs.

He has been awarded multiple research grants throughout his career, including NIH funding.

His professional affiliations are multiple; his contributions to committees at the departmental, collegiate, national, and international level are numerous.

He is married to his lovely wife, Shams M. Ghoneim, a UI alumnus and recently retired 31-year researcher at the UI Colleges of Dentistry and Medicine. Together, Mohamed and Shams have two children.

Not surprisingly, he enjoys the friendship and respect of everyone he meets.



Spotlight on
MOHAMED M. GHONEIM, M.D.

Barb Bewyer, our energetic editor, asked me to write about my professional journey. Initially, I expressed reluctance because I have led an ordinary, mundane life and if everyone has a story to tell - why me? Be as it may, here are some of my recollections.

I was born and raised in Egypt. My father was a school principal and my mother was a housewife. My role model who inspired me to become a physician was an uncle who was an academic physician and who excelled even more as an administrator. He was the president of Cairo University, the oldest and largest of Egypt's universities for many years. Another figure looms high in my choice of anesthesia. When I was in my first clinical year as a student, a team which included a thoracic surgeon, an anesthesiologist, and an operating room nurse from the University of Copenhagen, Denmark were invited to visit Egypt to demonstrate their work. One of their selected patients was a close relative of mine. The young anesthesiologist whose name was Dr. Ole V. Secher impressed me most. Years later, I would meet him again in Iowa City, where he visited often, because he was a close friend of the late Dr. **Jack Moyers**. After he passed away, I was invited in the autumn of 1995 as a guest speaker at the Danish Society of Anesthesiologists meeting in Copenhagen. I began my talk by saying "I wish you would have invited me several years ago." My audience was obviously astonished until I explained to them how Dr. Secher influenced my career choice and that I would have loved it if he could be in the audience. Incidentally, he was not only a pioneer anesthesiologist but also a hero in ordinary life. He joined the underground movement during the Nazi occupation in the Second World War and helped in saving many lives from shipments to the extermination camps.

Returning to my beginnings, upon finishing my residency in anesthesia, in the same university hospital where I graduated, I read an advertisement for applications for a grant to travel to the United Kingdom for training and studying for the fellowship of the faculty of anaesthetists of the Royal College of Surgeons (FFARCS) of England; later, it became the fellowship of the Royal College of Anaesthetists (FRCA), a separate royal college. I was fortunate to have been chosen. I was also fortunate in that the professor of anaesthesia at Oxford, Sir Robert Macintosh, had just returned from a short visit to Egypt where the local anesthesiologists were hospitable to him and recommended me. So I was chosen from among a long list of applicants to the prestigious department. Sir Robert was a pioneer in anaesthesia. Like others during the 1920s, he started his career as a surgeon. Then he decided to become an anaesthesiologist and had a successful private practice in London. At that time, one of the magnets of industry who manufactured small British cars, Lord Nuffield, had an acute appendicitis and needed surgery. Sir Robert gave him the anaesthetic and developed a good rapport with him. Shortly afterward, Lord Nuffield gave money to Oxford University to establish several endowed chairs in medicine, one of them being for anaesthesia. The administrators at the university were appalled stating, "We do not need a chair in anaesthesia. Anybody can give anaesthesia." Lord Nuffield was reported to reply, "That is why we need a chair there!" Thus, Sir Robert became the first professor of anaesthesia in Europe and the second in the world after Ralph Watters of Madison, Wisconsin.

My detour to the university hospital in Oslo, Norway, my return back to Egypt, and then my leaving for good would take too long to write about. The story of my interest in investigating effects of drugs on memory and cognition is rather simple. I have been fascinated all my life by the variability of mental abilities of people. The pharmacology of general anesthetics is the essence of anesthesia. So, it made a lot of sense to me to explore and understand how some drugs, which include the ones we use every day in practice, impair memory and cognition, while others may improve them. The field was wide open then and remains so, although we know now more than we did then.

During my life as a clinician, I have been fortunate to experience the improvements in inhaled and intravenous anesthetics, the development of sophisticated monitors, and the establishment of critical care and pain medicine. But we still have a long way to travel. The anesthesia workforce in many academic departments remains insufficient for their needs. We need also to attract residents who would be willing to spend one or two years doing research before embarking on an academic career. In this way, they would be more suited to compete effectively for research grants. Doing research should be a source of joy, thrill and amazement that cannot be attained with the heavy burden of a clinical load. The same goes with teaching. I have faith that a good many academic departments will get there, though I will not be there to see it.

Mohamed M. Ghoneim, M.D.
Professor Emeritus

The Center for Pain Medicine and Regional Anesthesia is a unique clinical facility that was designed to fully utilize the clinical expertise of the pain medicine staff...

Spotlight on a Clinical Division

Pain Medicine

The University of Iowa Department of Anesthesia Pain Medicine Division, through its home base in the Center for Pain Medicine and Regional Anesthesia, provides clinical care to a wide variety of patients in both the inpatient and outpatient settings. The Center for Pain Medicine and Regional Anesthesia is a unique clinical facility that was designed to fully utilize the clinical expertise of the pain medicine staff and is unique in the United States with its location directly adjacent to the main operating room and the provision of both acute and chronic pain care in the same facility. The Center has a waiting area, six examination rooms, two psychological counseling rooms, six procedure rooms, two fluoroscopy suites, and a four-bed recovery area.

The Acute Pain Call Team provides inpatient consultation and management for acute postoperative pain, pain following traumatic injury, and for patients with other acute intractable pain conditions. The Acute Pain Service is actively involved in evaluating patients for acute postoperative pain control needs, developing treatment plans, and carrying them out. In the vast majority of cases, patients are transported to the Center for Pain Medicine and Regional Anesthesia prior to their surgical procedure where a wide variety of techniques are employed to provide perioperative anesthesia and postoperative analgesia. In patients undergoing thoracotomies, major chest procedures, and abdominal procedures, the preoperative placement of thoracic epidural catheters and initiation of analgesic infusions intraoperatively allows these patients to awaken from their surgical procedure with minimal discomfort. Once in the recovery room, they are evaluated again for adequate analgesia and adjustments are made as necessary to provide high quality analgesia. In addition, a wide variety of regional anesthetic/analgesic techniques and peripheral nerve catheters are used to provide analgesia after major orthopaedic procedures and some soft tissue procedures. Examples of these techniques include cervical paravertebral, interscalene, supraclavicular, and infraclavicular, as well as thoracic and lumbar paravertebral, femoral, sciatic, and popliteal nerve blocks. These blocks are performed with nerve stimulation techniques, ultrasound-guided techniques, or a combination of the two. Postoperative epidural analgesics, intrathecal analgesics, and peripheral nerve catheters are managed by the Acute Postoperative Pain Service with a team consisting of staff physicians, fellows, residents, and nurses. Inpatient services are offered 365 days a year. In addition, the Acute Pain Service provides inpatient consultation service for patients with acute intractable pain, chronic pain, or cancer pain. During the 2007-2008 year, the Acute Pain Service treated 3,201 patients.

Richard W. Rosenquist, M.D.
Director

Esther Benedetti (faculty) observing John Sheehan (former fellow) perform a procedure

The Center for Pain Medicine and Regional Anesthesia provides outpatient treatment for a wide variety of patients with chronic pain. Some common pain syndromes that are managed include low back pain, myofascial pain, neuropathic pain, musculoskeletal pain, and cancer pain. Patients seen in the clinic receive an extensive evaluation leading to the development of a treatment plan. Treatment plans are typically multidisciplinary and involve the patient, staff within the clinic, referral to other physicians, physical therapy, psychological interventions, assistive devices, and rehabilitation to address the physiologic, sensory, affective, cognitive, behavioral, and sociocultural events leading to the pain response. The clinic itself offers a wide variety of diagnostic and interventional procedures for chronic and cancer pain. These include things such as trigger point injections, facet and sacroiliac joint injections, sympathetic blocks, epidural steroid injections, transforaminal injections, discography, neurolytic injections, medial branch blocks, radiofrequency ablation, spinal cord stimulation, and intrathecal drug administration.

The Center for Pain Medicine and Regional Anesthesia serves as an accredited training site for pain medicine fellows in conjunction with the Iowa City Veterans Administration Hospital Pain Clinic, via the Accreditation Council for Graduate Medical Education. Pain medicine fellows pursue a one-year post-residency fellowship in pain medicine after which they are eligible to take the written examination leading to board certification in pain medicine. This program is highly competitive and receives well over 100 applications for three spots each year. The fellowship will expand to a fourth fellow to address changes in the pain medicine fellowship training curriculum and to recognize the increasing demand for pain medicine services.

Richard W. Rosenquist, M.D.
Professor
Director, Center for Pain Medicine and Regional Anesthesia

DIVISION TEAM Profile

The Center for Pain Medicine and Regional Anesthesia Team

Rick Rosenquist (director), Teresa Schmidt (secretary)

There is no question that evaluation, treatment, and successful outcomes for patients with acute postoperative pain, chronic pain, or cancer pain could not be developed or implemented without the outstanding efforts and dedication of the large multidisciplinary team that makes up the pain medicine division. A quick count of the people involved with the provision of acute, chronic, and cancer pain care reveals a number that exceeds 40. This includes pain medicine staff physicians, regional anesthesia staff physicians, pain medicine fellows, regional anesthesia fellows, residents, acute postoperative pain nurses, chronic pain nurses, a medical assistant, a doctor of pharmacy, a psychologist, schedulers and billing experts, secretarial and fellowship training support staff. This large multidisciplinary team works together to provide patient care, as well as develop and implement effective treatment programs for patients. We have eight pain fellowship trained pain medicine physicians and are in the process of adding two additional pain medicine staff physicians. They have trained at a variety of institutions and have expertise in a number of areas including complementary and alternative medicine, acupuncture, advanced interventional therapies, acute postoperative pain, and research.

Our acute pain program is dedicated to the prevention and treatment of perioperative pain. Acute postoperative pain nurses arrive early each morning, well ahead of the physicians, in order to prepare the procedure rooms with equipment and make room assignments for each patient so that the indicated regional anesthetic can be performed quickly and efficiently in the morning, and patients delivered to the operating room with their postoperative analgesic catheters or nerve blocks in place. Infusion solutions prepared by the pharmacy are placed into pumps and delivered into the operating room where they are initiated before the patient awakens from their anesthetic. The nurses coordinate and manage documentation for daily care and billing and accompany the team consisting of the acute postoperative pain staff physician, fellows, residents and medical students

Allison Hanson, Bob Temple, Deb Even - nurses who manage the care of patients with acute pain

on rounds to make certain that the care is coordinated and that treatment plans developed during rounds are implemented. They also serve as the point of contact for inpatient consultative services during the day before the pager is taken over by a fellow or resident for night call.

For patients receiving outpatient care, the first point of contact is a member of the scheduling staff. They coordinate available resources, schedule patients, reschedule when necessary, and obtain all necessary insurance and billing information. Once checked in, the nurse or medical assistant brings the patient to the proper room, obtains vital signs and confirms the medications before the physicians see the patient. In addition, they assist with a large variety of interventions performed in the exam and procedure rooms and in the fluoroscopy suites, handle uncounted number of phone calls for medication refills and patient questions, provide patient education and instructions, obtain preauthorization, and coordinate care. We are extremely fortunate to have a full-time PharmD in the Center for Pain Medicine and Regional Anesthesia. Her valuable expertise in providing medical therapies, avoiding drug interactions, maximizing the beneficial effects of drug therapies, and providing education to the hosts of fellows, residents, interns and medical students that rotate through the clinic has been invaluable over the years. Our full-time psychologist not only provides excellent care for the patients and helps us determine when patients are appropriate for various advanced interventional therapies, but provides education related to psychological interventions for the fellows. Although it is never the prettiest part of the process, in the end, the clinic would not survive without sending bills and collecting for services rendered. Our billing group works hard to keep up with the ever-changing billing environment and the requirements

L-R: Clerks Tammy Taylor-Bass, Amy Schrader, and Carol Mullen at work in the reception area

necessary to develop appropriate bills, code them and collect on them. Finally, secretarial support and coordination of the fellowship activities through our division secretary is critical to the survival of the training programs. Her ongoing efforts to manage the Pain Medicine and Regional Anesthesia Fellowship, address the graduate medical education requirements, and keep us abreast of the ever-changing requirements of the Accreditation Council for Graduate Medical Education necessary to maintain certification as a fellowship training site are invaluable.

We are blessed to have a phenomenal multidisciplinary team ranging from clinicians to support and billing staff that makes this center an ongoing success, allowing us to look forward to a future of providing outstanding care to the patients with pain from Iowa and beyond.

Richard W. Rosenquist, M.D.
Professor
Director, Center for Pain Medicine and Regional Anesthesia

It Takes a Team...

The Team of the Center for Pain Medicine and Regional Anesthesia

Faculty
Richard Rosenquist, M.D., Director
Anke Bellinger, M.D.
Esther Benedetti, M.D.
Timothy Brennan, M.D.
Peter Foldes, M.D.
Anthony Han, M.D.
Jeanette Harrington, M.D.
Venkateswara Karuparthy, M.D.
John Laur, M.D.
Anil Marian, M.B.B.S., M.D., F.R.C.A.
Douglas Merrill, M.D.
Robert Raw, M.B., Ch.B.
Rapipen Siriwetchadarak, M.D.
Christina Spofford, M.D., Ph.D.
David Swanson, M.D.

Nurses
Melissa Broderson, R.N.
Sue Davisson, R.N.
Deborah Even, R.N., B.S.N.
Allison Hanson, R.N.
Trudy Laffoon, R.N., B.S.N.
Nicole Ranney, R.N.
Robert Temple, R.N., B.S.N.
Marie Voegele, R.N.
Monica Wilson, R.N.

Psychologist
Amy Stockman, Ph.D.

Pharmacist
Lee Kral, Pharm. D.

Fellows
James Brunz, M.D.
Jules Marie Chehade, M.D.
Hai Duong, M.D.
Amer Nouh, M.D.
Bhavin Vyas, M.D.

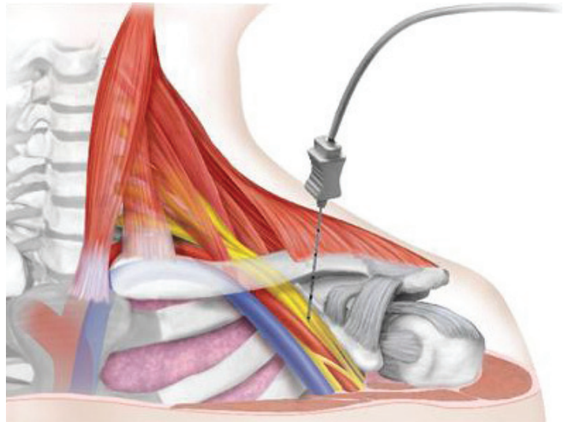
Medical Assistant
Stacy Moore, M.A.

Secretary
Teresa Schmidt

Clerks
Carol Mullen
Amy Schrader
Tammy Taylor-Baas
John Widen (student clerk)

Billing Staff
Kris Jones, Manager
Arras, Kim
Heno, Lisa
Meyer, Annette
Thompson, Lois
Webber, Vicki
Oehl Sheely, Carla

L-R: Nicole Ranney, Monica Wilson, Melissa Broderson, Stacy Moore, Trudy Laffoon, and Susan Davisson – nursing and medical assistant caregivers to our patients with chronic pain.



Education UPDATE

Providing a Solid Foundation in Regional Anesthesia

Peter Foldes, M.D.

Regional anesthesiology evolved from fortuitous observations and the discoveries of several independent investigators. Without their contributions, we would not have what is known today as modern regional anesthesia. The earliest discovery of what would become the first local anesthetic was in South America where the Inca Indians chewed coca leaves. The Spanish Conquistadores did not believe the reported benefits and effects until Pedro Pizzaro (1515-1571) became curious and tried it. Upon experiencing its effects, coca was farmed, harvested, taxed, and the taxation money used to support the Vatican. In 1653, Bernabé Cobo (1582-1657), a Spanish priest bringing Christianity to the Incas, was the first to describe the anesthetic effects of coca. The next important discovery was the distillation and isolation of the cocaine alkaloid in 1855 by German chemist, Friedrich Gaedcke (1828-1890). In the same year, Edinburgh physician Alexander Wood (1817-1884) combined a syringe with a hollow needle to deliver medicines hypodermally. The final step in the origin of regional anesthesia was ophthalmologist Karl Koller's (1857-1944) topical use of cocaine to accomplish eye surgery in 1884. Due to the addictive properties of cocaine, newer local anesthetics were developed based on the benzoic acid esters of cocaine. In 1904, another German chemist, Alfred Einhorn (1856-1917), discovered procaine, the first useful local anesthetic. Jumping ahead several years, we arrive at modern regional anesthesia practice.

Jennifer Smith, M.D. (CA-2 resident), Molly Kelly, M.D. (intern), and Amer Nouh, M.D. (pain medicine fellow)

Medical students interested in anesthesia residencies search for programs that will provide them with a solid foundation in regional anesthesia. At The University of Iowa there is a solid core of regional anesthesia providers (Drs. **Richard Rosenquist, Robert Raw, Timothy Brennan, John Laur, David Swanson, Anil Marion, Christina Spofford,** and **Peter Foldes**) who impart their unique perspective and skill set to the residents. Developed several years ago by the residency program director and implemented by our division faculty, a formal regional anesthesia curriculum with lectures, learning objectives, and clinical skill sets prepares our residents with the knowledge and techniques to perform advanced regional anesthesia independently. Strong emphasis is placed on proper informed consent and preoperative evaluation, monitoring, positioning, equipment setup, sedation, selection of appropriate local anesthetics and adjuncts, documentation, and the rapid recognition and management of complications.

The Residency Review Committee and the American Board of Anesthesiology require residents to have accomplished 40 blocks by the completion of their residency to be eligible to sit for the boards. The national average for blocks is slightly higher, being 46. Within Iowa's residency program, this is easily eclipsed during the first two-week rotation through the regional service. During this time, a resident will typically perform between 50 to 70 blocks. Residents are offered an elective rotation in their senior year that allows them to return to the service for four weeks, at which time up to 100 more blocks can be performed. This establishes confidence in our graduating residents to function well in any regional anesthesia practice. Iowa provides the combination of a committed regional anesthesia staff, state-of-the-art equipment, terrific patient variety and complexity, and large quantity of regional block procedures.

Major Boateng, M.D. (CA-1 resident), Christina Spofford, M.D. Ph.D. (Associate) checking in on a patient post-procedure

The majority of blocks performed are single shot blocks. These range from interscalene and infraclavicular to femoral and sciatic. As proficiency is demonstrated, the residents move onto more difficult blocks. By the end of their rotation, they have experienced most of the blocks and have learned to place catheters for continuous infusions. The regional rotation is divided so that each resident will spend half of the time in the Ambulatory Surgery Center (ASC) and half in the main operating room (MOR). This is particularly beneficial since the majority of the blocks in the ASC are single shots whereas a greater proportion of the blocks in the MOR are catheter based. More procedures can be accomplished in the ASC over a shorter time frame, thereby increasing familiarity and confidence with the various blocks. The more complex blocks, however, can be experienced in the MOR, stretching our residents' abilities and further increasing technical expertise and confidence.

A typical day begins the night prior to the block being placed. Residents and fellows get together to discuss the patient list and the blocks that would be appropriate for a given surgery. In addition, the first case of the day is usually allocated to the resident who will be providing the anesthesia for that particular patient. Once the blocks are matched to the surgery, the cases are divided ensuring everyone will have an adequate number of blocks to perform. If a particular day is light in blocks, the resident will preferentially do the block, provided it is appropriate for their level of training and skill. At the time of the block, the resident receives instruction from a regional attending physician. Emphasis is placed on sterile technique, anatomy, acquiring the appropriate twitch (or image on ultrasound), the proper dosage, and the proper safety precautions when administering local anesthetics. While the blocks are being placed, there is active dialogue and interchange between attending, fellow, and resident physicians regarding the optimum needle placement and local anesthetic deposition, resulting in the best possible block. Additional instruction is afforded when placing catheters for continuous infusions. All catheters are placed using nerve stimulators and stimulating catheters. This allows instantaneous feedback regarding whether the catheter is on a nerve, and if so, the target nerve. In some instances, the catheters are placed using ultrasound in addition to nerve stimulation. This allows one to not only have a physical reference point (twitch), but also a visual, on-screen, real-time feedback on where a needle and catheter is coursing. When placing these, residents learn the proper means of handling a catheter and the correct sequence in catheter placement. They learn the various "tricks" or maneuvers required to successfully place catheters.

Once a block is placed, the residents are encouraged to test the completeness and adequacy of the block prior to moving the patient from the Center for Pain Medicine and Regional Anesthesia to the MOR. At this stage, one can determine if the block is complete, is setting up appropriately, but perhaps needs more "soak" time, or needs to be supplemented with a rescue block. On the rare occasion when a block needs to be supplemented, the opportunity presents itself to expand knowledge and understanding. It is an opportunity to learn regional anesthesia in a more focused and targeted way. Once the patient has been taken to the MOR, a brief discussion ensues about the block, including a brief critique of the block performance, anatomical considerations, and how to better perform the block in the future. These discussions usually are brief since the residents rapidly become adept at placing the various blocks.

To add to our resident educational experience, several times during the course of the year we sponsor regional anesthesia workshops designed specifically for our residents, allowing teaching and hands-on demonstration outside the clinical setting. In addition, visiting professors are invited to speak in our department. When appropriate, during the course of their visit, we try to organize a workshop expressly for the resident staff. At these events, the residents and the visiting professors can interact one-on-one without being overshadowed by our attending staff. This affords the opportunity to work with and learn from leading experts in the field of regional anesthesia.

Peter Foldes, M.D.
Assistant Professor

Clinical Practice UPDATE

The Ultrasound in Regional Anesthesia

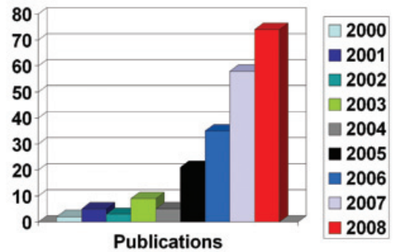
Robert Raw, M.B., Ch.B.*

Robert Raw, M.B., Ch.B.

Introduction

What's the fuss about ultrasound in regional anesthesia? There has been explosive growth in interest in ultrasound-guided regional anesthesia (USGRA) over the last 4 years. This is reflected in journal publications. A PubMed search for articles containing the key words *ultrasound* (title only), *regional anesthesia* (title or abstract), *nerve block* (title or abstract) or *plexus block* (title or abstract) showed an increase from 2 to 74 publications between 2000 and 2008.

Growth in Publications Related to Ultrasound-guided Regional Anesthesia



How Does Using an Ultrasound Aid Regional Anesthesia?

The ultrasound can guide the injection of local anesthetic drugs by aiding seeing the needle and nerve. Sometimes USGRA is possible without needing to see the nerve or the needle. USGRA has led to many claims of improved safety. The studies to prove these safety claims remain outstanding, but the claims seem logical and are plausible in expert opinions.

*Associate Professor; Director, Orthopedic Anesthesia.
Submitted for publication November 25, 2008.
Accepted for publication December 1, 2008.

With large superficial nerves such as the interscalene brachial plexus, the ultrasound can produce clear images of both the brachial plexus roots and the block needle. This is possible because of the size and location of the nerves and because the needle is inserted perpendicular to the angle of insonation. When the needle is parallel to the ultrasound transducer surface, it reflects sound waves 180 degrees back to the transducer, forming strong echo images. An added bonus is that the nerve block can be done via a posterior approach to the plexus. The combination of visualizing the needle and using this posterior approach seems to make it very unlikely a needle could enter the intervertebral foramen (which faces antero-lateral) and cause a spinal cord injection.

With nerves deeper than 4 cm, the nerves tend to become invisible and their relationship to some other visible, non-neural structures can be exploited. For example, the infraclavicular brachial plexus has a constant relationship to the axillary artery. The needle is directed towards a position "9 o'clock" relative to the artery where the posterior cord lies. Perivascular injection will result in a nerve block.

With superficial nerves too small to be seen with ultrasound, visible fascial planes can be used. This is useful with pure sensory nerves which cannot be identified with muscle twitches. An example is the lateral cutaneous nerve of the thigh. Injection is made inferior to the anterior superior iliac spine, above the sartorius muscle but under fascia lata for the normal 90% of nerves, with an added injection above fascia lata for the 10% anatomic variants of the lateral cutaneous nerve of the thigh.

Other nerve blocks are performed seemingly more safely and swiftly using ultrasound guidance than using electrostimulation guidance. For example, with ultrasound guidance the femoral nerve position lateral to the femoral artery is found instantly, and the needle is placed directly on the nerve with one or two needle direction adjustments. Low current electro-nerve stimulation is still used for precision verification. This is particularly useful in obese patients with obscured surface landmarks.

Some nerve blocks fell out of popularity due to high risks for complications and unreliability. Ultrasound guidance has revived them. The axillary block was previously largely abandoned in favor of the faster onset and more reliable infraclavicular block. However, the axillary nerves are highly visible with ultrasound, in particular the "hard to find" musculocutaneous nerve. The supraclavicular brachial plexus block with its pneumothorax risk was similarly abandoned. Ultrasound guidance of the supraclavicular plexus block is claimed to lower the pneumothorax risk (but not eliminate it).

The ultrasound, as a visual nerve localizing technique, is also very useful with diseased nerves that cannot be electro-stimulated. Examples are patients with Charcot-Marie-Tooth disease, and endstage renal failure with diabetes mellitus. USGRA has also lead to the development of many new needle approaches, block sites, and nerve blocks. An example is the transversus abdominis plane block for inguinal hernias.

The ultrasound is not always used in real time for nerve blocks. Sometimes it is used to define surface anatomy and only mark the skin prior to the nerve block done without ultrasound, especially in obese patients. For example, with psoas compartment blocks and epidurals, the ultrasound can identify the vertebral column midline, the transverse processes axial positions, and the interspinous space.

USGRA is also producing evidence that suggests intraneural injections are common with paresthesia and electrostimulation nerve localizing methods, were harmless in these reports, and are associated with the fastest onset nerve blocks [1,2,3,4]. The anesthesia profession is developing new concepts to interpret this new data that conflicts with prior concepts.

Some question whether ultrasound guidance will replace the nerve stimulator in regional anesthesia. It seems the two nerve location modalities will remain complementary to each other and often be used simultaneously. There is also discussion regarding a need for professionals to purchase an ultrasound machine, thus changing the nerve stimulator-based regional anesthesia practice they are satisfied practicing. An ultrasound machine has many uses in the operating room such as aiding IV placements in obese arms, arterial and central line placements, diagnosing a pneumothorax, diagnosing diaphragm paralysis, assessing cardiac output, and assessing fluid status. "Old" regional anesthesiologists may still perform the blocks they competently do with electrostimulation guidance. Ultrasound guidance would only expand those talents. Ultrasound guidance is being taught at the cost of diminished teaching of electrostimulation guidance when using the same number of clinical cases. Recent anesthesiology graduates already seem more competent with the ultrasound than without it. Ultrasound guidance, in the opinion of experts, is the preferable skill to learn. The availability of ultrasound is now a minimum standard diagnostic tool in emergency rooms. Anesthesiologists in the small rural town hospitals borrow these emergency room ultrasound machines, whereas in larger city hospitals, ultrasound machines in the operating rooms are becoming standard equipment as well. Accordingly, regional anesthesia practitioners are encouraged to acquire USGRA skills, as it is very useful and part of a bigger anesthesia trend.

How Easy is Learning Ultrasound-guided Regional Anesthesia?

USGRA is nearly impossible to learn on one's own, and the learning curve is very long. Latest text books are still very poor on exact "how to do it" USGRA tips. USGRA is best learned hands-on with experienced tutors. Live on-patient teaching is done with fellows and residents in structured education programs. For graduated anesthesiologists, workshops with hands-on simulations are needed. The professional societies of the America Society of Anesthesiologists, the American Society of Regional Anesthesia, and the International Symposium on Ultrasound Imaging in Regional Anesthesia offer such courses.[†,‡,§] Toronto University offers an excellent advanced course.[#] The University of Iowa offers a unique weekend course including live USGRA demonstrations, hands-on ultrasound training on phantom nerves, ultrasound scanning of volunteer anatomy, and hands-on ultrasound guided nerve blocks on anesthetized pigs.[**]

Julie Marie Chedade, M.D. (regional anesthesia fellow) and Robert Raw, M.B., Ch.B. (Associate Professor)

Learning USGR also requires new anatomical knowledge with 3-dimensional perspectives. This is best learned from sectional anatomical views and not the standard atlas 2-dimensional views of sequential tissue layers. The 2008 40th edition of *Gray's Anatomy* only has about 10 section views of any relevance to peripheral nerve blocks. Students of USGRA should use MRI-based anatomy books to learn 3-D anatomy. The El-Khoury MRI Sectional Anatomy textbook is excellent with its 1,000 section images in coronal, axial, and sagittal planes.[5] An outstanding specialized USGRA handbook is Dr. Chan's.[6]

Are There Limitations in the Use of Ultrasound-guided Regional Anesthesia?

Yes, there are three major limitations. Firstly, ultrasound image resolution becomes very poor with depth. High frequency sound waves only penetrate 1 to 3 cm deep. Lower frequency sound waves penetrate deeper but produce poorer images. For example, in extreme obesity the transgluteal sciatic nerve may be 16 cm deep. The transgluteal sciatic nerve is nearly invisible at 5 cm and absolutely invisible beyond 10 cm deep. An added challenge with some deep blocks is that the needle needs a steep downwards insertion direction. The needle then forms an angle with the plane of insonation unfavorable to reflecting echoes directly back to the transducer, and the needle becomes invisible. However, skillful needle movement can be used to rhythmically distort the surrounding tissue that can be seen on dynamic (real-time) ultrasound images. Similarly, repeated small injections of 5% dextrose aid seeing the needle tip position. Needles designed with enhanced echogenicity have been disappointing. With a learned seeing-with-the-mind and not seeing-with-the-eye, USGRA can be confidently performed with poor images. When very precise needle position is needed, low current nerve stimulation gives additional confirmation. The ultrasound remains useful in choosing a visual direction for needle exploratory advancement in deep tissues even in nerve stimulation-aided dependant blocks.

The second major limitation is the high cost of the equipment. The prices of ultrasound machines range from $35,000 to $90,000, depending on brand, computing power, and special capabilities. The cheaper machines have slower image refresh rates, poorer images, and less image adjustment options, but are generally still acceptable. Purchase costs, however, are recouped via increased billing income.

† American Society of Anesthesiologists Web site. http://www.asahq.org. Accessed January 26, 2009.

‡ American Society of Regional Anesthesia Web site. http://www.asra.com/education/upcoming-meeetings.html. Accessed January 26, 2009.

§ International Symposium on Ultrasound Imaging in Regional Anesthesia Web site. http://www.peridural.com. Accessed January 26, 2009.

Ultrasound for Regional Anesthesia Web site. http://www.usra.ca/advanced. Accessed January 26, 2009.

** The University of Iowa Department of Anesthesia Web site. http://www.anesth.uiowa.edu/rasci. Accessed January 26, 2009.

The third limitation is the learning challenge. One must learn to see with the mind, learn the fine precision two-handed manipulations of the transducer and needle while not looking at them, learn new sectional anatomy, and acquire block specific skills for each different block.

The individuals who have poor ability creating 3-dimensional mental images of the tissues usually perform peripheral nerve blocks with a "poke until lucky" technique of needle adjustment. The ultrasound would seemingly enhance performing successful nerve blocks for those individuals.

Unfortunately, USGRA is not easy. A deviation of only 1 mm may lose the needle in view, and a change of transducer insonation angle of only one degree may lose the image of the nerve. All of this is done while holding a slippery transducer on a moving patient while NOT looking at one's hands. The technically inept individual can be taught USGRA, but the intense personal teaching may require repeated attendance of courses.

The Changing Paradigm of "Seeing" with Ultrasound-guided Regional Anesthesia

A paradigm is a framework formed by theoretical assumptions, with that framework defining further understandings. A changing paradigm implies needing to change one's understandings. Being able to see the needle in poor ultrasound images requires a new paradigm of seeing with one's mind and not one's eye. Identifying a needle in the absence of detail is possible by learning to understand subtle image changes synchronized with needle movements and merging multiple changing image frames over one another into one - in one's mind. With a dynamic USGRA image, single pixels change continuously in cycle with tissue pulsation or various patient or transducer micromovements. If a sloping needle becomes invisible, it is still in the same tissue position, just seemingly invisible. If that needle is advanced, intense scrutiny of the position of the last discernable image for patterns in pixel changes synchronous to the needle movement identifies the needle. Often, only the person manipulating the needle can determine where the needle is, while a casual observer cannot. Fast image refresh rates are needed.

What is the Future of Ultrasound-guided Regional Anesthesia?

There are four considerations. Firstly, the use of regional anesthesia is growing worldwide and companies selling regional anesthesia needles reported doubled sales every 8 years for the last 16 years . Secondly, anesthesia uses for ultrasound such as cardiac function assessment outside of the cardiac operating room and vascular line placements is growing. Thirdly, ultrasound machines are becoming more widely available. Fourthly, it seems USGRA has many clinical advantages. For all these reasons, combined USGRA will keep growing. The University of Iowa Department of Anesthesia has embraced these developments, purchased ultrasound machines, and developed USGRA teaching programs for our residents, fellows, and faculty. In addition, we sponsor workshops for the medical community.

It is no longer possible to be a regional anesthesia expert without being an ultrasound expert as well. The science of regional anesthesia is being advanced by new information and new ideas being generated from experience with ultrasound guidance of nerve blocks, even if one still uses only electro-nerve stimulation guidance in regular practice in ordinary patients.

References

1. Schafhalter-Zoppoth I, Zeitz ID, Gray AT. Inadvertent femoral nerve impalement and intraneural injection visualized by ultrasound. Anesth Analg 2004; 99:627-628

2. Chan VWS. Ultrasound evidence of intraneural injection (letter). Anesth Analg 2005; 101:610-611

3. Bigeleisen PE. Nerve puncture and apparent intraneural injection during ultrasound-guided axillary block does not invariably result in neurologic injury. Anesthesiology 2006; 105:779-783

4. Tsui BCH, Pillay JJ, Chu KT, Dillane D. Electrical impedance to distinguish intraneural from extraneural needle placement in porcine nerves during direct exposure and ultrasound guidance. Anesthesiology 2008; 109:479-483

5. El-Khoury GY, Bergman RA, Montgomery WJ. Sectional Anatomy by MRI and CT, 3rd edition. Philadelphia, Churchill Livingstone, 2007

6. Chan VWS. Ultrasound imaging for regional anesthesia: A practical guide booklet, 2nd edition, Toronto, Ultrasound for Regional Anesthesia (publ.), 2008

Interesting Facts
about Max T. Baker, Ph.D.

Through teaching assignments, he shares his knowledge with nurse anesthesia students, pharmacy students, and anesthesia residents. This includes annual syllabus preparation for a chemical and physical principles of anesthesia practice course for the student nurse anesthesia program, as there is no textbook available to this group specifically covering drug chemistry.

He has supervised both graduate students and post-doctoral students.

He serves on the UI College of Medicine Continuing Education Committee.

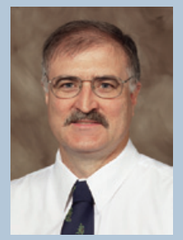
In addition to lecturing extensively and serving as consultant on various advisory boards, he has published nearly fifty peer-reviewed articles, authored three text chapters, and serves as reviewer for several anesthesia and pharmacology journals.

He recently was awarded a UI Carver College of Medicine Medical Research Initiative Grant.

He currently holds eight patents and has applied for numerous others.

He holds membership in the American Society of Anesthesiologists and the Association of University Anesthesiologists.

The students who have enjoyed the experience of learning from him continue to compliment his knowledge, style of teaching, patience and generous willingness to share his wisdom.



I enjoy the process of innovation and have more recently turned my attention toward the synthesis and use of fluorine in phenolic compounds related to propofol.

Spotlight on Investigator
MAX T. BAKER, PH.D.

I received my doctorate in pharmacology at the University of Georgia College of Pharmacy studying the effects of dietary fats on carcinogen metabolic activation. After a postdoctoral fellowship at the Mayo Clinic, where I studied the metabolism of anesthetics and halogenated compounds by the cytochrome P450 enzyme system, I came to The University of Iowa in 1984. At the time, there was interest in the metabolism and toxicity of small fluorinated compounds as they were employed not only as anesthetics but as the new non-chlorinated refrigerant substitutes. In addition to defining metabolic pathways, I uncovered a unique P450 mechanism by which exposure to certain fluorinated compounds, including anesthetics, greatly increased the metabolism and potential toxicity of unsaturated fluoro- and chloro-ethylenic type compounds.

Dr. Baker at work

Having more of a clinical influence at Iowa, I eventually involved myself in application of fluorine chemistry to anesthesia. Fluorine is a most unique halogen, being the most electronegative element. When added to small molecules, it results in a number of desired properties, particularly good compound stability and volatility. The downside of fluorine additions is that it involves unique and sometimes dangerous chemical reactions to perform. My "dangerous" chemical endeavors involved use of the very reactive and toxic chemical bromine trifluoride to formulate a new way to make sevoflurane and to make a deuterated form of sevoflurane which is less metabolized to fluoride than sevoflurane. I have also investigated the breakdown of sevoflurane on CO_2 absorbents, as well as authored articles on the chemical mechanisms of sevoflurane decay that remains a problem in both absorbents and vaporizers.

A hiatus from fluorine chemistry involved my work with propofol under industry sponsorship. Propofol is certainly a desirable anesthetic, but emulsion formulations containing different antimicrobial agents were thought to cause untoward chemical reactions in the emulsions. I was able to show that this was indeed the case. Sulfite, an additive in one formulation, could cause free radical formation, which in turn caused propofol and emulsion oxidation quickly after exposure to air. I also was able to show that there was a unique three-way reaction between sulfite, emulsion lipids, and propofol.

I enjoy the process of innovation and have more recently turned my attention toward the synthesis and use of fluorine in phenolic compounds related to propofol. I have been issued a number of patents for these compounds. In addition to some of these compounds having anesthetic properties, screens by the National Institutes of Health have shown a few to have low sedative, but significant anticonvulsant properties. Anticonvulsant properties are usually associated with anesthetics, but not useful for "everyday" epilepsy treatment due to their high sedative effects. I hope to also apply newly created fluorocompounds to such problems as bronchoconstriction and central nervous system imaging with fluorine tags.

In addition to research, I enjoy teaching and interacting with students. In my spare time, I can most likely be found working on my home improvement and gardening projects, amassing too many tools for such projects, or riding my bike.

Max T. Baker, Ph.D.
Associate Professor

The Department of Anesthesia

Welcomes Biostatistician

Emine O. Bayman, Ph.D.

I'm originally from Turkey, where there are boarding high schools that focus on teaching science and mathematics. I was admitted to the science high school in my hometown, where hard-working students surrounded me. If we didn't know the answers, we were always encouraged to seek the help of our teachers, day or night.

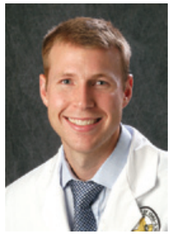
As my high school graduation approached, I decided to pursue a college major in statistics because I enjoy mathematics. I wanted to apply my skills in math and statistics to my science background, so in addition to being a research assistant, I specialized in biostatistics as a student in the master's program at Uludag University in Bursa, Turkey. I enjoyed these academic responsibilities. One day, the head of my department at Uludag asked to talk to me about an opportunity. He told me that each year the Higher Education Council of Turkey gives graduate scholarships to each university, and Uludag University offered this scholarship to me. After careful consideration of the offer, I was convinced that this opportunity was important, and I pursued admission to a school in the United States. I was admitted to The University of Iowa, moved to Iowa City in January 2003, and was married in May 2003.

While first enrolled in graduate school at Iowa, I took courses without simultaneously working as a research assistant, which was the rule for students enrolled with a scholarship. I decided to forego my scholarship and gain more experience by working as a research assistant in the Biostatistics Department. Following an initial assignment under Dr. M. Bridgit Zimmerman in the Biostatistics Consulting Center, I began work in the Clinical Trials and Statistical Data Management Center (CTSDMC) on the design phase of a clinical trial with Drs. Kathryn Chaloner and Mary Cowles. This study was very important for me, because not only did it lead me to realize my research interest area, but I also found two wonderful dissertation advisors in Drs. Kathryn Chaloner and Mary Cowles.

Upon completion of the design for that clinical trial, the CTSDMC assigned me to work for the Intraoperative Hypothermia for Aneurysm Surgery Trial (IHAST), in the Department of Anesthesia, a study sponsored by the National Institutes of Health. I started meeting weekly with anesthesiologists Drs. **Michael Todd** and **Bradley Hindman**, epidemiologist Dr. James Torner, and study coordinator Ms. **Julie Weeks**. Although I had experience working with researchers from Uludag University, IHAST provided my first experience in the United States to be involved with researchers on an ongoing project. Just prior to my work's conclusion on the IHAST project, I was provided the opportunity to discuss joining the Department of Anesthesia upon completion of my doctorate. I joined the Department of Anesthesia in August 2008.

My mission in this department is to contribute to the expansion of the department's research program by assisting faculty and residents in designing solid research proposals. I have met with many researchers and helped them with their ideas. It is highly desirable that I am involved at the very beginning of a study. When an investigator has a study idea, even prior to writing a protocol, I help determine appropriate design, statistical methodology, sample size calculation, and randomization for clinical studies. A researcher may have a great research idea, but to prove the hypothesis, the required sample size may be impossible to reach. It is much better to know this at the beginning of the study. After data collection is complete, I assist researchers in choosing appropriate statistical tests for secondary outcomes of the study. I encourage researchers to work with me closely to improve the overall research quality. I enjoy being part of the Anesthesia family at The University of Iowa, and have many ideas and plans for further developing and enhancing our department's research.

Emine Ozgur Bayman, Ph.D.
Associate



A Resident's Perspective...

The article that follows is the first in a new section we've entitled "A Resident's Perspective." Our goal is to publish an article in this section in each spring issue. An invitation will go out to all senior residents, asking them to either choose an author or collectively author and submit an article voicing a subject matter of their selection. We welcome your feedback!

Night shifts were rather quiet. I don't mean night shifts are quiet. I'm not saying they will be quiet. Night shifts were quiet. I'm placing specific emphasis on the past tense, because I feel that something has changed. The entity of what was, no longer is. To me, it's definitely different than it used to be. And I don't think it's a bad thing.

I've slowly become cognizant of our increased operating room (OR) case volume over the past few years. When I started my first night float rotation as a naïve CA-1, I blissfully remember the ORs dwindling near midnight. It seemed that more often than not, I would catch a few hours of sleep and at times feel rested enough to accomplish my wife's tasks during the ensuing daylight hours.

My first night float as a weathered CA-3 was different. More often than not, hive-like activity and an ample volume of complex cases accompanied my shift. My anticipated REM sleep was incessantly postponed, and I would hibernate throughout the entire day in order to prepare myself for the upcoming shift. My two weeks of night float raced by in a bustle of physiology and tubes. When I reflected upon the experience and was corroborated by similar scenarios from colleagues, I came to a poignant realization: we're busier.

Smith Manion, M.D., welcoming 2008 PGY-1 Tejinder Singh, M.B.B.S.

I can't provide all of the right reasons as to why we're so much busier, but I think the primary impetus is "renovations." In 2007, our new Ambulatory Surgery Center (ASC) opened, and we're now running eight additional operating rooms at that facility. Our "old" ASC has been renovated and reopened as six appended main operating rooms. Further, the Urology Department has refurbished two procedure rooms, and the Gastroenterology Clinic has amplified its number of cases requiring anesthesia. These inclusions have contributed to a caseload that has noticeably risen throughout my few years in the department.

From a resident's perspective, this is good and bad. The disadvantages of an augmented case volume include longer work hours, less family time, and fewer reading opportunities. It seems that we will likely need to increase our workforce of residents and staff in the near future. But in my opinion, the advantages have certainly eclipsed the inconveniences. I have been exposed to a great quantity of exceptional cases that have enhanced my education to a tremendous degree. I feel that I am truly learning from the added opportunities - not just doing more cases - and that I have been able to hone and polish many techniques. I have consistently found myself feeling even more confident in managing difficult anesthetics. My evolving sentiment is that this expanded case volume will continue to amplify the outstanding clinical training that is already established here at The University of Iowa.

Night shifts were quieter. But now we are being trained even better.

Smith Manion, M.D.
CA-3, Chief Resident

MEET THE NEW ANESTHESIA
Faculty

Emine O. Bayman, Ph.D.
Associate

Emine O. Bayman, Ph.D., joined the department in August 2008 as an Associate. She completed her doctorate in biostatistics from The University of Iowa College of Public Health. Prior to this, she received her master of science in biostatistics from Uludag University, after being awarded her bachelor of science in statistics from Hacettepe University in Turkey. See the article on page 16 that further introduces Dr. Bayman's role in our department.

Rashmi Mueller, M.D.
Clinical Associate Professor

Rashmi Mueller, M.D., returned to the department as Clinical Associate Professor in July 2008. She attended medical school at the University of Bombay in India. She completed her anesthesia residency in our department in 2001, after which she held academic positions in the Department of Anesthesia, University of Texas Medical Branch, Galveston, TX. While in Texas, she was the recipient of a FAER research grant as principal investigator for a project entitled, "The Effect of Zinc Chelation on Neurobehavioral Outcome after Transient Global Cerebral Ischemia in Rabbits." Her clinical interest is neuroanesthesia.

Anil Marian, M.B.B.S., M.D., F.R.C.A.,
Clinical Assistant Professor

Anil Marian, M.B.B.S., M.D., F.R.C.A., joined the department in July 2008 as Clinical Assistant Professor. Dr. Marian completed his medical degree at Trivandrum Medical College in India and his postgraduate study in anesthesia at the University of Mumbai. He has held positions in the United Kingdom, and most recently spent a year as Visiting Instructor in Anesthesiology at the University of Michigan, Ann Arbor. His clinical and research interests include regional and ambulatory anesthesia.

Sundar Reddy, M.B.B.S., F.R.C.A.
Clinical Assistant Professor

Sundar Reddy, M.B.B.S., F.R.C.A., joined the department in July 2008 as Clinical Assistant Professor. He completed his medical degree at Andhra Medical College in India and his postgraduate study in anesthesia at Wessex School of Anaesthesia in the United Kingdom. He held appointments in the United Kingdom prior to joining the anesthesiology team at the University of Michigan Medical Center in Ann Arbor, MI. Dr. Reddy enjoys the teaching opportunities available in our department, and has also welcomed being a member of the liver transplant team.

Martin Mueller, M.D.
Clinical Assistant Professor

Martin Mueller, M.D. joined the department as Clinical Assistant Professor in July 2008. He received his medical training at the University of Rostock in Germany. He completed an anesthesia residency (including a year as chief resident) at the University of Texas Medical Branch, Galveston, TX in 2006, and a pediatric anesthesia fellowship in 2007 at The Texas Children's Hospital, part of Baylor College of Medicine in Houston, TX. Following his training, he held an academic position in pediatric anesthesia at UTMB in Galveston prior to joining our department.

MEET THE NEW ANESTHESIA
CRNAs

Since spring 2008, the following individuals have joined the department's team of highly qualified certified registered nurse anesthetists.

Maya Matthews, C.R.N.A., M.S.N.

Maya Mathews, C.R.N.A., M.S.N. graduated from Delhi University in India with her bachelor's degree in nursing. She received the Indian President's award for being the outstanding nursing student at Delhi University in 1995. She then held several nursing positions, first in India and then moving to Iowa. In 2008, Maya received her nurse anesthetist degree here at Iowa and joined our team upon graduation. While a student here, she participated in a research project on awareness during general anesthesia.

Cynthia Haas, C.R.N.A., M.S.

Cynthia Haas, C.R.N.A., M.S., received her nursing training at Grandview College in Des Moines, IA, the University of Minnesota in Minneapolis, MN, and the Minneapolis School of Anesthesia at St. Mary's University, where she was the recipient of an Award of Excellence in Clinical Practice. Her professional experiences prior to joining our department include Hennepin County Medical Center and Shriners Hospital for Children, both in Minneapolis, MN, and the Healthsouth Surgery Center in Anchorage, AK. Cindy and husband, Mark (see below), returned to the Midwest to be closer to family. They like traveling and enjoying new experiences.

Kelly Stokes, C.R.N.A., M.S.N.

Kelly Stokes, C.R.N.A, M.S.N., trained at The University of Iowa, receiving her B.S.N. in 2002. She then worked in the UIHC Surgical Intensive Care Unit as a staff nurse for over two years prior to returning to school to complete her nurse anesthesia training in 2008. She accepted a position in our department following her graduation. Kelly enjoys the variety and scope of cases that present in our operating rooms. She enjoys spending time with her family when she is not working.

Mark Haas, C.R.N.A., M.S.

Mark Haas, C.R.N.A., M.S., received his undergraduate nursing degree at The University of Iowa and his anesthesia training at the University of Minnesota in Minneapolis, MN, and the Minneapolis School of Anesthesia at St. Mary's University. He has held professional positions in Edina and New Prague, MN, and Anchorage, AK, most recently at the Alaska Surgery Center. He was involved as a clinical educator in each of these positions. Mark welcomes opportunities to continue sharing his skills and knowledge and mentor others.

Aaron Thornton, C.R.N.A., M.S.N.

Aaron Thornton, C.R.N.A., M.S.N., received his undergraduate nursing degree from Brigham Young University in Provo, UT. He moved to the Midwest in 2004, working in the neurological intensive care unit at Mayo Clinic in Rochester, MN until moving to Iowa to enter the nurse anesthetist program. Aaron joined UIHC as a nurse anesthetist when he graduated in 2008. He appreciates the challenging cases presented in the operating room. He enjoys spending time with his family, as well as gardening and biking.

The University of Iowa Anesthesia Nursing Program (UI ANP) honored its senior class of student nurse anesthetists with a graduation ceremony on Saturday, February 21, 2009. The nine students received certificates from The University of Iowa Colleges of Medicine and Nursing indicating completion of the program and received their Masters in Science and Nursing (MSN) degree with a specialization in anesthesia nursing. After successfully passing the national certifying examination given by the Council on Certification of Nurse Anesthetists, these students will become certified registered nurse anesthetists (CRNAs) and begin their careers in hospitals and surgery centers in Iowa and Idaho.

FAREWELL TO OUR 2009 GRADUATING
Student Registered Nurse Anesthetists

Cornelius, Randy: Randy will join the University of Iowa Hospitals & Clinics (UIHC) as a staff CRNA and plans to continue his education by pursuing a Doctorate of Nursing Practice (DNP). He is glad that he attended UI ANP, and looks forward to someday teaching others. He thanks all the anesthesia providers he worked with over the past couple years for providing guidance and allowing him to develop into a future colleague.

Fischer, Emily: Emily will begin her career at Lutheran Hospital in Des Moines. Emily was accepted into the DNP program at the University of Iowa, and looks forward to continuing her education with the possibility of returning to an academic medical center some day. She feels fortunate to be a graduate of the Iowa nurse anesthesia program, as it prepared her personally, professionally, and clinically. Emily will hold a special place in her heart for the University of Iowa Department of Anesthesia, as she feels the department's efforts are cultivating the future of healthcare. She and fiancé John Palecek (2008 graduate of the UI anesthesia residency program) are planning a June wedding.

Hawk, Sara: Sara is excited about starting her career as a nurse anesthetist with Des Moines Anesthesiologists, P.C. She feels that experience in so many diverse clinical out-rotations provided invaluable opportunities for her learning and development. She is thankful to those mentors who have dedicated themselves to enriching the education of students in this program. Sara is looking forward to spending more time with her husband, family and friends.

Henderson, Jessica: Jessica served as the Chief SRNA of the 2009 class. She reflects that the UI ANP provided her with an outstanding, well-rounded education, encouraging and challenging her each day to learn something new regarding providing safe anesthesia in a variety of settings. She is appreciative of the wonderful mentors and educators along the way who have taken the time to teach their skill and show their expertise. She especially enjoyed the rural rotations, cardiac anesthesia, and regional anesthesia. After graduation, she and her husband will be moving back to their hometown of Bloomfield, IA, where she will work with the Bloomfield Anesthetists Group. Jessica looks forward to continuing her education and becoming a clinical instructor for future SRNAs. She thanks those who have guided her education and given their support throughout her program - classmates who she considers lifelong friends, CRNAs and anesthesiologists who have guided her education, and friends and family.

Hines, Amber: Amber will join the CRNA team at the VA Hospital in Iowa City. She looks forward to beginning her career and helping veterans in need. The UI ANP provided her the skills and knowledge to become a competent and professional member of the anesthesia community. She will always remember the UIHC staff, CRNAs from clinical out-rotations, and her classmates for their patience, kindness, and friendship during this long process of becoming a nurse anesthetist. She will carry the valuable lessons taught by each and every one of them throughout her career, and for that she is grateful.

Lenninger, David: David is excited about joining the team here at UIHC. He enjoyed learning the science and art of anesthesia from his various preceptors and mentors here and throughout the state. David plans on continuing his education, pursuing the DNP, and spending much missed time with his wife, friends, and dog.

Mullahy, Sara: Sara will begin her career with Bloomfield Anesthetists Group in Bloomfield, IA. She feels the UI ANP prepared her for all types of anesthesia settings. The education at UIHC and out-rotations provided her a variety of invaluable experiences she will always remember. Sara thanks everyone involved in her education for the time they spent teaching her. She also thanks her classmates for their support and dedication throughout the program.

Patterson, Mackenzie: Mackenzie will begin her career at the VA Medical Center in Iowa City. She is looking forward to serving as a clinical instructor for future UI SRNAs and pursuing a DNP. Mackenzie is grateful for all the opportunities and experiences she has encountered throughout the UI ANP. She is thankful for her classmates' support, encouragement and advice. In addition, Mackenzie is indebted to all the clinical instructors and educators who offered their time and expertise along the way. All of these factors have guided this UI ANP graduate into becoming a well-rounded, confident and adept practitioner.

Rowberry, Kristy: The anesthesia team at St. Luke's Hospital in Boise, Idaho will welcome Kristy as she begins her career there. She will be closer to family and have more time again to enjoy motherhood. She will treasure the wonderful friends and memories of Iowa, as well as the opportunity to learn from the best and to graduate from one of the top SRNA programs. One of Kristy's favorite quotes is from Ben Franklin, "Tell me and I forget, teach me and I may remember, involve me and I will learn." She thanks those who unselfishly gave of themselves to not only teach, but also involve her in the anesthesia world. To current and future students, she passes on a valuable lesson she learned during her training: relish the past, anticipate the future, but most importantly enjoy the present (and wait until you graduate to have kids!).

Anesthesia Nursing Graduating Class of 2009
August 21, 2006 – February 20, 2009

Back row: David Lenninger, Amber Hines, Kristy Rowberry, Mackenzie Patterson, Randy Cornelius
Front row: Emily Fischer, Jessica Henderson, Sara Hawk, Sara Mullahy

University of Iowa Anesthesia Nursing Program
Class of 2011

Shawna Barnett, B.S.N., R.N.
University of Iowa

Eric Barrett, B.S.N., R.N.
University of Iowa

Lindsay Boyum, B.S.N., R.N.
University of North Dakota

Pegah Daher, B.S.N., R.N.
University of Central Florida

Melissa Gonzalez, B.S., M.N.H.P., R.N.
St. Xavier Univ. & Univ. of Iowa

Jessica Gunsolley, B.S.N., R.N.
Grand View College

Kristin Khoo, B.S.N., R.N.
Univ. of Wisconsin-Eau Claire

Amanda McKinley, B.S.N., R.N.
Truman State University

Jason Trotter, B.S.N., R.N.
St. Francis Medical Center
College of Nursing

of *Special* interest.....

Medical Student Meets Scholarship Donor

Neil Sink and William Weese, M.D.

Neil Sink, a fourth year student in The University of Iowa Carver College of Medicine (UI CCOM) is one of our current anesthesia externs. Like others who want to learn more about the specialty of anesthesiology, Neil applied for an extern position in order to gain exposure and experience. **William C. (Bill) Weese**, M.D., completed his residency in internal medicine in 1972, here at Iowa. He lives in Phoenix and specializes in pulmonary medicine. Dr. Weese believes in the importance of giving back to the institution that helped train him, and is a longtime sponsor to the UI CCOM student scholarship fund. Neil is the direct recipient of Dr. Weese's scholarship and was afforded the opportunity to thank Dr. Weese in person for his support and generosity during a scholarship luncheon held in November 2008. Our department joins Neil, the UI CCOM, and the UI Foundation in expressing our appreciation to Dr. Weese for providing this opportunity to Neil, which in turn has allowed us to help with his training process. We also extend thanks to our own anesthesia alumni who participate by giving, allowing important opportunities such as this scholarship program to continue.

Patient Simulator Center News

Anesthesia Patient Simulator Center directors **Paul Leonard**, M.D, Ph.D., Clinical Associate Professor, and **Ann-Willemsen-Dunlap**, Ph.D., C.R.N.A., Clinical Assistant Professor, along with simulator operations manager, **Johann Cutkomp**, B.L.S., participated in the 2009 international meeting of the Society for Simulation in Healthcare, held in Orlando, FL. They presented a peer-reviewed workshop on the use of event set methodology to construct scenarios for multidisciplinary team training among undergraduate healthcare professionals. William Hamman, M.D., Ph.D. and Beth Seiler, M.B.A., their research collaborators from Western Michigan University (Kalamazoo, MI), were co-presenters of the workshop that was entitled, "Big Events in Small Packages: Team Training for Undergraduate Professional Healthcare Students." William Rutherford, M.D., a mentor to Hamman, Leonard, and Willemsen-Dunlap, was acknowledged at the beginning of the presentation.

The interactive presentation began with an overview of event sets, followed by a scripted video made with third and fourth year University of Iowa medical and nursing students. The video utilized "triggers" defined as issues that come up to start an event set and move it forward, and exemplified the confusion that can occur during an urgent patient care situation. Some triggers might include need to move a patient, change in a patient's condition, arrival or departure of team members, etc. Workshop participants discussed the trigger video along with two other short clips denoting good and poor teamwork practices. That discussion focused primarily on event sets and how they were used to construct the simulations depicted in the videos. Participants then broke into groups where they used worksheets to guide the design of their own scenarios using event set methodology. The workshop concluded with one group's scenario being enacted by a different set of participants. The debriefing that followed focused again on how group members used event sets to construct their simulation.

Event sets, first created by Dr. Hamman in the aviation industry, may be thought of as acts of a play. They allow for identification of observable team behaviors that may or may not be displayed as the scenario unfolds. Recording and debriefing of the scenario allows for discussion of these behaviors. The workshop provided participants with another tool for thoughtful construction of scenarios and methods to follow up with a controlled debriefing path.

Paul Leonard, M.D., Ph.D.
Clinical Associate Professor,
Co-director, Patient
Simulator Center

Ann Willemson-Dunlap,
Ph.D., C.R.N.A.
Clinical Assistant
Professor, Co-director
Patient Simulator Center

Johann Cutkomp, B.L.S.
Simulator Operations
Manager

Unquestionably Iowa

The department recently concluded its third round in the ongoing photograph competition. Department members, as well as alumni and friends of the department, were invited to submit their prize photos for consideration as winners. The submission criteria remained the same – photographs must have been taken recently, represent either the spring/summer seasons or the fall/winter seasons (our criteria for this particular round), and portray something that is unquestionably representative of Iowa. This recently completed cycle of our competition is the first time we have opened up the vote to all current department members, blinding the name of the photographers, and we received great participation in the selection process. We are pleased to report that eight individuals submitted a total of 29 photographs. Each photographer's work could easily have won the competition, yet still the rivalry represents light-hearted fun for all. The first and second place winning photos are displayed here, along with a photo of the winning photograpers. Visit our web site at **http://www.anesth.uiowa.edu** to view each of the submissions. Consider submitting one or several of your own photos for our next contest. Iowa is a beautiful state in all seasons, so visit us and snap some shots. When you do plan your trip to Iowa, be sure to notify us in advance, as we'll happily throw out the department's welcome carpet for you!

First prize winner: David Papworth, M.B.B.S., Associate Professor
"Iowa Moon Rise"

Second prize winner: Jodi Kazerani, Project Assistant
"Backyard Sunset"

David Papworth

Jodi Kazerani

MARC 2009

The Midwest Anesthesia Residents Conference (MARC) is being planned for April 17-19, 2009, in Chicago, IL. **Mazen Maktabi**, M.D., Associate Professor and faculty coordinator for our department's participation in this annual meeting, is busy preparing. The history of the last 4 years is proof that his efforts are successful. In 2006, our department delivered six presentations but won no awards. In 2007, we grew to 12 presentations with two first place winners. Last year, there were 16 presentations and three first place winners. The goal for 2009 is to continue to increase our representation at MARC. As the deadline for abstract submissions is February 27th, it's easy to understand why Dr. Maktabi is busy coordinating the status of resident research and faculty mentorship, making certain the deadlines are met, reservations in Chicago are made, participating residents are relieved of clinical duties during the meeting dates, presentation rehearsals are scheduled, etc. By the time you read this issue of our newsletter, we'll be beyond the preparation stage and MARC participants will perhaps even be in Chicago at the meeting. We'll provide you an update of our department's involvement in the next newsletter.

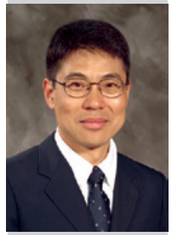
Achievements and Awards

Research Grants Awarded

Two anesthesia faculty members have been awarded individual Carver Medical Research Initiative Grants for 2009-11. These awards result from a collaborative funding opportunity of the University of Iowa Roy J. and Lucille A. Carver College of Medicine and the Roy J. Carver Charitable Trust. This year, only four applicants were approved for this funding. We are proud to announce that two newly selected recipients are members of our department.

Max T. Baker, Ph.D.
Associate Professor

Max T. Baker, Ph.D., Associate Professor, was awarded a $24,000 2-year grant for his pilot project entitled, "Novel Anticonvulsant Hydroxyl Trifluorethyl Phenolic Compounds." The aim is to enhance the anticonvulsant properties of a compound synthesized by Dr. Baker and already screened through the National Institute of Neurological Disorders and Stroke consortium. **Toshi Kitamoto**, Ph.D., Assistant Professor, was awarded a $30,000 2-year grant for his pilot project entitled, "Function and Regulation of the Lithium-inducible SLC6 Transporter." His experiments will use well-established techniques of the Drosophila fly system, with this current project the only one known to use fly genetics to examine lithium responsive genes.



Toshi Kitamoto, Ph.D.
Assistant Professor

Education Grant

Robert From, D.O.
Associate Professor

Robert From, D.O., Associate Professor, was awarded an Education Development Grant from The University of Iowa Office of Consultation and Research in Medical Education (OCRME). Dr. From is conducting a study to determine whether a teaching video, created within our department, will provide equal or better training to students beginning an anesthesia rotation than does a lecture delivered by a faculty member.

NIH Grant

Donna Hammond, Ph.D., Professor

Donna L. Hammond, Ph.D., Professor, was recently awarded two five-year grants from the National Institutes of Health. One study, awarded for five years in the amount of $2,680,766, is entitled, "The Role of Medullary Substance P in Persistent Inflammatory Pain." This project will investigate our understanding of the means and mechanisms by which peripheral inflammatory injury alters the responses and function of critical brainstem pain modulatory systems. The finding should inform a more rational development of centrally-acting analgesics for the relief of persistent pain and shed important insight on why the first generation of substance P receptor antagonists failed in clinical trials. The second study awarded Dr. Hammond is also for five years in the amount of $1,687,500. It is entitled, "Opioid Mechanisms of Analgesia" and will focus on identifying the mechanisms by which peripheral inflammatory injury leads to sustained changes in the function and properties of brainstem neurons that modulate nociception. Both grants focus on understanding how persistent inflammatory pain causes a physiological and pharmacological "remodeling" of critical brain stem pain modulatory pathways at which conventional analgesics act. Understanding these changes will drive the development of new therapeutic approaches to treating chronic pain. The conceptual and technical contributions of her colleagues and collaborators, including senior postdoctoral fellow, **Liang Zhang**, M.D., M.S., junior postdoctoral fellow, **Marta Hamity**, Ph.D., laboratory manager, **Stephanie White**, and M.D., Ph.D. predoctoral student, **Marlene Cano**, were critical to the success of these applications.

SAMBA Appointment

John Laur, M.D.
Associate

John Laur, M.D., Associate, has been selected as chair of the Regional Anesthesia Committee for the Society of Ambulatory Anesthesia (SAMBA). The appointment begins in May 2009. This committee is tasked with important work as the emphasis on the role of regional anesthesia as part of a multimodal approach to intraoperative and postoperative pain control increases.

Neurological Subspecialty Certifications Awarded

Nationally, there is increasing interest in supporting patients with acute brain injury, as well as enhanced capabilities to do so. With regard to subspecialty certification in neurocritical care, there are very few physicians in the United States who have achieved this distinction. We are very proud to say three of our physicians in the Division of Critical Care at The University of Iowa have achieved this clinical recognition. Under the auspices of the United Council for Neurologic Subspecialties, based on a national examination in December of 2008, Drs. **J. Steven Hata, Joss Thomas,** and **Avinash Kumar** were awarded a subspecialty certification in neurocritical care, making them the first and only in Iowa granted this certification.

J. Steven Hata, M.D., F.C.C.P., M.Sc.
Professor

Joss Thomas, M.B.B.S.
Associate

Avinash Kumar, M.B.B.S., F.C.C.P.
Assistant Professor

Medical Student Research Day Awards

The Carver College of Medicine held its 40th Annual Medical Student Research Day in September 2008, too late for including this announcement in our fall newsletter. The Department of Anesthesia had two winners, M2 students **Brian Cheney** and **Brett Theusch**. Brian worked with Dr. **Javier Campos** and won the Outstanding Oral Presentation in Clinical Research award for his presentation, "Anterior Mediastinal Mass Resection Using the Da Vinci Robotic System: Anesthetic Implications." Brett worked with Drs. **Timothy Brennan** and **Sinyoung Kang** and won the Outstanding Poster Presentation in the Basic Sciences for his presentation, "Measurement of Tissue Oxygen Tension in Rat Incisions."

Brian Cheney

Brett Theusch

SRNA Trainees Honor Teachers

The Nurse Anesthesia Class of 2009 selected two department alumni for special recognition during their February graduation ceremonies. **Kent L. Croskey**, D.O., Medical Director of Anesthesia Services at Iowa Lutheran Hospital in Des Moines, IA, and Chair, Iowa Physicians Health Committee, was recognized as Physician Educator of the Year by this group. Dr. Croskey completed a residency in anesthesia at Iowa in 1987 and a fellowship in 1988. He serves as director for the students during their Des Moines rotation. He also provides annual substance abuse training within our department. **Melissa A. Gambrall**, C.R.N.A., M.S.N., was selected by this class as the CRNA Educator of the Year. Ms. Gambrall graduated from Iowa's SRNA program in 2006 and is currently employed as a staff anesthetist in our department. **Bradley J. Hindman**, M.D., Professor and Vice-Chair for Faculty Development, delivered the graduation address to this group. See the article on page 20 for additional information regarding this graduating class.

L-R: Bradley Hindman, M.D., Melissa Gambrall, C.R.N.A., M.S.N., and Kent L. Croskey, M.D.

Anesthesia Externs Elected to AOA Society

Three of our anesthesia medical student externs were chosen for election to the presitigious Alpha Omega Alpha (AOA) Society. **Brett Alvis, Anne Renze,** and **Neil Sink** were inducted into this group, which is an unprecedented and outstanding academic achievement for our externs.

Bret Alvis

Anne Renze

Neil Sink

Congratulations Resident Class of 2007

All of our 2007 anesthesia resident graduates passed both the written and oral examinations and have become Board Certified Anesthesiologists. Of additional special note is that each passed on the first attempt. This brings our board certification rate to approximately 97.5% since 1995, whereas the national average of 81%. This represents a lot of hard work by a lot of people!

Back row (L-R): Alex Dumanovsky, John Laur, Rufino Rodriguez, Khurram Khan, Amdrew Wilkey, Yuri Tsirulnikov, William Esham, Scott Paulsen
Front row (L-R): Sethabell Alvarado, Karen Boland, Christina Spofford, Rebecca DeLong, Robert Frohm, Roman Plachinta.

Congratulations to the SRNA Class of 2008

The nine students of The University of Iowa Anesthesia Nursing Program's Class of 2008 all passed the CRNA exam and continue the 100 % first-time pass rate for University of Iowa students on the certification exam, a 10-year tradition, unique to the U of I Anesthesia Nursing Program. Again, this represents a lot of hard work by a lot of people!

Back row (L-R): Melissa Friedrich, Aaron Thorton, Craig Vana, Jonathan Jenson
Front row (L-R): Maya Matthews, Jennifer Tretsven, Kate Haffaran, Kelly Stokes, Kellie Wendt

Making a Difference
University of Iowa Health Care

Making a Difference Awards

All UI Health Care faculty, staff, and volunteers are eligible to receive a recognition award through a new program called "Making a Difference." The focus of the recognition program is to support and promote the special efforts that make a difference to our patients, their families, our co-workers, and the public we serve by reflecting our commitment to innovative care, excellent service, and exceptional outcomes. Recently, the following individuals from the Department of Anesthesia were recognized with receipt of this award.

John Laur, M.D., Associate
Sean Overton, M.D., Critical Care Fellow
Garry Weide, D.O., Critical Care Fellow

John Laur, M.D.

Sean Overton, M.D.

Garry Weide, D.O.

Mark your calendars!

Upcoming Iowa Anesthesia Department CME Conferences

Conferences offered through our department are approved for allowance of CME credits to the participating professional. Detail regarding the upcoming conferences can be found on the department's web site at **http://www.anesth.uiowa.edu**. Should you have specific questions regarding a conference, you may e-mail or call Lori Bailey Raw in the College of Medicine CME office. She can be reached via e-mail at **lori-bailey@uiowa.edu** or by telephone at **319-335-8599**.

Iowa Anesthesia Symposium IX
May 9 – 10, 2009

Regional Anesthesia Study Center of Iowa (RASCI)
May 30 – 31, 2009

Operations Research for Surgical Services
August 28 – 31 2009

Iowa Conference on Hyperbaric Applications and Treatments (I-CHAT) – TBA

Iowa Airway Workshop
September 26, 2009

Iowa International Anesthesia Symposium, 4th Annual
TBA

**Other Upcoming Events

The following special events are being planned. Mark the dates on your calendars, as we welcome you to get involved. Contact Barb Bewyer via e-mail at **barbara-bewyer@uiowa.edu** or by telephone at **319-353-7559**.

Midwest Anesthesia Residents Conference (MARC)
April 17 – 19, 2009

University of Iowa Alumni Association Reunion Weekend
April 17 – 18, 2009

UI College of Medicine MD Class Reunions
June 12 – 13, 2009

Resident and Fellow Graduation Luncheon
June 21, 2009

New Resident and Fellow Welcome Party
June 25, 2009

ABA Written Certification Exam
August 3 – 4, 2009

Anesthesia Night at the Kernels Baseball Game
July 25, 2009

Iowa State Fair
August 13 – 23, 2009

University of Iowa Homecoming Weekend
October 8 – 11, 2009
Thursday:
College of Medicine's two-day Continuing Medical Education Program
Friday:
College of Medicine CME Program
Homecoming Parade, 5:45 p.m.
Medicine Alumni Social, 6:30 – 8:00 p.m.
Iowa Minority Medical Alumni Social, 6:00 – 8:00 p.m.
Homecoming Pep Rally, 8:00 p.m.
Saturday: College of Medicine All Alumni Tailgate Party, 2 hrs prior to kickoff
Iowa vs. Michigan Football Game, Kickoff time TBA
College of Medicine Alumni Social and Reunion Dinner, 6:30 – 11:00 p.m.
Sunday:
Anesthesia Department Picnic, 11:30 a.m. – 4:00 p.m.
Location TBA

Alumni Reception during Annual ASA Meeting
October 17, 2009, 6:00 – 9:00 p.m.
New Orleans, LA

of *Special* mention.....

We have learned of the deaths of several special individuals, each an alumnus of our department. We want to acknowledge each and pay tribute to their lives. We also thank those individuals who have informed us of this information, allowing us this opportunity to share the announcements with you.

Jeffrey K. Anderson, M.D.: Dr. Anderson died June 10, 2008, in Davenport, IA. He received his undergraduate degree in microbiology at Iowa State University, graduated in 1987 from medical school at The University of Iowa, and completed his anesthesia residency at Indiana University. He moved to the Davenport area in 2001, where he became a partner with Anesthesia & Analgesia, P.C. He was a member of the Iowa Society of Anesthesiologists. In addition to his work, he enjoyed technology, earning the nickname "The Gadget Guru." He was also a physical fitness enthusiast, an avid snow skier, and a tennis player. Survivors include his wife, Kris, and two daughters, Lauren and Layne.

Erwin A. Schilling, M.D.: Dr. Schilling passed away on August 13, 2008, at the age of 88. He attended The University of Iowa, earning his medical degree in 1946 and completing his anesthesia residency in 1951. He pioneered anesthesia in the Illinois areas of Rockford and Belvidere, forming Rockford Anesthesiologists Associated, and serving as president when he retired. Dr. Schilling was devoted to providing excellent, state-of-the-art patient care. He had a lifelong interest in farming and gardening. In addition to his wife, Arthene, he is survived by four daughters and their families (Rosa Walkoe, Kay Hatch, Heidi Gold, Rebecca Schilling Black) and two sons and their families (David and Peter).

Lee Alan Pavlicek, M.D.: Dr. Pavlicek died October 11, 2008 in Naperville, IL. He completed his undergraduate work at Central College in Pella, IA and graduated from medical school at The University of Iowa in 1987. While a fourth year medical student here, he served as one of nine anesthesia externs in our department. Dr. Pavlicek's career was spent at Edward Hospital in Naperville. He enjoyed the outdoors, motorcycle and snowmobile riding, and boating. He is survived by his wife, Donna, and leaves behind four children, Kyle and L.J. Pavlicek, and Jason and Nicole Morese.

Gordon Clappison, M.D.: On November 8, 2008, Dr. Clappison passed away in Sublimity, OR, at the age of 83. He attended Iowa State University in Ames, IA for one year, prior to being drafted into the U.S. Army. He served three years, returned to Iowa State to complete his bachelor's degree, and then attended The University of Iowa for medical school and residency. He received his medical degree in 1951 and completed his anesthesia residency in 1956. He spent his career years in Yakima, WA and Salem, OR. Dr. Clappison had a life-long interest in flying, building and flying two planes. He also enjoyed skiing, camping, canoeing, and travel. Survivors include his daughter, Dr. Valerie Clappison, and her family.

Alumni Update

Our department is committed to the mission of connecting and reconnecting with our alumni and friends. This is something Dr. Todd feels very strongly about, and fortunately, there are many current faculty and staff members, as well as supportive alumni, who completely concur with this goal. In December 2008, Barb Bewyer visited with several alums living in the Ames and Des Moines areas, along with Monica Lewis from the UI Foundation. Only one individual was a familiar face to Barb, and she so enjoyed these visits that she was stopping staff in the department hallways for days after, sharing stories. Comments made by several of those she visited were that they wondered why now? Why did the department decide to show interest now? Did the department just want donations, or is the department really interested in reconnecting? The honest answer is both, but we are very sincere in our primary desire to reconnect, to rebuild our professional and personal relationships with all who have a history that includes this department. We want your involvement. We view you still as very much a part of us today. We want to deliver to you what you want, what you feel you've missed out on since leaving the department. We want to reconnect with you and we want to offer our assistance in helping you reconnect with those you may have lost touch with over the years. Please allow us this privilege. Also in December, **Jeanette Harrington**, M.D., Assistant Professor, 1986 Iowa anesthesia resident graduate, along with Barb, eagerly accepted an invitation to have lunch with alumnus, **Margaret Emmons**, and spend an afternoon in her apartment. This was a most pleasurable experience, one of many more to come, we hope. Dr. Emmons talked about her memories of training in the department, her life in private practice, and her experiences traveling. We're calling this Part I of her memorable contributions to our project of gathering department history. Read more about Dr. Emmons in the article on page 30. Additional trips to meet with alumni are in the planning stages. We also are developing plans to host a department reunion here in Iowa City.

Drs. Margaret Emmons (seated) and Jeanette Harrington sharing memories of life as an Iowa Anesthesia Resident

Those alumni who were able to attend the October 2008 reception in Orlando will agree that this was a fine gathering of friends. We took advantage of this special occasion to celebrate **Dr. Gilbert Kinyon's gift** to create our department's second endowed professorship. Dr. Kinyon, along with his wife, Mary, greeted many friends who came to congratulate them. It was our honor to host this event and celebrate with them.

Be sure to check out the Mark Your Calendar section on page 27. There are upcoming events that we want to be sure you note and plan to join us, if at all possible. Homecoming 2009 promises to be a busy weekend, culminating with our department picnic on Sunday, October 11th. This is a favorite day for us, as we look forward to spending time with our alumni who travel to Iowa City for Homecoming. The following week marks the annual ASA meeting, being planned by the society for New Orleans this year. Our department will host a reception on Saturday, October 17th. Check out photos from both the picnic and the ASA reception in 2008 at **http://www.anesth.uiowa.edu**, under the top bar header Alumni.

We realize we keep promising an article related to the history of the medical student anesthesia externship program, and we haven't yet delivered. The truth is, this is a large assignment – a fun one, but still a large one. Barb is still seeking information from all former externs. Send her anything you have – an e-mail packed full of facts, dates, detail and such, or send her something through the mail that is handwritten or prepared on your computer. She will get really excited if you have photos you can share! The promise still holds. You will read an article related to the extern program in an upcoming issue.

We are also entertaining the idea of compiling a book representing our department's history, recording stories of our successes, acknowledging our failures, presenting the facts regarding how the department evolved and developed. We're interested in gathering and recording the clinical, teaching, and research components. We're also interested in the administrative and political sides of our history. Part I of this project is to gather facts, dates, photos, stories regarding each of our previous department chairs. We'll present synopses on each individual within our newsletter pages, and we've decided to report them "out of order." The first former department head we will write about is Dr. **Jack Moyers**. Obviously, we have an advantage beginning with him, as his son, **John Moyers,** remains active in our department and he holds a treasure chest of memories and knowledge related to his father. However, so do many of our alumni who worked with or trained under him. We need to hear from you regarding your memories of Jack. Send Barb anything you have, but remember how important it is to include a timeline, being as specific as possible. Again, photos are welcome! It deserves to be mentioned that several of our alumni have already taken it upon themselves to share departmental history with us. We've received historical contributions from **Margaret Emmons, Bill Hamilton, Jeanne Jaggard, Gil Kinyon, Frank Scamman,** and **Marty Sokoll** – and we're undoubtedly forgetting to name others. We will never turn anything down that you offer, not even your help in writing a chapter of history!

Our ambitions are lofty, we know. We accept the challenge!

Alumni Profile

Margaret S. Emmons, M.D.

Margaret Emmons emerges as one of our department's well-traveled and long-lived alumni. She was born in Correctionville, IA, completed high school in Ft. Dodge, graduated from Cornell College in Mt. Vernon in 1944, and from Iowa's College of Medicine in 1949. After spending her internship year in St. Louis, MO, she returned to Iowa and completed her anesthesia residency in 1952. Margaret married Dr. Richard O. Emmons in 1947 ('40 DDS, '46 BA, '49 MD, '53 R). In 1954, they moved to Clinton, IA, where Richard was an internist in private practice until his death in 1981, and Margaret practiced anesthesiology until her 1986 retirement. Together, they parented four children, Kathy Emmons (Pleasanton, CA), Sally Myers (Tianjin, China 2008-09), Susan Emmons (York, PA), and Dr. Robert Emmons (Burlington, VT). Margaret returned to Iowa City in 2003 to live in Oaknoll Retirement Residence.

Margaret entered medical school in 1945 during World War II, and her graduating class contained only nine women.

Margaret entered medical school in 1945 during World War II, and her graduating class contained only nine women. Current medical school enrollment presents very different statistics, with the number of women medical students steadily increasing. Margaret recalls that an important factor in her selection of anesthesia as her specialty was her thought that she would have more control over her schedule. In reality, she was on call alone for 20 years! One of her favorite stories involves the birth of her third child. While still a patient in the hospital, she got out of bed, went down the hall, and anesthetized another patient for her delivery! (It was a few whiffs of gas in those days.)

In addition to being a practicing clinician, Margaret was permanent chairperson of the anesthesia committee and served a term as president of the Clinton County Medical Society and also of Clinton's Jane Lamb Hospital Medical Staff. She served on mission committees of two Clinton churches, was on the board of directors of Women's Health Services and Alverno Healthcare Facility (Clinton), as well as Self Help International of Waverly, IA. She received the Clinton YWCA Women of Action recognition and was honored as a Cornell College Distinguished Alumna. In addition, she found time to enjoy biking, golfing, playing bridge and word games, and traveling for a purpose with family, friends, and colleagues. Margaret has visited six continents, many countries, and all 50 states. She was invited to the anesthesia department at Korle Bu Hospital in Accra, Ghana by Professor Kofi Oduro to teach cardiopulmonary resuscitation with Dixie Ribar, a nurse and colleague on the Iowa faculty for basic and advanced cardiac life support. This trip started a continuing interest in Africa, with her travels and interest in geography leading her to support international development work and to create and market geography card games (more on this later).

In recent conversations with Margaret, she shared numerous memories of her days as a medical student and resident at Iowa, her experiences as a clinician in Clinton, many recollections of her volunteer work in other countries, and stories of the fun she is having in retirement. One of her medical school contemporaries was Robert Jaggard, brother of anesthesiologist, **Jeanne Jaggard** ('60 MD). Margaret enjoyed learning from and working with many individuals whose names are familiar in our department - **Charlie Pittinger, Jack Moyers, Bill Hamilton, Stuart Cullen, Lucien Morris** (with whom Margaret stays in communication) among them. Physicians from other UIHC departments are also prominent in Margaret's stories - Johann (Hans) Ehrenhaft (Chairman, Department of Thoracic Surgery, 1948-1985), Russell Meyers (Chairman, Division of Neurosurgery, 1946-1963), William C. Keetel (Chairman, Department of Obstetrics and Gynecology, 1959-1977), Rubin Flocks (Chairman, Department of Urology, 1949-1974), Sidney E. Ziffren (Chairman, Department of Surgery, 1969-1981). One of her favorite stories involves receiving a "severe lesson" from Dr. Ziffren, who was the surgeon supervising a resident performing a hip pinning procedure. As anesthesia resident, Margaret was having some difficulties stabilizing the patient's blood pressure. Dr. Ziffren scolded her for "not keeping the surgeons informed about the problem." Margaret remembers that it was Lucien Morris who taught her one of his dictums, that of "always keeping a finger on a pulse." This was a practice she continued throughout her entire career.

Based on Margaret's friendship with Dr. Morris, and her knowledge of the importance of using the copper kettle (invented and designed by Dr. Morris), in the early 1960s, she bought one for each of the hospitals in Clinton in which she worked. At that time, it was not uncommon for physicians to purchase, own, and maintain all equipment needed for their specialty practices. She worked with a local pharmacy to purchase gas and the necessary relaxants and other drugs, transporting these from hospital to hospital, and figuring in the cost for each case. When the hospitals starting furnishing anesthesia equipment, she sold one of her machines to a veterinarian who used it in her surgeries. When Clinton's Mercy Hospital built a new facility in the early 1970s, Margaret performed the first case with piped-in oxygen and nitrous oxide. She made sure that her auxiliary oxygen tank was full, just in case there was a glitch in the automated system (which did not happen, by the way!). Margaret saw each patient herself preoperatively (the night prior to the procedure in the old days), always started her own IVs, and saw at least 98% of her patients postoperatively, usually until they left the hospital.

Earlier, we mentioned the worldwide travels of Dr. Emmons. It was three trips to Africa and two to Israel that directly led to her developing her geography card games with her own web site, **http://www.travelbygames.com**. A souvenir game, "Jerusalem Picture Card Game," was such a hit with her grandsons that it served as a model for several other geography games played following the same rules as for *Go Fish*. Africa seemed an obvious choice to her for developing this interest into a truly professional game. Her three-year work with graphic artists and printers resulted in *Go Travel: Africa* and a small business that continues to this day.

Dr. Margaret Emmons joins our department events whenever possible. I must share with you what a privilege and pleasure it is for me to join other former and current department members who call her our friend. I look forward to hours more of reflective conversations and years more of fun outings with her.

Barbara J. Bewyer

A Letter from UI Foundation

"We make a living by what we get, we make a life by what we give."

Winston Churchill

A Word from Monica (Foley) Lewis
Department of Anesthesia representative for the UI Foundation

Monica Lewis

Private gifts support our important mission of being a leader in patient care, education and research. The integrity of our program and its reputation depend upon the philanthropy of individuals. In tough economic times like the one we are now experiencing, it is important, and stress relieving, to take the long view. With this in mind, I invite you to consider including the Department of Anesthesia in your own long-term plans. If the department has been important to your development in the field, make its continuation as a world-class program part of your own legacy.

Leaving an estate gift for the department can provide peace of mind—it ensures that your resources are available as you need them in retirement, as well as being put to use in a way that you can feel good about after you are gone. We can even structure gifts to the department that provide income to you or your loved ones.

I am available as a resource as you shape your philanthropic legacy. If you decide to include the department in your estate plans, we can work together to shape your legacy and find the best match for your interests with the needs of the department. It is also important that you communicate your intentions to us so that we can ensure the appropriate legal language is included in your will or trust, and that we fully understand the intentions for your gift. If you have any questions regarding giving opportunities or department needs, feel free to e-mail me at monica-lewis@uiowa.edu or call me at (800) 648-6973.

Monica Lewis
Assistant Director for Development, Major Gifts
Carver College of Medicine/University Hospitals and Clinics
The University of Iowa Foundation
www.uiowafoundation.org

Photo Gallery

2008 ASA MEETING

Drs. Deborah Dehring and Robin Goldsmith

Drs. Michael Todd and Gilbert Kinyon

Drs. Christine Carstensen and Timothy Brennan

Michael and Linda Todd, Gilbert and Mary Kinyon

Dr. Kenneth and Mrs. Mary Sugioka

Dr. R. Dennis Bastron

Dr. Dale and Mrs. Louise Morgan

Overview of reception attendees

AIRWAY WORKSHOP

Drs. Mazen Maktabi (Associate Professor) and Robert From (Associate Professor) with registrants during the workshop

Dr. Javier Campos (Professor) with registrants during the workshop

2008 FALL PICNIC

Dr. Eric Swanlund

Drs. Hal Jaffe and Jeanne Jaggard

Dr. Dale Morgan with Mrs. Linda Todd

Overview of people just beginning to arrive at the fall picnic

Dr. Hans Steine

Dr. Todd in "I'll get it" position during a volleyball game!

CA-1 RETREAT

L- R: Drs. Corey Anderson, Somchin Puangsuvan, Joey Odum, John Klein

L- R: Drs. Burke O'Neil, Lee Kimball, Jared Lake, Michele Tarasi, Major Boateng

FLOOD OF 2009?

Location #1 of department's January frozen water pipe explosion

Location #2 of department's January frozen water pipe explosion

University of Iowa Hospitals and Clinics
Department of Anesthesia
200 Hawkins Drive
Iowa City, IA 52242

Change Service Requested

Save the Date!

For additional information, contact Lori Bailey Raw, CME office:
lori-bailey@uiowa.edu or 319-335-8599

IOWA ANESTHESIA SYMPOSIUM IX

Conferences and Workshops:

- *Update on Regional Anesthesia for the Aortic Stenosis Patient requiring Orthopaedic Surgery*
- *Update on Regional Anesthesia in the Emergency Room*
- *Update on Nerve Blocks for the Shoulder, Scapula and Clavicle*
- *Update on the Psoas Compartment Block*
- *Ultrasound-guided Sciatic Nerve Blocks*
- *Update on Femoral Nerve Blocks*
- *Update on Pediatric Anesthesia*
  1) a child with upper respiratory tract infection
  2) caudal epidural analgesia
- *Update on Management of the Difficult Pediatric Airway*
- *Update on Cricoid Pressure*
- *Update on Acute Complications of Intubation*
- *Update on Anesthesia for Cardiac Patient undergoing Non-cardiac Surgery*

Saturday and Sunday
May 9 & 10, 2009

Antonio R. Damasio Conference Room
7th Floor General Hospital
University of Iowa Hospitals and Clinics

Program Director:
Javier Campos, MD;
Co-Director:
Robert Raw, MD

Sponsored by:
The Department of Anesthesia, University of Iowa Roy J. and Lucille A. Carver College of Medicine

This activity has been approved for *AMA PRA Category 1 Credit™*.

If you receive this announcement, a brochure with registration form will be mailed to you.

For additional information, call 319/335-8599 or visit us at www.medicine.uiowa.edu/cme

Erratum

In the Spring 2009 issue of the Department of Anesthesia, page 18, the "Meet the New Faculty" section included incorrect identification for Dr. Anil Marian and Dr. Sundar Reddy. The correct information appears below. The managing editor regrets the error.

Anil Marian, M.B.B.S., M.D., F.R.C.A.
Clinical Assistant Professor

Anil Marian, M.B.B.S., M.D., F.R.C.A., joined the department in July 2008 as Clinical Assistant Professor. Dr. Marian completed his medical degree at Trivandrum Medical College in India and his postgraduate study in anesthesia at the University of Mumbai. He has held positions in the United Kingdom, and most recently spent a year as Visiting Instructor in Anesthesiology at the University of Michigan, Ann Arbor. His clinical and research interests include regional and ambulatory anesthesia.

Sundar Reddy, M.B.B.S., F.R.C.A.
Clinical Assistant Professor

Sundar Reddy, M.B.B.S., F.R.C.A., joined the department in July 2008 as Clinical Assistant Professor. He completed his medical degree at Andhra Medical College in India and his postgraduate study in anesthesia at Wessex School of Anaesthesia in the United Kingdom. He held appointments in the United Kingdom prior to joining the anesthesiology team at the University of Michigan Medical Center in Ann Arbor, MI. Dr. Reddy enjoys the teaching opportunities available in our department, and has also welcomed being a member of the liver transplant team.