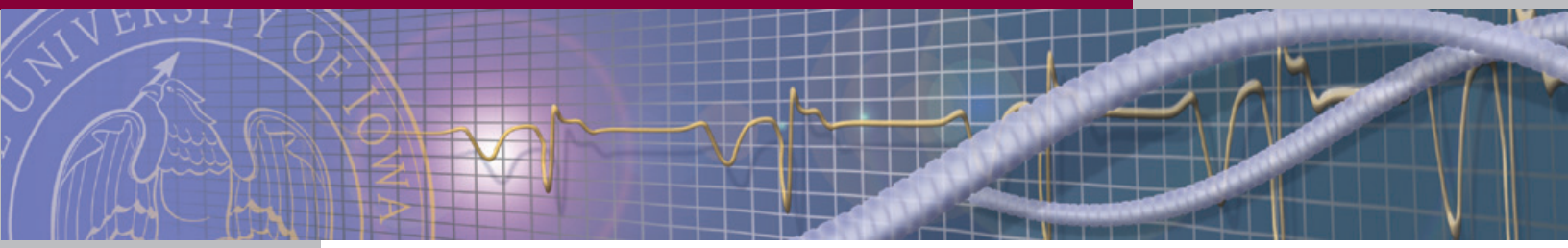
University of Iowa Hospitals & Clinics
University of Iowa Health Care

Department of
ANESTHESIA
The University of Iowa



Spring 2012

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NOTES FROM THE CHAIR

The Last Seven Years - And the Next

July 2011

During our recent holiday in northern Minnesota, I spent a lot of time watching the snow fall over Lake Superior and thinking back over the years I've been head of this department, starting in July 2004. I kept encountering an odd sensation - a distorted and inconsistent sense of time.

Some events that were crystal clear in my mind turn out to have occurred many years ago, while other, more vaguely recalled events, happened much more recently. I suppose it's tied to the emotional impact of some events, or perhaps just to the quirks of an aging and cluttered brain. But it concerned me, and so I started building a list of departmental accomplishments. Many of these have been described in previous newsletters (or in this one), but I found personal value in putting them all together. The list here is clearly incomplete (I'm actually working on a more accurate time line), but even with this snapshot, you quickly realize the amazing nature of the changes that have occurred.

1. We've rebuilt our faculty and restored the academic mission of the department. Almost 50% of our current faculty has been with us for less than five years and our recruitment of bright young physicians continues. In 2004, half of our faculty had NO formally allocated nonclinical time; now, in spite of having fewer faculty members per service location than before, each has guaranteed time (averaging one day per week at a minimum). This is bearing fruit; in 2011, we saw two faculty receive new National Institutes of Health grants (new grants to individuals not previously funded), we had ten faculty submit or publish their first papers - with more on the way. Our internal review group is handling two to five new research proposals each month, and in many cases the proposals are faculty-resident projects. More faculty than ever are involved in first and second year medical student education, two faculty members have obtained masters degrees in medical education, and one has completed the equivalent of a masters in public health.

2. We built a new pediatric team. Back in 2005, we had fewer than three full time equivalents of pediatric-trained faculty, and generalists were caring for a large fraction of even the smallest children. We now have eight pediatric

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faculty and two experienced pediatric CRNAs, we provide 24/7 pediatric coverage, and experts care for ALL infants and children. With the start of construction on the new Children's Hospital, we are in the process of starting a pediatric anesthesia fellowship approved by the Accreditation Council for Graduate Medical Education (ACGME).

3. We've just received ACGME approval for our new cardiac anesthesia fellowship, with our first fellow to begin the summer of 2012.

4. Along with the growth in faculty, we've seen our certified registered nurse anesthetist (CRNA) group grow from a low of 14 in 2004 (after the sudden departure of several individuals) to a group of over 41 today.

5. The aforementioned growth in faculty would be largely pointless and financially unsustainable without a huge and continued growth in our clinical activities. We've transformed the functioning of the main operating room (MOR) and opened the new ambulatory surgery center (ASC), which works the way a real ASC should. We've seen a steady and amazing growth in our case volumes (averaging 4-5% per year!). We opened a new bay in the surgical intensive care unit (SICU), rebuilt the anesthesia preoperative evaluation clinic (APEC), and established a new anesthesia-managed nurse sedation program. This latter has cared for over 5,000 largely pediatric patients, and is becoming a national model. We are by far the largest, busiest and most diverse anesthesia group in the state.

6. We're now over a year into the implementation of the Epic anesthesia information management system (AIMS), and we've been inundated by requests from departments around the country who want to know how we managed to do it so well (hint: it's not a secret, just good planning and preparation, and a huge amount of work).

July 2004

7. We revamped our clinical case conference (CCC), and most recently, have reinvigorated our quality management activities. We've proactively attacked (and largely solved) a number of key problems: a high incidence of low SpO2s on arrival in the postanesthesia care unit (PACU), inadequate neuromuscular monitoring and reversal, ventilator-associated pneumonia in the SICU, and others. We now have built a database of all presentations at CCC for the last five years, and we are using it to better identify less frequent, but nevertheless recurrent and important, problems.

8. Perhaps most importantly, we've rejuvenated our residency program. Our training program has always been good, but now I'm willing to compare the skills of our trainees with any residents in the country. Our residents work very hard, but their dedication to excellence is amazing. Our American Board of Anesthesiology pass rate is near perfect (far above the national average), and the morale of our residents is amazing. We just finished another round of resident applicant interviews, and over and over again, I've heard spontaneous comments about the palpably obvious cohesiveness of our trainees, and this has only grown over the years.

9. We implemented and continue to grow our "foreign mission experience" for faculty and CA-3 residents. You've heard about this before, but half of our current CA-3s are scheduled to participate. We keep seeking high quality experiences; our goal is to offer this opportunity to all residents who wish it. And given the interest expressed by our resident applicants (this program is one of the most attractive parts of our program), this will certainly grow.

Challenges remain (and will always remain). But we can and will continue to improve. Like most academic departments, funding remains a problem - and we remain dependent on the help of our alumni and friends (particularly in support of our foreign mission trips, our simulator operations, and shortly, our externship program). And I still believe the best way to maintain institutional support is to do our job well, to keep our faculty, residents, CRNAs, SRNAs, and staff happy and maximally functional, to keep our surgical "customers" busy - and our patients safe.

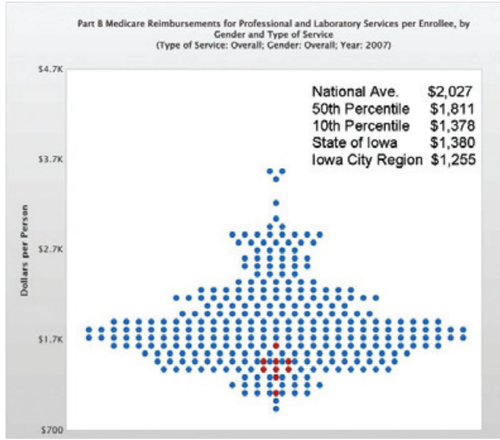
Michael M. Todd, M.D.
Chair, Department of Anesthesia

Master of Health Care Delivery Science: One Term Down, Two To Go

As I wrote in the last issue, I decided to go back to school, pursuing the newly developed Master of Health Care Delivery Science degree at Dartmouth College. I'm now six months in with four of 14 courses complete.

As the makeup of the class participants is significantly varied (the same as the structure of most health care delivery systems – physicians, nurses, nonclinicians such as administrators, insurers and lawmakers), the first term has focused on the fundamentals – ethics, research design and interpretation, finance and clinical microsystems. The point, at present, is to lay the groundwork and get all of us to "speak the same language" – administrators to understand the difference between case-control studies, cohort studies and randomized controlled trials; clinicians to develop the weighted average cost of capital in order to calculate the net present value of a capital equipment purchase; and all of us to frame our thinking within the context of sound ethical decision making.

Concurrent to this work, we've also begun to explore the present state of health care delivery in the United States using tools such as the *Dartmouth Atlas of Health Care* (www.dartmouthatlas.org). A recurrent topic of discussions involves unwarranted variation in areas such as Medicare reimbursements across regions or in health care services themselves. This figure gives a sense of Part B reimbursement variation when comparing the eight Hospital Referral Regions in Iowa (see red dots in accompanying figure) against the balance of the United States. Additionally,



Source: *Dartmouth Atlas of Health Care*, http://www.dartmouthatlas.org

as anesthesiology is among the lowest reimbursed subspecialties under Medicare, it's clear why our department, like so many academic anesthesia departments, struggles financially under the prevailing reimbursement model.

While payment variation is generally understood and recognized uniformly, unwarranted variation in patient care has been a more difficult concept for many to accept. However, as data indicates, there are wide differences in provider practice spread over just a few miles. Early studies by John Wennberg, M.D., Ph.D., Dartmouth professor and founding editor of the *Dartmouth Atlas of Health Care*, demonstrated such discrepancies as a ten-fold variation in rates of tonsillectomy between two otherwise comparable Vermont communities.[1] Even today in Iowa, *Atlas* data indicates significantly disparate rates of various surgical procedures depending on the locale (for example, back surgery per 1000 Medicare enrollees: 3.8 in Des Moines versus 7.0 in Mason City,[2] with a national average of 4.5).

While a myriad of potential reasons exists to possibly explain these differences, in many cases it appears most related to patients "delegating" the decision-making to the physician. Patients often feel undereducated regarding their options and opt to trust the decision solely to the provider. By implementing a shared-decision making process for our presurgical patients, where that patient has access to the full gamut of medical and surgical options, risks, and outcomes, the choice is often toward the less invasive medical options first.

The Medicare reimbursement variation clearly has a substantial impact on our revenues, and though patient care variation does involve revenue generation potential, the much larger implication here relates to system-wide costs – hospital and provider utilization, decisions regarding the need to expand a service, hire specialists in a given field, build new physical space, not to mention ultimate patient satisfaction regardless of outcome.

As the country moves toward significant changes due to health care reform, delving into these variations in care delivery will be crucial to our continued success. Will there be regionalization of specialty care, rationing of health care that assesses monetary considerations to end-of-life decisions, expansion of primary/preventative care along with accountable care organizations, altered reimbursement models that reward shared decision making...?

Though we don't know what the future holds for our industry, we know it has to change considerably to survive. We need to prepare our practices for this uncertainty, with a focus on patient-centered thinking and ethical decision making.

John Stark, M.B.A.
Department Administrator

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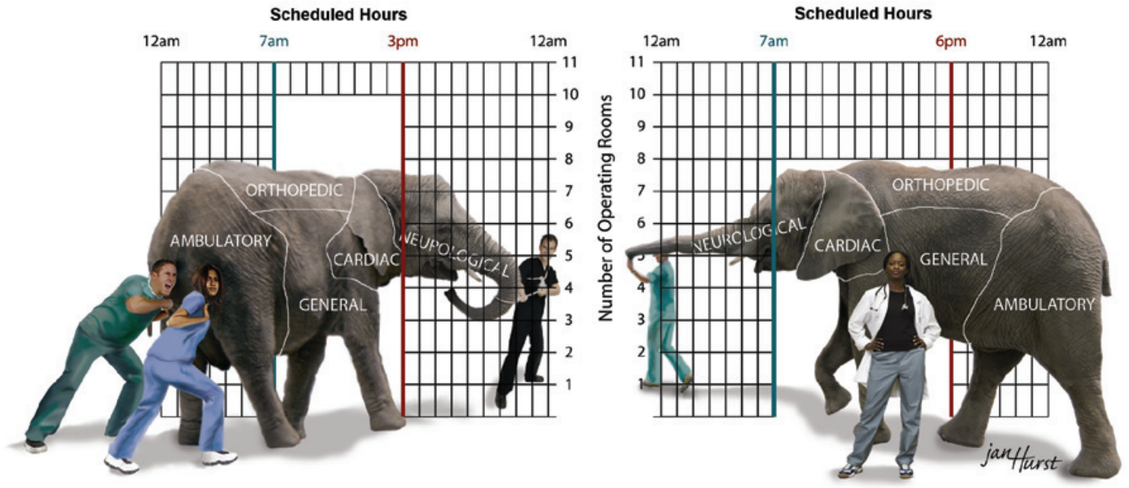

Figure 1.

The Division of Management Consulting

Unique to the department of anesthesia at the University of Iowa is our division of management consulting. Few medical universities house such an exclusive entity, one that provides exceptional services within our institution, as well as offering consultation and teaching to other institutions.

Our division of management consulting is directed by **Franklin Dexter**, M.D., Ph.D., Professor. Working with him is **Ruth Wachtel**, M.B.A., Ph.D., Associate Professor. Assisting both is Ms. **Jodi Kazerani** as project assistant.

What do these individuals do representing the division of management consulting? There are four major areas:

- Perform research in operating room and anesthesia group management
- Implement research by developing methods to improve perioperative workflow
- Teach managers, analysts, and engineers from the University of Iowa and other organizations about methods that have been developed by them and by other investigators
- Perform analyses for hospitals and anesthesia groups to show them how to increase efficiency and/or improve patient flow

A unique aspect of the division is that its research generates practical results and mathematical methods that are directly applicable to improvements in surgical services. The division maintains the web site www.FranklinDexter.net. The web site contains the most comprehensive bibliography available of operating room and anesthesia group management articles, slides of lectures, answers to frequent questions, descriptions of consults, and forms for uploading data.

Dr. Dexter performs most of the outside (non UI) consulting and public lecturing. The income from the consulting work is used to fund the research, which then (ideally) leads to further applications and promotes future consulting. Dr. Dexter receives no funds personally other than his salary and allowable expense reimbursements from the State of Iowa. He receives no honoraria or personal funds for performing consultations. He and his family have no financial holdings in any company related to his work, other than indirectly through mutual funds for retirement. He has tenure and does not participate in any incentive programs.

Research

During the past 15 years, the division of management consulting and its collaborators have developed science in anesthesia group and operating room management. All of the research is published and is in the public domain. The division has published 160 papers in the area of operating room and anesthesia group management, plus 95 book chapters, editorials, and letters. Dr. Dexter has also assisted in more than 90 projects by performing statistical analyses.

The development of operating room management science at the University of Iowa started when Dr. Dexter came to the University in 1990 for his anesthesia residency. In addition to receiving his medical degree from Case Western Reserve University, Dr. Dexter also earned his doctorate in biomedical engineering. To specialize in biomathematics, he took mathematical modeling courses from different departments. Many of the applications were in business systems. When he was finishing his residency, the then head of the Iowa anesthesia department, Dr. **John Tinker**, asked him to apply his background in statistical and mathematical modeling to address the economic consequences of patient stays in the postanesthesia care unit. This was the beginning of internal consulting.

Dr. Dexter remained at the University of Iowa after his residency. By 2003, he was spending an increasing amount of time doing projects for hospitals and companies other than the University of Iowa. By 2003, Dr. Wachtel had recently completed her masters in business administration degree in medical group management from the University of St. Thomas in Minneapolis, MN. She began working on our department's internal projects, providing Dr. Dexter with more flexibility in performing the external projects. The research in the division:

- addresses future challenges in the department of anesthesia and throughout perioperative care at the University of Iowa
- considers topics that will be of concern to anesthesia groups and hospitals in the future and for which consulting software can be developed
- evaluates methods for best teaching the principles of operating room management through the course given by the division, the material posted on the division's web site, and other educational programs

Research in the division spans a wide variety of areas. The examples below are based on the figures:

- Consider the picture from the cover of *Anesthesia and Analgesia* in which people try to force an elephant into a large cage whose opening is too small (figure 1[1] *opposite page*). This picture illustrates the problem of matching staffing to actual workload in the operating room. Papers have investigated the assignment of block time to surgical services, how to schedule cases to avoid as much overtime as possible, how to estimate case durations, when to perform add-on cases, methods for predicting when a case will end given that it has already exceeded its scheduled time, etc. These papers have resulted in mathematical algorithms for staffing the operating room to maximize efficiency. A hospital or anesthesia group, or the division when doing consulting, employs these algorithms with operating room data or anesthesia billing time data to match staffing to workload. The elephant would then fit nicely into an appropriately sized cage.
- Another cover picture from the same journal deals with the start time of a case, incorporating uncertainty in the time remaining of an ongoing case (figure 2[2]). With over two decades of research in case duration prediction, methods of calculations are sophisticated. For example, when it is calculated that there is a 90% chance that the preceding case has 1 hour and 10 minutes remaining,

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Figure 2.

Dr. Dexter's 'Operations Research for Surgical Services' course was outstanding and has provided our institution with a framework for prioritizing operational decision making in the operating room. His approach has helped us to simplify the analysis of a very complex in- and out-of-the-OR environment.

Judy Kersten, M.D.
UI anesthesia resident graduate, 1992
Professor and senior vice chair of anesthesiology
Medical College of Wisconsin, Milwaukee

the actual probability is between 89% and 91%. Statistical methods are so important because many combinations of procedures have been performed previously by the same surgeon only a few times, if at all.

- The third cover picture deals with a metaanalysis comparing times to extubation and the variability in times to extubation for sevoflurane and desflurane (figure 3[3]). Learning how to quantify variability in nonoperative times is important because surgeons rate "patient quick to awaken" as being almost as important as "ability to calmly manage a crisis." Our research has also compared times to extubation and the variability in times to extubation for several other drug pairs, including combinations involving isoflurane and propofol.

Figure 3.

Other examples of our research include the epidemiology of anesthesia in remote locations, patient satisfaction with monitored anesthesia care, patient waiting times for surgery, economics and psychology of first case of the day starts, and staffing of the postanesthesia care unit.

Consulting
The division of management consulting has performed more than 160 external consults, for more than 100 hospitals and 35 companies. In addition, more than 140 internal projects have been performed. The division work has been and will continue to be about implementation. We take basic (applied) science developed by management scientists and industrial engineers and apply it to surgical services.

For some management studies, a paper can be read and then applied by hospital personnel. However, most papers require extensive computer programming for implementation. Some hospitals and anesthesia groups do not have trained personnel to perform the management calculations. Therefore, the division performs the analyses for outside hospitals, anesthesia groups, and companies. As part of a consult, Dr. Dexter teaches the organization about those analyses that were helpful. An advantage of having the division do the initial work is that software used to perform all of the analyses has already been developed. The anesthesia group needs to provide only raw data from its anesthesia or operating room information system.

Some of the analyses that the division performs include:

- case scheduling
- financial analyses
- staffing the postanesthesia care unit
- selecting numbers of operating rooms
- matching of staffing to workload
- assessing market growth potential
- allocation of block time
- appropriate anesthesia institutional support

A group downloads the professional services agreement form, corresponds via email with Dr. Dexter, and then uploads data to our secure private cloud. Typically, results are discussed by web conferencing, or Dr. Dexter can visit.

The division also has a large hourly consulting practice, when mathematics is not the focus. Dr. Dexter uses his knowledge of the scientific literature and his extensive experience to aid an anesthesia group or hospital in making a decision. The consult is accomplished using web conferencing, email, or telephone. A typical example is implementation of a scheduling system for operating rooms or remote locations. The implementation will be done by the anesthesia group and/or its hospital with the help of outside consultants. Before the group makes a decision, it wants to know the principal issues to be considered. Usually this type of work takes a few hours. Essentially, the division's goal is to teach organizations how to use the science.

Drs. Dexter and Wachtel perform similar types of analyses internally for our department of anesthesia. In fact, much of the research is based on University of Iowa data. Dr. **Javier Campos**, executive medical director of the operative rooms, may have a question about the main surgical suite or the preanesthesia evaluation clinic. Dr. **John Laur**, medical director of the ambulatory surgery center, may have a question relative to his area of responsibility, or one of the anesthesia division directors may want to know more about an issue that requires data. They turn to the division of management consulting to provide the science on which they can base their decisions. Drs. Dexter and Wachtel analyze historical data and predict what issues will be important over the next year or more. Internal projects during the past two years have included:

- estimation of appropriate numbers and cost effectiveness of anesthesia technicians
- how and why to focus on turnovers based on psychological factors
- role of surgical outreach clinics in maintaining perioperative caseload
- impact of changes in scheduled procedure(s) on predictive errors in case durations
- optimal resident staff scheduling on specialty rotations
- influence of training programs on recruitment of CRNAs
- scheduling of preanesthesia evaluation clinics

Scientific approaches to these issues permit the department chair, vice chairs, assistants to the chair, etc., to make long-term evidence-based managerial decisions.

The external consulting is an important source of data and collaboration for scientific investigations that benefit the department of anesthesia at the University of Iowa. For example, current ongoing research aims to understand how an anesthesia group can best coordinate case scheduling at multiple facilities simultaneously. We collaborate with a group that has hundreds of operating rooms at dozens of facilities within a city. We also collaborate with basic and applied industrial engineers employing novel statistical and computational methods to understand the impact of anesthesiologists', nursing directors', and surgeons' psychological biases that affect appropriate decision-making. After this research is complete, the division will work on adaptation of the management science for practical use within the department. Principles will also be incorporated into its educational programs.

Education
The division of management consulting presents a course entitled "Operations Research in Surgical Services" several times per year. The course provides the cognitive knowledge and problem-solving skills required by the American College of Graduate Medical Education for anesthesia systems-based practice. Each of this year's CA-3 residents is participating in the class. By providing the class twice per year in Iowa City, residents, faculty, and new programmers working in our department can learn the science without having to travel. More detail regarding this course can be found on page 18 in this issue.

Franklin Dexter, M.D., Ph.D.
Professor
Director, division of management consulting

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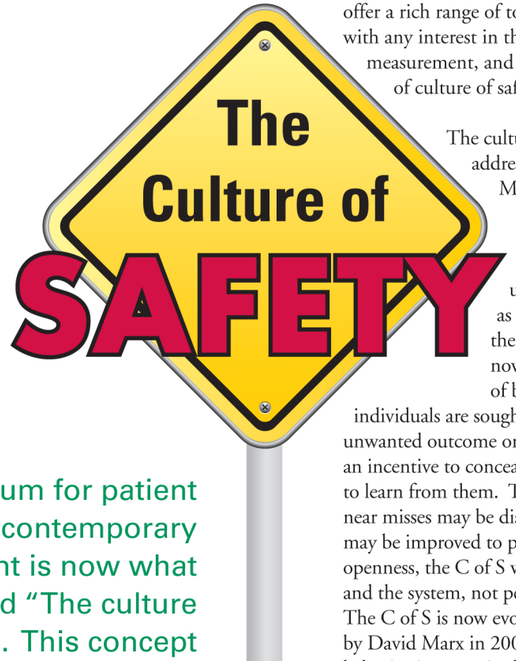
Check out our online
Photo Gallery

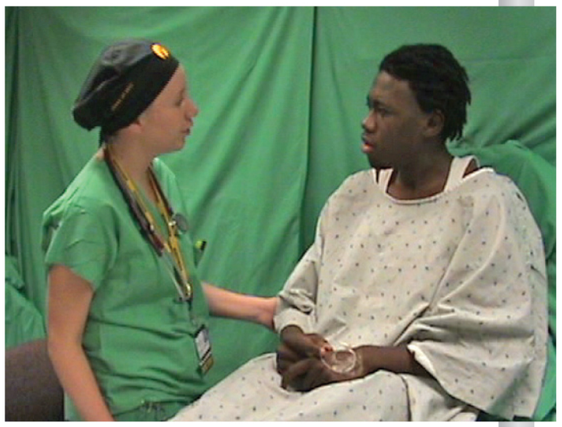
We are improving our skills of photographically capturing people and events our department sponsors – so much so that we can't fit all of the pictures we would like to share with you in our print newsletters (pg. 30). Thus, we invite you to view a more expansive Photo Gallery stored with the electronic version of this newsletter issue.

Please spend a few minutes enjoying these photos by **clicking on the graphic of the newsletter cover** visible on our Home page at: **www.anesth.uiowa.edu**.

We collaborate with a group that has hundreds of operating rooms at dozens of facilities within a city.



The momentum for patient safety in any contemporary clinical department is now what has been termed "The culture of safety" (C of S). This concept is easy to acknowledge - who comes to work in the morning choosing to be unsafe? - but hard to define or quantify.



CA-2 resident, Katherine Jessop, M.D., receives simulation training with professional actor, Gregory Geffrard.

For those interested, a detailed introduction to the culture of safety is available from both the Patient Safety Net of the Agency for Healthcare Research and Quality (AHRQ)* and the Institute for Healthcare Improvement (IHI)**. Both of these organizations offer a rich range of tools, courses, and instruction for anyone with any interest in the science of health-related safety, outcomes measurement, and performance improvement. The foundations of culture of safety are professionalism and quality.

The culture of safety concept evolved from efforts to address the findings published in the Institute of Medicine's 1999 publication, *To Err is Human: Building a Safer Health System*[1], a report now familiar to most of us. It was developed as a replacement to the then pervasive, and still now existing, "culture of blame," in which individuals are sought to blame for any unwanted outcome or error, thereby creating an incentive to conceal unwanted outcomes and consequently to fail to learn from them. The C of S is an environment where errors and near misses may be discussed openly and analyzed, so the "system" may be improved to prevent future adverse events. To encourage openness, the C of S was initially declared to be entirely "blame free" and the system, not people, would be faulted, and then improved. The C of S is now evolving into a "just culture," as first described by David Marx in 2001[2], in which human failure or irresponsible behavior is recognized and managed as well as systems faults. A ratio of 20:80 is widely quoted as the distribution of responsibility between individuals and the system for preventable adverse events. In order to maintain the spirit of openness and safe disclosure of the C of S, however, it is essential that any assignment of responsibility is made with the greatest of care and any individual held personally responsible must be treated with respect and positively supported through their resolution of the underlying problem, whether it be education (usual), or performance or attitude (rare).

With leadership from our chairman, Dr. **Michael Todd**, this department has embraced the "just" culture of safety. New residents receive instruction in professionalism and the C of S in their initial orientation, often during their first day of instruction. They are shown what to report, how to report it, why to report it, what the ethics and benefits of disclosure and reporting are, and what to expect when (not if) they find themselves in the position of having to make a disclosure. This supportive, learning, and problem-solving attitude is maintained during the weekly clinical case conference (M&M), the most common forum for general disclosure, or during a personal debriefing. Any investigation and analysis resulting in the assignment of personal responsibility is conducted with meticulous care and can be very time consuming. A major department initiative making it much easier to voluntarily report adverse anesthesia events (do the right thing) through a secure web server has just been completed. This has immediately tripled our receipt of such reports. I hope the trend continues.

*http://psnet.ahrq.gov. Select 'Patient Safety Primers' in the menu bar.
**http://www.ihi.org. Search for 'Culture of Safety' or course PS106.

Disclosure of adverse events to patients is not easy, can be very uncomfortable, and must be learned. If done badly, there can be serious consequences. Our department's patient simulation center team, along with others, were proud very recently to be praised by our institutional leadership for their work in developing and teaching a course in disclosure of unwanted outcomes. This was part of an institution-wide initiative by the hospital legal department, to improve adverse event management.

Our institution's general reporting system, the Patient Safety Net (PSN), is a web-based product of the University Hospitals Consortium, who provides archiving and analytical tools that may be applied to the reports. This system is more frequently used as a third party reporting system and, unfortunately, is widely perceived as a tool to assign blame for occurrences, often personal behavior, of which the reporter disapproves. These reports are widely distributed, including to a safety oversight team comprised of senior management, but are not always accurate. Our department performance improvement group chair, the executive director of the operating rooms, Dr. **Javier Campos**, and one or two divisional leaders are designated as managers within the PSN system and receive PSN reports that are within their scope or area. Valid reports of adverse events are dealt with promptly, often resulting in a clinical case conference presentation and performance improvement initiative. A recent instructional presentation by a specialist on the management of peripherally inserted central catheter (PICC) lines, is a good example of such a response to a series of PSN reports. This sort of educational material is customarily repeated at a quarterly review and outcomes meeting when events of the past three months are reviewed, and archived on our Intranet. Invalid PSN reports are carefully analyzed and rebutted, sometimes without a need for the subject of the report to participate. Such rebuttals can also be very time consuming.

Safety People
Under the direction of Dr. Todd, the point person for safety and quality in our department is the performance improvement chair (PIC), who reports also to the hospital chief quality officer, in compliance with the Joint Commission Standard LD03.01.01. The PIC is assisted by the director of the clinical case conference program, Dr. **James Bates**, members of the peer review panel, Dr. **Alan Ross** and Dr. **Shawn Simmons**, and the archivist of event reports and case presentations, Dr. **Unyime Ituk**. The department executive officer, Dr. Todd, maintains a direct personal involvement with matters of safety and quality, and the PIC also works closely with Dr. Campos, and the directors of the surgical intensive care unit, Dr. **Kent Pearson**, and ambulatory surgery center, Dr. **John Laur**, who have performance improvement programs of their own.

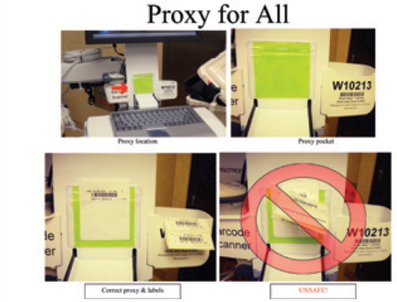
Quality and Performance Improvement
Quality and performance improvement is the second arm of a patient safety program. The disclosure of the culture of safety and the resulting root cause analysis (RCA) are retrospective tools. Performance Improvement (PI) projects are prospective tools for safety, although some may actually be triggered by a RCA. PI projects may be driven from outside or from within our own practices. Externally driven projects may come from adherence to standards and guidelines and also initiatives from patient safety organizations (PSO) that are required by regulators. Participation in these projects is often regarded as "compliance," but the goals are nonetheless, performance improvement.

Compliance Projects
From the start, our department complies with the standards and guidelines of the American Society of Anesthesiologists. This is written into our procedure manual. Next, we comply with projects required of us by regulators, often the Joint Commission on Accreditation of Healthcare Organizations (JACHO), usually in the context of an institution-wide initiative. Current examples would be the surgical care improvement project one (SCIP 1) and the central venous catheter (CVC) bundle.

Surgical Care Improvement Project 1 (one of six) required by Centers for Medicare and Medicaid Services (CMS) and JCAHO will be familiar to many. This project, based on questionable evidence, requires the documentation of the administration of indicated preoperative antibiotics in a timely fashion. Simple in concept, it has proven extraordinarily complex and burdensome in execution, requiring multiple meetings, extended education, investment in infrastructure, and continued surveillance. Our department head, the PI chair, and a senior hospital manager spend several hours a week auditing compliance, the results of which are publically reported. Nationally, this must cost tens of millions of dollars. Sadly, a comprehensive review of surgical infection rates in North Carolina showed no improvement following implementation of the individual SCIP measures.[3]

The CVC bundle is a happier project. Following the success of the Michigan intensive care unit project to reduce central venous catheter associated blood stream infections (CLABSI),[4] a similar bundle was introduced in our main operating room as part of an institution-wide initiative. A real-time audit at the time showed near 100% compliance with the bundle. Data now emerging from our electronic medical record shows that CLABSI are not now associated with central or arterial lines inserted in the operating room.

Internal Projects
During a recent department faculty meeting, Dr. Todd and I presented an estimate of the number of performance improvement projects undertaken in the past few years. We were still counting at 70! It really is a continuous process, and it really makes a difference. Here are just two examples that have altered our practice.



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PATIENT SAFETY AND THE DEPARTMENT OF ANESTHESIA
continued

Blood Products: Some years ago, our blood transfusion service, led by John D. Kemp, M.D., Professor of Pathology, University of Iowa, introduced a barcode tracking system linking the recipient's identifying wristband with the matched blood product.[5] When this system was introduced in our operating rooms, we immediately realized that identity bands are frequently inaccessible under surgical drapes and that an ultra-reliable method of creating a proxy for the bands had to be designed immediately. After an exhaustive failure mode and effects analysis and multiple audits, a system shown to be seven times safer than the standard check system commonly employed was developed. This system was recently publicly recognized by the JCAHO as being state-of-the-art and published by them as a webinar.

Monitoring of Muscle Relaxation: The potential for inadequate reversal of muscle relaxants postoperatively is well recognized by anesthesia providers. A small number of near misses and culture of safety disclosures (no patient suffered an actual injury) led to an internal audit ordered by Dr. Todd, analysis discussed during a clinical case conference, and an improvement of intraoperative monitoring that was confirmed by a subsequent check. No more near misses to date. This is a classic example of the define-measure-analyze-improve-control (DMAIC) tools of the industrial "Six Sigma" quality improvement process.

People are naturally inclined to do what's best, but most dislike change. One thing we have learned from these projects is that although change is said to be always hard, the best way to effect it is to make it easy to do the right thing. Easy means ensuring that people know exactly what the right thing to do is and why they should do it, then provide the right tools and the right training to use them.

What Next?
Due to our advances over the past 25 years or so, almost unique in healthcare enterprises, anesthesiology is now approaching the "six sigma performance" grail of an ultra-safe organization (3.4 defective outcomes per million opportunities). No other clinical specialty even comes close. The aviation industry performs between six and seven sigma.

We are on the right path; we should continue down it. There will always be opportunities to improve or for our outcomes to deteriorate if we lose vigilance. Genuine quality and performance improvement is one of the very few real options available to us now to avoid the impending Medicare financial crisis.[6] Our anesthesiology community has the opportunity to set the example.

David Papworth, M.B.B.S.
Clinical Associate Professor
Director, Departmental Performance Improvement

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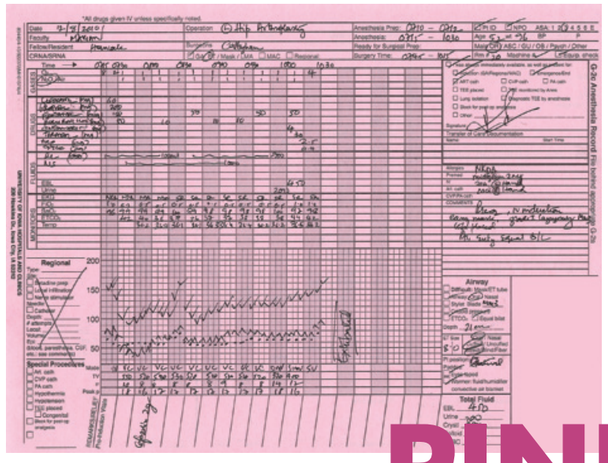
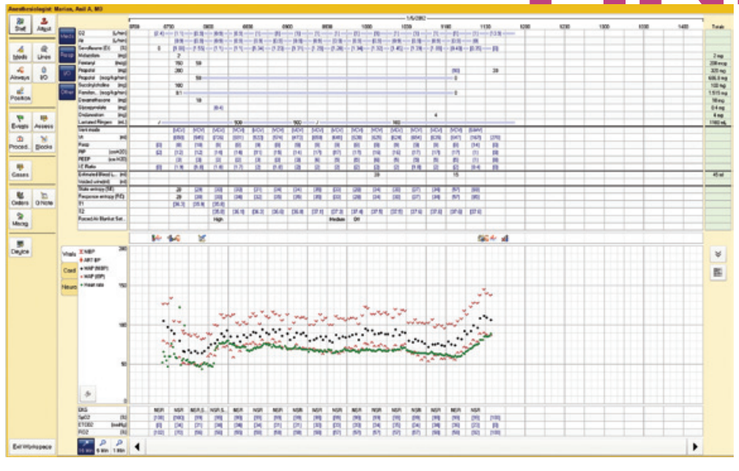
One of the most important changes in the history of our department began in 2008, culminating in late 2010 and continuing into 2011 —the transition of intraoperative record keeping from paper to electronic.





PINK SHEETS *are gone!*

Electronic anesthesia records or anesthesia information management systems (AIMS) are radically different from most other electronic health records, both in terms of the sheer volume of data that must be collected, and that the data must be entered over a short and very critical phase of patient care. Specifically, anesthesiologists must quickly and accurately record a great deal of information while simultaneously engaged in direct patient care. Such information includes vital signs (recorded every 1 to 5 minutes), clinical procedures (intubation, central venous cannulation), fluid and blood administration, surgical events, and documentation of multiple doses of administered intravenous medications. It is in this context that the work done in the implementation of the Epic electronic anesthesia records assumes significance.

In October 2008, our department chair, Dr. **Michael Todd**, asked me to consider being involved on a committee to implement electronic anesthesia records at the University of Iowa Hospitals and Clinics (UIHC). That initial request soon turned into a request to take the lead in the project. The focus of my position as the clinical leader on this project was the design, testing, user training, and successful implementation of the Epic electronic anesthesia record. For me, this project has truly been "all consuming." Over the two years of Epic anesthesia development, I led various teams totaling more than 50 people at the University of Iowa, literally hundreds of official and unofficial meetings - within UIHC, at Epic headquarters and, more recently, with numerous other hospitals by teleconference. So frankly, it is difficult to write about our transition, without it looking like a personal statement, but I should clearly state that it was the work of a huge team of people within and outside our department. I just had the privilege to lead them from the front.

The American Recovery and Reinvestment Act of 2009 emphasizes the need for the United States to move toward the use of electronic health records. UIHC began Epic implementation on May 2, 2009; however, at that time, an Epic intraoperative anesthesia record was not operational. Epic anesthesia did not come "out of the box;" in fact, quite the contrary. UIHC was only the second hospital and the largest academic center in the United States to utilize the Epic anesthesia record. Our team made a massive effort to avoid the problems other hospitals had faced, including revenue loss. After two years of development, the Iowa Epic intraoperative anesthesia record went live on November 8, 2011. Its introduction was characterized by UIHC leadership as being "flawless" and as an "unqualified success," without any slow down of the operating room schedule, without any loss of revenue, and without any loss of patient documentation. Now, because UIHC is the largest university hospital that has successfully gone live with Epic anesthesia, we are a major consulting authority for academic and private anesthesia groups across the country that are implementing Epic anesthesia.

It is nearly impossible to describe all the work that we accomplished over the last three years, but I will define some of the major challenges and achievements during this process of implementation.

Designing and Configuring the UIHC Epic Anesthesia Record in the Context of an Integrated Electronic Medical Record
Every element of the Iowa Epic anesthesia module was developed to utilize the full potential of an AIMS. This included development of the preoperative navigator and note writer, postoperative navigator and postanesthesia care unit note, and finally, and by far the most complex, the intraoperative module. Within the intraoperative module, numerous components were created to facilitate documentation of both simple and complex anesthesia and surgical procedures. These include sections to document 1) airway management, 2) intravascular access, 3) regional anesthesia blocks, and 4) perioperative events. To make the daily work routines easier, specific schedules were created for UIHC including rounding and attestation schedules. Because the Epic anesthesia record is a shared hospital-wide record, the need for anesthesia specific airway information created a conflict with standard nursing documentation. Extensive discussions with all parties including the department of nursing and Epic helped resolve this issue. Order sets were created for preoperative, intraoperative, and postoperative uses. All of these design and

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PINK SHEETS ARE GONE!
continued

development elements were constructed to seamlessly integrate with the overall patient-centered, hospital-wide Epic electronic medical information system, rather than simply developing a stand alone and anesthesia-specific AIMS. While I agree there is always room for improvement, the overall impression of our clinical providers is that the Epic anesthesia records are far better both in terms of usability and functionality than the rest of the hospital Epic system.

Ergonomics and Hardware Issues
Unlike a discrete clinic or hospital clinical unit, anesthesia care is provided in a very large number of areas throughout UIHC—and this resulted in a challenging information systems design problem. Anesthetizing locations include: 1) 30 main operating rooms; 2) 8 ambulatory surgery center operating rooms; 3) electroconvulsive suite; 4) urology; 5) radiology; 6) interventional radiology; 7) radiation therapy; 8) magnetic resonance imaging; 9) adult cardiac catheterization laboratory; 10) pediatric cardiac catheterization laboratory; 11) labor and delivery; 12) digestive diseases clinic, and 13) bronchoscopy laboratory. At each of these sites, we needed to acquire new anesthesia hardware including touch-screen monitors (since Epic anesthesia was modeled to be used with touch screens) and Capsule Neuron™ platforms (device integration hardware) (Capsule Tech, Inc., Andover, MA) that transmit data from the anesthesia machines and monitors to the Epic server through the Cloverleaf interface engine (Healthcare Communications Inc., Dallas, TX). For all fixed locations, Capsule Neurons™ were hardwired whereas for mobile locations, we mounted the Capsule Neurons™ into the anesthesia machines and used the wireless capability of this novel device to transmit data wirelessly to Epic. We were one of the first hospitals to do this wireless transmission of patient data into electronic health records.

Use of the Department's Patient Simulator Center for Designing, Data Validation, and Testing Downtime Situations
A highly unique element of Iowa Epic anesthesia development was our utilization of the patient simulator center to design, validate data, and test Epic downtime situations. The anesthesia patient simulator center is a fully equipped, state of the art facility that is configured primarily as an operating room, with a General Electric anesthesia machine and a Datex-Ohmeda S/5™ hemodynamic and respiratory monitor (GE Healthcare, Barrington, IL). We were able to simulate all forms of perioperative anesthesia physiological data, including invasive cardiac monitoring. All the necessary hardware was set up in the patient simulator center, including Capsule Neurons™ and touch screens. We utilized a test system, Epic proof of concept (POC), rather than the production Epic system. Testing of all downtime situations, where a break at different points of the network would impact the data flow and how it could be corrected, was also performed. We plan to continue to utilize our patient simulator center for testing and development, as well as for training of new members of the department on how to use Epic anesthesia.

The Go Live Team

Installation of Necessary Software and Firmware Upgrades of Machines and Monitors
In the process of Epic anesthesia development, we became keenly aware that we had several different generations of General Electric/Datex-Ohmeda anesthesia machines, with different generations of Datex-Ohmeda S/5™ monitors attached to them. The estimated total cost of upgrading all these machines and monitors to the latest software approached $150,000. Extensive research, in consultation with the GE engineers in Helsinki, Finland, decreased our upgrade costs from the initial estimate to around $10,000.

Following anesthesia intraoperative go-live in November 2010, problems related to Capsule Neuron™ resulting in temporary loss of data were identified. These problems were taken up directly with their headquarters in France, which resulted in software updates received by the UIHC in a timely fashion. We have had multiple software and firmware upgrades since then, including a very critical capsule upgrade recently that helped us integrate the newly acquired AISYS® model anesthesia machines into Epic.

Use of Epic Proof of Concept (POC) for Training Clinicians
The 180+ clinical care providers in the department of anesthesia (all faculty, residents, CRNAs and SRNAs) received formal training in the use of Epic anesthesia over a two-week period (September 27-October 8, 2010) in 30 separate two-hour sessions. More importantly, following classroom training, clinicians were allowed to familiarize themselves and "play" with Epic anesthesia for four weeks before actual go-live. We utilized a highly novel and highly successful approach. With the help of UIHC health care information systems, we converted the Epic POC test system into a training ground. All anesthesia clinicians were given access to this system. This approach probably made the biggest impact at go-live, because most of our clinical providers were very experienced in using Epic anesthesia by the time that go-live occurred. This four-week practice session with hundreds of end users also identified numerous glitches and omissions that, despite hundreds of hours of development, were simply not apparent until tested in a real clinical environment. When we went live, the end users were familiar with Epic and Epic had already been "battle tested."

Go-live November 8, 2010
The go-live support involved managing a team of over 100 support staff including anesthesia clinical super users, health care information systems support staff, and Epic support staff. A central command center was set up in our department with multiple computer workstations and phone lines. The floor support was divided into 12 subgroups to help provide focused support. The support system worked 24/7 during the first two weeks, even though after the first two to three days almost no support was needed. In fact, go-live went without any slow down, decrease, or other change in the operating room schedule. During the time of go-live, multiple departmental polices, tip sheets, and trifolds were created to help clinicians make this transition smoothly. During the time period between going live on November 8, 2010 and January 1, 2012, we engaged in over 35,000 cases in Epic anesthesia.

Ongoing and Future Developments
We continue to assess the clinical, billing, and compliance needs of the anesthesia department and UIHC. Projects we are currently developing include documenting labor epidural anesthesia, integrating the newly acquired anesthesia machines like AISYS®, getting blood product documentation in Epic, modifying Epic anesthesia to utilize improved functionalities such as automated reminders, other forms of decision support, and numerous other design and content changes. In collaboration with the Anesthesia Quality Institute, we have initiated the process of standardizing data elements between various hospitals and downloading the data into the National Anesthesia Clinical Outcomes database. A similar project is been planned with the Multicenter Perioperative Outcomes Group.

The success of the implementation of Epic anesthesia at the University of Iowa is been shared with the anesthesia community through scientific abstracts and exhibits at major meetings, including the 2011 American Society of Anesthesiology meeting, as well as my visiting professorships to various university hospitals. Personally for me, while working to institute Epic anesthesia here at UIHC was a major challenge, it was also extremely satisfying to successfully complete the project. I want to specifically thank our chair, Dr. Michael Todd, for showing confidence in my abilities and guiding and supporting me throughout this challenge. I also thank Ms. Anita Gillett, from UIHC health care information systems, who did most of the designing, content and testing with me, Ms. **Kris Jones**, our department's patient billing "boss," who was involved in this project from the beginning, making sure all billing and compliance requirements are met, Dr. **Frank Scamman**, who was closely involved in the build and test, Dr. **David Papworth**, who made sure UIHC and Centers for Medicare and Medicaid Services compliances are met, Dr. **Bradley Hindman** for providing vital advice and directions, and Dr. **James Bates**, who is involved in the labor and delivery module. I wish to give special thanks to the HCIS team, billing team, pharmacy and nursing informatics, patient simulator center team, and the clinical super users of the department of anesthesia for their contributions to this successful project. Lastly, I must thank my wife, Christie, and my children, Amy and Abhay, who supported me throughout while I spent evenings and weekends away from them, working on the Epic anesthesia record.

To quote Thomas Paine, "It is the direction not the magnitude which should be taken into consideration." This project was huge in magnitude but I believe it has helped us move in the right direction. It is only just past a year since anesthesia transitioned to electronic documentation, but it already feels like a very long time. Clinicians, including myself, have partly forgotten how to fill in a "pink sheet," our original paper anesthesia record. More strangely, we have a new group of young anesthesiologists growing up primarily doing electronic documentation and who have rarely, if ever, manually charted vitals and other important patient information every five minutes on a piece of paper. While the immediate benefits are apparent, the benefits of the electronic anesthesia records as a research and management tool are to be reaped in the years to come!

Anil A. Marian M.D., FRCA
Clinical Assistant Professor
Director, Anesthesia Perioperative Informatics

Important Personnel Involved in the Epic Anesthesia Implementation Project*

Healthcare Information Systems (HCIS)
Anita Gillett
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Kristy Walker
Lee Carmen
Teresa Lane
Kurt Wendel
Tim Hansen
Tom Drews
Brian Hegland & 24/7 team
Tom Alt
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Susan Bye
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Kathy Fear
Heather Bair
Kate Clymer

HCIS Trainers
Kathy McGowan
Kim Robalino

*The entire list of people involved in the project is too big to be listed here. But the work done by all the support staff of HCIS, Billing and the Department of Anesthesia is sincerely appreciated.

A Letter from
UI Foundation

The Cornelius International Mission Resident Fund

The Cornelius International Mission Resident Fund is a privately supported program that sets UI Anesthesia apart from other programs.

Greetings from the University of Iowa Foundation! I hope 2012 is filled with health, happiness and prosperity for you all.

As you may know, my occupation with the Foundation is to promote the department of anesthesia by informing our friends and alumni about the department's priorities and to encourage financial support to those areas.

In this letter, I focus on the Cornelius International Mission Resident Fund. Established in 2009 by Dr. **Pierce A. Cornelius** (BS '53, MD '57, R '60) and Mrs. **Wilene Cooper Cornelius** (BSN '58), this fund is intended to financially support annually five to six senior residents on international service trips. These young physicians spend up to two weeks performing primarily pediatric anesthetics in a variety of remote locales. Not only does this fund provide residents a once in a lifetime experience, discussing the opportunity is very attractive when it comes to recruiting trainees. The American College of Graduate Medical Education (ACGME) recognizes the time anesthesia residents spend on mission trips as a valid elective within their training program, so long as a department faculty member serving in a supervisory role accompanies them. The experience is invaluable. As stated in a previous newsletter, it "cannot be compared to any other opportunity," yet the cost for such a trip averages to $2,500 per resident. Preceding the targeted fund initiated by Dr. and Mrs. Cornelius, the department itself committed to funding each resident. Prior to the ACGME recognizing resident mission trips as an accepted elective, anesthesia faculty were required to use their vacation time and personal funds to accompany residents. Fortunately, now that this has become an organized resident rotation, faculty expenses qualify under their individual continuing education accounts. Faculty volunteer willingly, accompanying the residents and seeking the experience for themselves. In 2012, six senior anesthesia residents were approved to participate in mission trips; however, due to unforeseen circumstances, one trip was canceled by the sponsoring entity. Thus, four residents and three faculty members are preparing for mission trips during February-March and May.

The Cornelius International Mission Resident Fund is a privately supported program that sets UI Anesthesia apart from other programs. If you would like to support the Cornelius International Mission Resident Fund, please include the following on the "notes" field of your check: Anesthesia Account #30-502-015.

To learn more about The University of Iowa Foundation, and how gifts from alumni and friends support trainees and faculty in the UI Department of Anesthesia, please visit www.uifoundation.org or contact me at heather-ropp@uiowa.edu, (319) 335-3305 or toll-free 800-648-6973.

Heather Ropp
Assistant Director of Development
The University of Iowa Foundation

Alumni Profile

Merlin G. Osborn

"It is very rewarding, occasionally frightening, and always interesting."

I was born in Waukon, Iowa but grew up in Dubuque, graduating from Dubuque Senior High in 1955. I then attended and graduated from the University of Dubuque in 1959. I guess my main memories of grade school and junior high school were the four fractured bones I had, two requiring surgery. I think that exposure and the fact that I had a cousin who was a physician on the University of Iowa staff gave me my initial interest in medicine.

I began medical school at Iowa in 1959 and graduated in 1963. My wife, **Ruth Speckhardt Osborn**, graduated from Iowa in 1960 with her bachelors of science in nursing degree. We were married in 1963, toward the end of my senior year at Iowa. We moved to San Bernardino, California where I began a rotating internship at San Bernardino County Charity Hospital, living there from 1963 to 1964. As I got into my internship, I had not decided what kind of medicine I really wanted to practice and since the Viet Nam war was going on, I enlisted in the Air Force as a general medical officer and was stationed for my two year obligation at Mt. Home Air Force Base, Idaho. During my first year in the Air Force, I decided that anesthesiology would be my choice and I started at the University of Iowa Hospital and Clinics in August of 1966, finishing in August 1968.

When I arrived in the department in 1966, we had six faculty members and I believe twelve residents, six first years and six second years. Dr. **William Hamilton** was the Department Chairman until the summer of 1967 and then he left for California. Interestingly, we then had only three senior staff for much of the summer/fall of 1967 – Drs. **Jack Moyers**, **Azmy Boutros**, and **Leo DeBacker** - as a number of the faculty left at the same time as did Dr. Hamilton and Dr. Martin Sokoll was on a sabbatical for a year. For several months, we second year residents were really doing a lot of monitoring of first year residents, general surgery residents, oral surgery residents, medical students, and also nurse anesthetists when we were working at the Veterans Administration hospital, so "a bit of baptism under fire!" I believe that Dr. **Mohamed Ghoneim** arrived in the late summer and then Dr. **Samir Gergis** a bit later, so that relieved some of the load on the senior staff and the second year residents.

Our anesthesia space for the residents was very limited. We had one room next to surgery recovery where we each had a desk. There was one conference table, and the room also served as our library. The anesthesia staff each had a new room off of the hall to the hospital. I believe there were fourteen main operating rooms, plus there was one room down in urology, four rooms in what was referred to as head specialties, or HS, which included otolaryngology and ophthalmology, and three or four rooms in orthopedics across the street, plus the Veterans Administration Hospital.

We had a variety of anesthesia machines and, as I recall, very few operating room monitors that first year of my residency. We got transmitter monitors during my second year. Halothane had been introduced a year or so before I started, but for the first six months we were required to primarily use ether so that we could become acquainted with the various stages. If you wanted to know the oxygenation of your patient, that required an arterial stick and then you got the results in maybe 5-10 minutes, so minute to minute or second to second monitoring of oxygenation was not available. Everyone carried a tray, like a silverware tray in your kitchen drawer, with what you thought you might need - tubes, scopes, drugs - because if you needed anything more you would have to wait for someone to go to the anesthesia storage room to get it for you. My wife could testify that we used a lot of ether (way before anyone thought of scavenging anything) and she said

I often came home smelling of ether, sort of like first year medical students smelling of formaldehyde after anatomy lab.

I often came home smelling of ether, sort of like first year medical students smelling of formaldehyde after anatomy lab.

Upon my residency graduation, I was invited to practice with the group in Cedar Rapids, Iowa (Linn County Anesthesiologists) where I remained until I retired in 1995. While in practice, I served on various hospital committees and the anesthesia department of the two hospital staffs in Cedar Rapids. I also had the honor of

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Merlin and Ruth traveling in Alaska.

ALUMNI PROFILE
continued

serving as president of the Iowa Society of Anesthesiologists in the 1980s.

When I retired, we became snowbirds and lived in Florida for seven months a year, became Florida residents, and then split the remainder of the year (summer months) between Cedar Rapids and our cottage on Harsens Island, MI. We decided in 2001 that three places was too complicated as I seemed to be always packing or unpacking our van, so we sold our cottage of 23 years and just lived in Florida and Cedar Rapids.

Recently we have moved from Ft. Myers to a retirement community in Bradenton, Florida and we hope to sell our Cedar Rapids condominium in the summer of 2012.

While working, I enjoyed the many friends I made, the other physicians with whom I practiced, the nurses, and many others working in the hospitals. I will say that for the 16 1/2 years I have been retired, I have not been bored one minute. Now understand I play no golf, no tennis, and rarely go swimming. My wife and I enjoy traveling so we have traveled extensively, now having visited over 60 countries. I enjoy reading, usually mysteries, puttering in the yard, biking (although we are very casual bikers), and of course, there is the computer that seems to take a lot of my time. We both stay active walking usually five days a week at least 1-1/2 to 2 miles daily.

Ruth and I have been married over 48 years and have two children. Our son, Dan, lives in Chicago and our daughter, Suzanne, lives on the northeast side of Tampa, Florida with her husband, Mike, and our only grandchild, Tommy, age 11.

I share these words of wisdom with the current anesthesiology trainees and those having graduated from Iowa's program. Be sure not to forget those institutions that gave you the education you got and those hospitals where you practice. Do not forget to enjoy some of the fruits of your labor, and be sure to include your family.

Merlin G. ("Oz") Osborn, M.D.
MD '63, R '68

An Overview of Our Department's **Continuing Education Opportunities**

We recognize you've heard from us before about how we value and take pride in our institution's three primary missions: patient care, teaching, and research. You may feel we even tend to "brag" a bit about how we feel our department contributes in such a positive manner to each. We cannot help ourselves – we are very proud of the good work we do here, and we like to share the news with you! Recently, we became aware that one area we may have overlooked "bragging" about is the myriad of courses we offer contributing to the teaching component of our mission, each offering continuing medical education credits to the attendees, and many also providing nursing continuing education credits.

Each of these courses requires a great deal of organization and planning by a team of experts. Not only must the actual course and its needs be met, the needs for keeping all areas managed by the anesthesia department must be considered - the operating rooms, other anesthetizing locations, patient units, patient clinics, the patient simulator center, etc., must be fully and appropriately staffed during the time periods involving each course. As our courses involve participation and attendance by our own departmental faculty and trainees, it is evident how important the organization and planning of each is. Thus, it is accurate to state that the complete success of any given course we sponsor is dependent on how well the entire department functions during each event. Indeed, we have a core group of individuals to thank for our success in the development stages – certainly and primarily the physician directors of each course (listed below). In addition, also critically involved are our department continuing medical education conference coordinator, Ms. **Lorri Barnes**, the Carver College of Medicine continuing medical education office program specialist, Ms. Lori Raw, Dr. **Javier Campos**, executive medical director of operating rooms, and the entire team of individuals planning the schedules for the main operating rooms and multiple anesthetizing locations throughout the hospital.

At this time, our department sponsors six courses regularly, each with a track record of repeated success. In addition, our team is in the midst of planning a new pain symposium. We have every reason to predict it will be well received and placed on our list of regular, repeated symposiums. Here is a brief overview of each of these opportunities, presented alphabetically by title. If one or more peaks your interest for attendance or additional information, please feel free to contact the course director and communicate with him or her directly.

ANESTHESIA ADVANCED AIRWAY SYMPOSIUM

Robert From, D.O., director, bob-from@uiowa.edu, 7.5 CME credits

With special emphasis on providing expert teaching and tips on airway-related topics from nearly every subspecialty in anesthesia, to bringing the "tools of the trade" into a workshop session where participants can practice their skills and be introduced to the latest equipment on the market, the Anesthesia Advanced Airway Symposium is a multifaceted and valuable experience. It is held at the University of Iowa Hospital on a Saturday in the fall every other year. The afternoon session is comprised of 10-12 workstations, offering a wide array of airway devices and equipment, in which participants can rotate through each station as they wish to get the extended hands-on practice time they desire. Representatives from sponsoring companies are available to attendees during breaks to present their most up-to-date equipment and devices. Many of these tools are available during the workshop for attendees to have hands-on experience in a more intimate setting, with an expert teacher from the symposium faculty to guide them, with plenty of time to practice and without the rush of large crowds in a national meeting setting. Participants can hone their skills and techniques on everything from using various blades, fiberoptic scopes and endotracheal tubes, to practicing fiberoptic bronchoscopy examinations and cricothyrotomies on pig tracheas. Advanced cardiac life support recertification and patient simulation sessions are also offered for those who are interested in taking advantage of those opportunities.

Attendee quote:
"You hit a 'home run' – everyone was well prepared and extremely helpful. Thank you all."

ANESTHESIA PAIN SYMPOSIUM

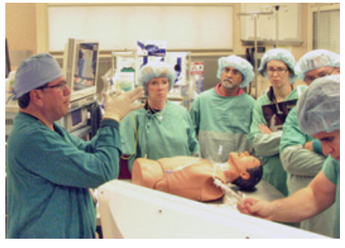
Foad Elahi, M.D., director, foad-elahi@uiowa.edu, 5.5 CME credits

The first Anesthesia Pain Symposium will target interdisciplinary chronic low back pain and is scheduled for April 14, 2012. The one-day symposium is targeted for physicians and other healthcare providers who encounter patients with chronic lower back pain, including physician specialists and colleagues in other medical disciplines. This program will include a brief review of the fundamental pathophysiologic events, distinguishing the mechanisms of chronic low back pain. Multimodal pharmacologic, psychological, and physical medicine approaches are based on an understanding of the underlying pain mechanisms. The program combines a brief overview on interventional pain and surgical options. After completing this course, participants should be better able to: (1) differentiate between various pathologies that cause chronic low back pain; (2) differentiate between acute and chronic pain syndromes with an understanding of pathophysiologic mechanisms of acute and chronic pain; (3) select the most appropriate strategy to manage an individual's chronic low back pain, which may incorporate multimodal approaches; and finally, (4) implement strategies that minimize risk of abuse and limit adverse effects of analgesics, including opioids. Current medical knowledge and future prospective on the causes and treatment of chronic low back pain will be presented and discussed. This symposium provides unique opportunities to interact with colleagues in wide ranges of expertise and interests in chronic low back pain diagnosis, treatment, and rehabilitation.

Symposium director's quote:
"Knowledge alone cannot give rise to value. It is only when knowledge is guided by wisdom that value is created. The font of wisdom is found in the following elements: an overarching sense of purpose, a powerful sense of responsibility and, finally, the compassionate desire to contribute to the welfare of humankind."

IOWA ANESTHESIA SYMPOSIUM

Javier Campos, M.D., director, javier-campos@uiowa.edu, 11 CME credits



Dr. Javier Campos initiated the Iowa Anesthesia Symposium twelve years ago with a strong vision and goal to see the department of anesthesia offer quality educational activities, and do what we do best, which is to teach others by sharing the expertise of our many gifted faculty members. Prior to this, no continuing educational activities were being offered in the department. His vision included introducing young faculty members into this professional arena to help further their development in academia. The purpose and intent of this annual two-day meeting is to provide high quality teaching and workshops to anesthesia providers from all over the Midwest to help increase their knowledge and enhance their clinical practice, as well as allow us to learn from those who attend. While the range of subjects covered varies each year, we consistently offer teaching and workshops related to fiberoptic examinations and intubations and regional anesthesia techniques. The Iowa Anesthesia Symposium delivers an outstanding educational experience encompassing limitless subjects and issues from every anesthesia subspecialty.

Attendee quote: "This was one of the best meetings I have attended – concise, clinically oriented – main points and then additional information – I was anxious to hear what was next – felt like it either validated what I have been doing or gave me ways to make adjustments in my practice and new considerations to implement."

IOWA INTERNATIONAL ANESTHESIA SYMPOSIUM

Javier Campos, M.D., director, javier-campos@uiowa.edu, 19 CME credits

The Iowa International Anesthesia Symposium is a continuation of Dr. Campos' vision to share the expert teaching of our faculty members on an international scale, and was held for the sixth consecutive year in San Jose del Cabo, Mexico, on March 3-6, 2012. Each year this symposium is comprised of a wide range of topics with the purpose of providing a quality educational activity to anesthesia practitioners in subspecialties and locations from all over the world. Our goal is to deliver practical, current, and relevant information that will serve to improve the practice, skill, and safety of our colleagues, while affording them the opportunity to enjoy time away from their practice in a gorgeous, tropical setting. While the specific topics and structure of the lectures, workshops, or problem-based learning discussions change from year to year, we consistently include subjects relating to cardiothoracic, neurologic, pediatric, and regional anesthesia. This four-day symposium offers a wonderful learning experience for anesthesiologists, certified registered nurse anesthetists and anesthesia assistants. The Iowa International Anesthesia Symposium provides an exceptional blend of learning, extensive interaction, and socializing with world-renowned experts, in a beautiful and relaxing setting that is conducive to a family vacation.

Attendee quote:

"More than met my highest expectations. Highest quality lectures/PBLDs, combined with a spectacular and comfortable setting. Will return every year."

OPERATIONS RESEARCH IN SURGICAL SERVICES

Franklin Dexter, M.D., Ph.D., director, franklin-dexter@uiowa.edu, 35 CME credits

The department's division of management consulting offers this three and one-half day course twice annually in Iowa City and often, the course is arranged at hospitals and health systems that have a sufficient number of students. Typically, the organizations ask for statistical analyses through consults and subsequently choose to educate managers, anesthesiologists, and analysts about the principles to which the consults are based.

Currently, "analytics" (i.e., how to use data that are being accumulated) is one of the most popular business topics, and that is our expertise. The course teaches participants how to apply such principles to solve problems in the operating room and perioperative environment: (1) monitoring operational and financial performance of surgical suites and anesthesia groups ("descriptive analytics"); (2) forecasting case durations, time remaining in cases, use of staffed operating room time ("predictive analytics"); (3) making common decisions, such as staffing levels, block time planning, case scheduling and assignment, and financial management ("prescriptive analytics"); (4) making strategic decisions, such as choice of the subspecialties of new surgeons to be recruited; (5) identifying in-house expertise to aid in problem-solving and determining whether outside consultants are needed; and lastly, (6) evaluating current decision-support systems.

During the past several years, there has been an increased emphasis on teaching residents systems-based practice. The course provides the cognitive knowledge and problem-solving skills required by the American College of Graduate Medical Education for anesthesia systems-based practice. Each of this year's CA-3 residents is taking the class. About half of the course consists of lectures. The remainder of the time is spent in groups solving statistical word problems. Course participants enter answers into a specially developed Excel workbook that provides interactive feedback in response to incorrect answers. In Iowa, Dr. Dexter gives the class with Dr. Ruth Wachtel; otherwise, Dr. Wachtel assists by using a class chat room. This use of the chat room and Excel also familiarizes clinicians with technology and helps them develop the judgment and computer skills necessary for better decision-making on the day of surgery.

Attendee quote: "Good course. This was an honor to be able to attend!"

REGIONAL ANESTHESIA STUDY CENTER OF IOWA ULTRASOUND-GUIDED WORKSHOPS

Robert Raw, M.B., Ch.B., director, rob-raw@uiowa.edu, 12.5 CME credits

The Regional Anesthesia Study Center of Iowa (RASCI) courses offer a truly one-of-a-kind learning experience. With the ever-growing demand for ultrasound and regional anesthesia, RASCI provides participants a unique blend of expert didactic teaching, live nerve block demonstrations on human models, and hours of hands-on ultrasound practice on phantoms and human models; along with ultrasound and nerve block practice on anesthetized pigs. Workshops are held several times a year in Iowa City, with attendance limited in order to maintain faculty/trainee ratios in the hands-on sessions of no greater than 1:4, which provides true one-on-one teaching and guidance. This provides an avenue for attendees to spend extended time sharpening their skills, or acquiring knowledge and skills now required, but never before learned. This two-day course has drawn participants from over 30 states, from as far away as Alaska, and countries as far away as Italy. A pediatric RASCI is offered every other year with pediatric regional anesthesia experts brought in to help instruct those whose practice is focused on children. An annual RASCI workshop is also held for our own internal trainees to enhance their learning experience at Iowa.

Attendee quote:

"Overall best workshop I have attended in 22 years. It covered the bread and butter of common blocks."

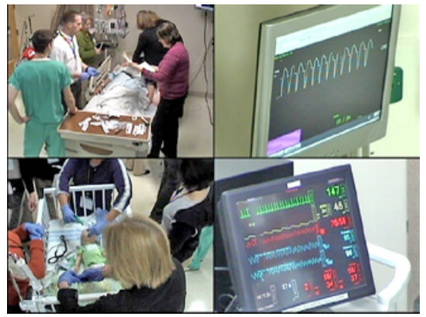
SIMULATION INSTRUCTOR DEVELOPMENT PROGRAM

Paul Leonard, M.D., Ph.D. & Ann Willemson-Dunlap, Ph.D., CRNA, Co-directors, paul-leonard@uiowa.edu, ann-willemsen-dunlap@uiowa.edu, 20 CME credits

The department's Simulation Instructor Development Program is offered two times annually. Each two and one-half day course involves both lectures and numerous exercises with the goal of enabling the participants to: (1) design, conduct, and debrief an interprofessional simulation; (2) deliver effective educational feedback in a non-threatening manner; (3) model the behaviors of a culture of inquiry and explain why they promote both learning and patient safety; (4) explain how effective use of simulation promotes culture of inquiry and vice-versa; (5) model and analyze healthcare teamwork skills in critical situations; and finally, (6) explain theories of the particular applicability of simulation to learning and measuring decision-making and interpersonal skills.
There are several special features of this course, as well. The unusually broad expertise of the faculty, including simulation, education, industrial engineering and patient safety, clinical care, and commercial aviation, is intensively integrated into a logical experience rather than a buffet of ideas. Tuition covers meals and notebooks; participants sign a unique payback agreement to conduct interprofessional simulation at the University of Iowa. In addition, the course reliably attracts a range of healthcare professionals and a few non-clinician educators or administrators.

Attendee quote:

"I was not aware how much of simulation performance was or is the culture it is contained in. After the course, I cannot dissociate them at all. Rarely has my misjudging my own expectations worked so well."



ALUMNI Update

Respiratory therapists Evelyn Maki, Rick McConnell, and Sherry Spark, with Jeanette Harrington, M.D., during a visit in the Peter J.R. Jebson Hyperbaric Medicine and Wound Care Clinic with alumnus, Marvin Shapiro, M.D.

Good friends, Drs. Marty Sokoll and alumnus Denny Bastron

Dr. John Laur performing a convincing demonstration on visiting alumnus, Dr. Roger Pede

Belated happy 2012 greetings to all of our alumni and friends! I must tell you that here in Iowa we are experiencing one of the mildest winters ever, and I love it. It seems the older I get, the more I appreciate fewer snow storms occurring, and that seems fewer and fewer times each winter. No doubt, there is cause to worry about our environment and ecosystem as the bushes, trees, and flowers show evidence of believing it to currently be April or May, rather than early winter.

Visitors to our campus, as well as my visits off campus, continue to be the highlight of my responsibilities. I must confess that I often get so wrapped up in my excitement that I neglect one of my goals, that of recording visits with photographs. Thus, the photos accompanying this article definitely do not represent all visits. My apologies! Since I last reported, I believe we've welcomed a minimum of thirteen special visitors to the department, and I was here to greet all but two of them. Dr. **Bill Hamilton** (BA '43, MD '46, R '51, chair '58-'67) treats us by stopping in each time he is in town visiting his sister and nieces. Good friend and patient simulator center consultant, Dr. **Bill Rutherford**, has been spotted sneaking up the back elevator to check in with his colleagues in the simulator center. I looked up from my desk one day to be greeted by the smile of former CRNA, **Jack Grucza**, in Iowa City for a quick trip. We enjoyed a quick conversation, and as he left I was reminded that I'm only one of so many individuals that our alumni and friends make time to visit when they are in town. Dr. **Roger Pede** (R '96, F '97) traveled from Lynchburg, VA, to spend a day in the department, bringing along his wife and two children – Kay, Kathryn, and Christopher. We really had some fun! We are looking forward to seeing Dr. Pede again soon, as he has registered for an upcoming RASCI seminar. Dr. Todd and I were both out of town when a former anesthesia extern and her dentistry college graduate husband visited our department. Dr. **Amber Jandik** (MD '98) and Dr. Kenneth Jandik (DDS '98) traded the humidity of Fort Myers, FL for that of Iowa City, IA during the first days of September 2011. My absence was not noticed, as others stepped right in to make certain that the Jandiks were provided the opportunity to tour the department and meet with Dr. **Jim Choi**, clinical associate professor (MD '91, R '95, F '97, Faculty '97-), director of medical student clerkships. Next, we rolled out the red carpet again to welcome Dr. **Marvin Shapiro** (R '84) from Germantown, TN. Dr. Shapiro spent a Friday afternoon in the department prior to attending a weekend RASCI course here. I believe one comment he repeated several times went something like this, "Boy, has this hospital grown and has this department developed since I left in 1984!" In October, we welcomed Dr. **Denny Bastron** (BA '60, MD '64, R '67, Faculty '69-'80). We feel indeed honored that, like Dr. Hamilton, Dr. Bastron chooses to visit us whenever he returns to Iowa to visit his family. This most recent trip was indeed special, in that he gifted us by delivering a lecture entitled, "Osler and Ether Day." This special event was well attended by our department's current clinical providers, as well as attracting a few of our nearby Cedar Rapids alumni, Drs. **Plenny Bates** (BA '55, MD '58, R '61), **John Schuchmann** (MD '59, R '62), and our very own **Dale Morgan**, adjunct clinical professor (MD '51, R '56).

Christopher, Kay, Kathryn, and Dr. Roger Pede with Dr. Tyrone Whitter

Far Left: Dale Morgan, M.D., Frank Scamman, M.D., Plenny Bates, M.D., John Schuchmann, M.D.

Left: Drs. Jeanette Harrington, Donald Penning, Robin Goldsmith, and John Becker: fun breakfast guests for Barb during ASA

Christine McNair, M.S.N., CRNA, assistant to the medical director, anesthesia preoperative evaluation clinic, reviewing a particular form utilized in the clinic with Denny Bastron, M.D.

Our department alumni reception held during the 2011 ASA annual meeting in Chicago was such fun! I do believe the hotel wait staff was surprised that such a significant group of us were still standing around reminiscing long after the announced "last call" for food and beverage. I was delighted to enjoy an initial introduction with so many individuals with Iowa ties. I also was able to convince several alumni to either allow me to tag along as they met up with Dr. Mike and Mrs. Linda Todd for conversations, join me for a cup of coffee, or I even managed to spend some breakfast time with a small group of alums. What an absolute joy to catch up with individuals on their families and careers and other adventures!

Mary Kinyon with a new knitting project

A personal trip to San Diego, CA was the highlight of my November. I was not successful in meeting with as many alumni as I had hoped, but I had a great visit with good friend, **Mary Kinyon**, wife of the late Dr. **Gilbert Kinyon** (BA '46, MD '50, R '53). Mary treated me to the most delicious breakfast ever, enjoyed in the open air overlooking the ocean. Following a wonderful tour of the community surrounding where Mary lives, we found ourselves "needing" to stop at several yarn shops and then spending several hours in wonderful conversation at her home while we worked on our respective knitting projects. No question about it – we missed Gil not being with us, and it seems hard to believe his death was two years ago this February. Also while in San Diego, I met with Dr. **Dennis Madrid** (R '85) and Mrs. Carla Madrid. We lingered over a great breakfast buffet for hours in conversation ranging from our families to careers to medical mission trips. The next issue of our newsletter will bring you more detail about their interesting life together, yet another tale of how proud our department is of those whose lives we have had the privilege to influence.

By the time this issue of our newsletter reaches you, I hope to have met with many alumni and friends of the department living in Florida. A trip is planned for February with Dr. **Marty Sokoll**, professor emeritus, and our UI Foundation representative, **Heather Ropp**. While I wish above all else that we could arrange to visit twenty-five alumni and friends in five days, our realistic goal and plan is to meet with fifteen. We hope to collect a wonderful array of recollections and photos from individuals regarding their experiences while here in the department. As you know, we're putting together a bound volume of history to be available at our 2013 fiftieth reunion celebration. I'm looking forward to a very busy year of travel and connection with as many alumni and friends of the department as possible. Remember please – my mailbox, my email, my work and cell phones are always open and welcome to news from each of you.

Barb Bewyer
Alumni and Outreach Coordinator

Ray J. Defalque, M.D.

Dr. Ray Defalque died on March 11, 2011, when he succumbed to an aggressive recurrence of head and neck cancer. Almost two years ago now, after extensive surgery, a remarkable recovery and return to a productive and comfortable life his perseverance served as a wonderful example for all who knew him. Personally and professionally, he preferred the humble nomenclature of "Ray."

Ray was born on March 8, 1932, in Belgium. His childhood was interrupted by World War II, when the family moved to the Belgian Congo. After the family returned to Belgium, Ray received his undergraduate degree in 1952 and his medical degree at the University of Louvain in 1957. He then came to the United States and completed an internship at hospitals in New York City, an OB-GYN fellowship at the University of Wisconsin, and then entered an anesthesia residency at the University of Iowa, completing it in 1961 under Dr. William Hamilton. He departed for Belgium upon graduation, but returned to the United States shortly thereafter. He held academic positions at the Indianapolis, Indiana Veterans Affairs hospital, Indiana University, and the University of Alabama at Birmingham. During his long career, he specialized in regional anesthesia for orthopedics and pain management and published a number of articles in that area. He retired in 1999, yet he spent four to six weeks a year for several years teaching regional anesthesia in Ho Chi Minh City in Vietnam under the auspices of Health Volunteers Overseas. He also took his teaching and mentoring skills to both Lima and Arequipa, Peru. Dr. Defalque developed a deep interest in the history of anesthesiology, publishing a long series of articles in that area. He is survived by his wife Druscilla, sons James (and wife Kristi) and Jeff, and two grandchildren, Grant and Gillian. A brother, Arnold, also survives him.

Edward S. Wegrzynowicz, M.D.

Edward S. Wegrzynowicz died on October 3, 2011. He was the son of Albert and Sophie, and was born October 10, 1954 in Minneapolis, MN. He grew up in North Minneapolis and attended Breck High School. He then went to school for one year at West Point Military Academy. He received his bachelor's degree from the University of St. Thomas, St. Paul, MN and his doctorate of medicine from the University of Minnesota Medical School. He did his internship and residency at Mayo Graduate School of Medicine in Rochester, MN, specializing in anesthesiology, critical care medicine and pain management.

He has held appointments and privileges at the University of Iowa Hospitals and Clinics, including teaching assignments, as well as at the Veterans Administration Medical Center, Iowa City, including a three-year research assistantship. He was a diplomat of the American Board of Anesthesiology since 1985, and held certificates of special qualification in critical care medicine and in pain management. He participated in three volunteer surgical trips to Brazil sponsored through Esperanca, giving anesthesia for repair of congenital defects, as well as one trip to Poland.

of Special mention

At the time of his death, Dr. Ed as he was commonly known to his friends and coworkers, was employed at Avera St. Luke's Hospital in Aberdeen, South Dakota, and had been since August of 1977. Ed was full of life and enjoyed sharing a laugh with others. He had a very large heart, was a very generous and giving person. He liked to prepare for hunting as he had a great knowledge of weaponry. Cooking was a great interest of his and he couldn't be happier than to share his feast. He was a continuous student, learning as much as he could about various subjects. Electronics were also of great interest to him. Ed is survived by his nephew, Valerii (Olena) Venhrynovych of Ukraine, niece, Halyna (Mykola) Vasylenko of Ukraine, three great nephews, Yuriy (Svitlana) Vasylenko of Minnetonka, MN, Bogdan Venhrynovych and Edward Venhrynovych, both of Ukraine, two great nieces, Oksana Vasylenko and Elizabeth Venhrynovych, both of Ukraine, sister-in-law, Oksana Venhrynovych of Ukraine and a special friend, Ruth Wachtel of Iowa City, IA. His parents and one brother, Stanislav Venhrynovych, preceded him in death.

Harold Jaffe, M.D.

Our department shares the sadness felt by widow, Dr. Jeanne Jaggard (MD '60), in the loss of her husband, Dr. Harold (Hal) Jaffe, on October 26, 2011. Hal was born on September 27, 1923 in Passaic, New Jersey, the son of Joseph and Yetta Jaffe. He graduated from Passaic high school, ranked then as the second best high school in the United States. His desire was to join the Army Air Corp at age 17, but his mother felt he was too young and would not sign the paperwork. Thus, Hal enrolled in Stevens Institute of Technology/Bell Laboratories in Hoboken, New Jersey for one year. At age 18, he did join the Corp, trained at Langley Field in Virginia and flew P-51 Mustang planes in Europe. Upon his separation from military service, Dr. Jaffe received his bachelor's degree at Bowling Green State University in Bowling Green, Ohio, followed by his master's degree from New Mexico. His desire was to return to New Jersey to begin medical school; however, at that time New Jersey did not have any medical schools at all. While in graduate school, he became friends with a librarian who was from Iowa, and she recommended he apply there. His question to her then was, "Where is Iowa?" He visited the state with her, learned he would need to first be employed in the state and establish residency, and then apply for medical school. He thus accepted a position as an orderly in the department of urology at the state hospital in Iowa City. He worked under Dr. Rubin Flocks, and thus began his intense interest in the specialty. He later entered Iowa's medical school, graduating in 1956, followed by completing a urology residency in 1961.

Between his junior and senior years of medical school, Hal completed a preceptorship in Oelwein, Iowa, under the direction of family practitioner, Dr. Bob Jaggard, brother to Jeanne Jaggard. At that time, Jeanne was working in Nashville, TN, having completed nursing training there, but had already planned to return to Iowa City and continue her education by attending medical school. Once they met, they became soul mates. Hal and Jeanne were married on August 12, 1956, in Grand Rapids, MI, where Hal was serving an internship at the time. While Jeanne would have loved to stay in Iowa for her anesthesia residency training, Hal was eager to return to New Jersey to begin his career in urology. Together, they spent their professional lives in private practice, with Hal retiring in 1993 after rotating as chief of urologic services at Beth Israel, St. Mary's and Passaic General hospitals in Passaic, New Jersey.

Hal and Jeanne traveled the world upon their retirement, visiting Britain, France, Italy, Spain, Greece, Turkey, Nepal, India, Tibet, Mongolia, China, Thailand, Bhutan, Jordan, Israel, Egypt, Morocco, and all of Africa. Hal's lifetime of generosity, always including his wife as well, established scholarships for medical students at the University of Iowa Carver College of Medicine, funding the purchase of patient simulators and accompanying equipment for the department of anesthesia, and a charitable bequest to the department of urology for a translational urologic oncology research chair. Community service involvement included donating funds for building two preschools in Israel. Hal was well known for his retelling of stories about his experiences with patients and surgeons he worked with, always capturing a captive audience. Hal will always be remembered as one of Iowa Hawkeyes' greatest fans. A favorite piece of advice he liked to share with medical students at Iowa was, "When you have accomplished your goals, remember to help students that come after you. Pay back time to the UI College of Medicine."

Hal is survived by his wife of 55 years, Jeanne Jaggard; his older sister, Minna, of Interlaken, NJ; four nephews and their families.

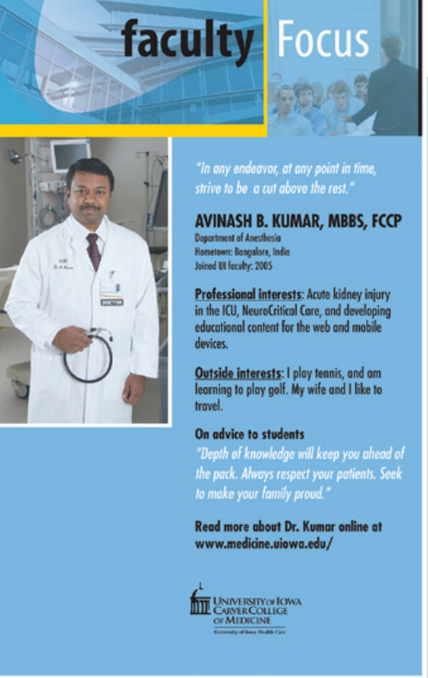
Lucien E. Morris, M.D.

Lucien Morris died peacefully in his sleep at home on November 15, 2011, two weeks before his 97th birthday. Lucien was born November 30, 1914, at Mattoon, Illinois, and grew up in Cleveland, Ohio, where his father was head of the Biochemistry Department in the School of Medicine, Western Reserve University. Lucien went to Oberlin College, in Oberlin, Ohio, graduating with a chemistry major in 1936, and then began doctoral studies in biochemistry at the Graduate School of Western Reserve University. Later, to better understand what he needed to know to teach medical students, he enrolled in the Medical School at Western Reserve University, where he received a medical degree in 1943.

While teaching a biochemistry laboratory class for graduate students, Lucien met the love of his life, Ethel Jean Pinder, who he married on June 27, 1942. Jean and Lucien were inseparable as they travelled the world together for more than 69 years. During World War II, Lucien spent more than two and one-half years of anesthesia assignments in the U.S. Army Medical Corps, including one year in England as head of the Anesthesia and Operating Room section of a U.S. Army Receiving Hospital.

On return to civilian life, the first step was a residency with Professor Ralph Waters, M.D. at the University of Wisconsin. Then there were five years spent on the faculty at the University of Iowa, before moving to Seattle in 1954 to accept an appointment as the original Professor of Anesthesiology at the University of Washington. Lucien resigned his position at the University of Washington in 1960, moved into private practice and set up an active anesthesia research laboratory in conjunction with the development of the prestigious Heart Center at Providence Hospital, Seattle. In 1968, Lucien moved back to academia as Professor of Anaesthesia at the University of Toronto, Canada, where he established a new Anaesthesia Research Laboratory for Canada. In 1970, he was appointed Founding Chairman of the Department of Anesthesia at the Medical College of Ohio, Toledo, Ohio, where he remained until 1985.

In retirement, Lucien continued to lecture and teach at various places both in the United States and abroad. He remained active in the American Society of Anesthesiologists, was elected a Fellow, Faculty of Anaesthetists, Royal College of Surgeons (England) and was invested as Honorary Fellow, Faculty of Anaesthetists, Royal Australian College of Surgeons. He continued to write, publishing his last paper, a historical article on anesthesia, in July 2011. Lucien is most widely recognized for his design and introduction of a precision anesthesia vaporizer system commonly known as "The Copper Kettle", which for more than twenty-five years was the standard anesthesia apparatus in most teaching hospitals in the United States. Lucien also coached fencing as a university sport, guided canoe trips in Temagami, Ontario, and was an avid downhill skier from the time he learned at age 41 until his last run at age eighty-five. Lucien had a long and remarkable career and life; influencing multiple generations in the art and science of anesthesiology, fencing, canoeing and life. He will be missed by his extended family, friends, students, and colleagues worldwide. Lucien was preceded in death by his grandson Ian Colby Morris, his son James Lucien Morris, and his sister Marcia Morris Webb Long. He is survived by his wife Jean, son Robert (Debora), daughter Sara Jean Morris Hoffman (Bill), son Donald (Jana), daughter Laura Morris Bean (Doug), son Mark Chang (Debbie), sixteen grandchildren, and six great-grandchildren.



faculty Focus

Avinash B. Kumar, M.B.B.S., FCCP, *Clinical Associate Professor of Anesthesia*

The following interview first appeared on the Carver College of Medicine Web site, as a project of the Office of Faculty Affairs and Development, and can be located at https://intranet.anesth.uiowa.edu/media/files/Kumar%20Avinash.pdf and also http://www.medicine.uiowa.edu/facultyfocus.aspx?id=2666. It is with their permission that we reprint it in our newsletter. Credit is given to the following individuals for their contribution to the original project: Susan McClellen, photogtrapher; Connie Peterson, poster production; Ryan Potter, Web site creation; Diana Lundell, Bonner J. Schaffer, and Jane Holland, editors of Dr. Kumar's story; Dr. Avinash Kumar, preparer of answers to questions.

What is your hometown?
I am originally from Bangalore, India. Bangalore is a bustling metropolis of more than five million people in southern India.

When did you join the University of Iowa faculty?
I came to Iowa to do my fellowship in Critical Care in 2004. I had the good fortune of being offered a faculty position in 2005 upon completion of my fellowship. I have been here since then.

How/when did you become interested in science and medicine?
I underwent a major academic transition in the 6th grade. It still feels like a light switch was flipped on.

I learned to ask questions and to look for answers. Much to my parents' relief, my academic performance improved as well.

What interested you to pursue a career in Critical Care?
There is a certain sense of invincibility when one enters medical school. Three months into medical school I watched helplessly as one of my dearest family members succumbed to a treatable illness in an ICU.

I realized how little I knew about real medicine, and ever since I wanted to be in a place and field where I could really make a difference when patients needed me the most.

Is there a teacher or mentor who helped shape your career?
The person I always credit for keeping the flame of medicine alive in me was my mentor in medical school, the Late Professor MV Govindappa FRCP. He was a master clinician, phenomenal teacher, and ethical and honest person whom I still think about on a frequent basis. When I run into a difficult clinical situation, I often ask myself …what would Professor MV Govindappa do?

How or why did you choose the University of Iowa?
The University of Iowa has had a long-standing reputation for academic excellence.

The fellowship in critical care with the Department of Anesthesia offered an excellent blend of clinical expertise and flexibility to develop specialized skills beyond the ICU.

The University of Iowa's faculty members are united to provide exceptional patient care while advancing innovations in research and medical education. How does your work help translate new discoveries into patient centered care and education?
My work in anesthesia and critical care has led to the development of a potential new airway device that is currently under prototype development.

I have also had the good fortune of collaborating with other team members to develop an iPhone application for CCRN (nursing), Pediatric Anesthesia and Anesthesia Board Review.

What kinds of professional opportunities or advantages does being a faculty member at an academic medical center provide?
The Department of Anesthesia at Iowa has several nationally and internationally renowned Anesthesiologists and the opportunity to work with them was an absolute pleasure and a major incentive for me to be part of the department. Working with residents and fellows has been a true highlight of my term here at Iowa.

Please describe your professional interests.
Critical care is an amalgam of the best of several fields. I am currently working on issues related to acute kidney injury in the ICU. I am also interested in developing and expanding educational content delivery using mobile devices.

What led to your interest in Critical Care?
The ICU is sometimes the last place where one can truly make a difference to patient survival.

A good intensivist needs to be able to bridge and integrate the best skills of several specialties. This was the appeal of intensive care medicine for me.

How does working in a collaborative and comprehensive academic medical center benefit your work?
Working with world-class physicians and scientists has opened up the possibility to collaborate on projects that are simply not possible outside the realm of academics.

What are some of your outside interests?
I play tennis, and I am learning to play golf. My wife and I like to travel.

Do you have an insight or philosophy that guides you in your professional work?
In any endeavor, at any given point in time, strive to be a cut above the rest.

If you could change one thing about the world, or the world of medicine, what would it be?
Medicine is becoming far too compartmentalized and learning is becoming more superficial. I hope the value of depth of knowledge and clinical examination skills are not lost in the future.

What is the biggest change you've experienced in your field since you were a student?
The rate and ease of dissemination of information has grown exponentially. The growth of evidence-based practice is changing the way medicine is being practiced all over the world.

What one piece of advice would you give to today's students?
Depth of knowledge will keep you ahead of the pack. Always respect your patients and always try to make your family proud.

What do you see as "the future" of medicine?
Push for evidence-based practice and the ever-increasing role of technology in daily medical practice.

In what ways are you engaged with the greater Iowa public (i.e. population-based research, mentoring high school students, sharing your leadership/expertise with organizations or causes, speaking engagements off campus, etc.)?
The people of Iowa have been very good to my family and me. I can always do more to give back to the great state of Iowa.

ANESTHESIA EXTERNS
ASA 2011 Annual Meeting

For the first time since its formation in 2003, the American Society of Anesthesiologists' medical student component (ASA-MSC) had representation from the University of Iowa Carver College of Medicine. The authors of this report attended the conference and participated in the ASA-MSC activities in Chicago, IL, including attending the House of Delegates meeting. This opportunity was an invaluable experience that furthered our exposure to the specialty of anesthesiology, in addition to the clerkship rotations and the externship.


Suraj Yalamuri and Brant Rutwick at the ASA-MSC

Brant Rustwick was the delegate representing Iowa at the ASA-MSC. He secured the position with the written support and encouragement of Dr. **James Choi**, director of anesthesia medical student clerkships. **Suraj Yalamuri** currently serves as the chief extern and attended the ASA meeting with Brant. Both attended the House of Delegates meeting, with Brant acting as the voting member and participating in electing the new governing council for the upcoming year. In addition to the general sessions, both gentlemen were able to attend a lecture series specifically designed for medical students. This series included talks from the program directors at Johns Hopkins University and Duke University. Brant and Suraj also attended a program director "meet and greet" session with over 50 programs represented from across the country. Northwestern University provided additional sessions for students including an ethics discussion, an airway workshop, a simulation, and an interactive lecture highlighting the role of dynamic, energetic, and meaningful lectures in medical education. Brant and Suraj concluded their experience in Chicago by attending the department's alumni reception, where they were introduced to, welcomed by, and interacted with both previous and current department trainees, faculty, and friends in a fun and enjoyable atmosphere.

Attending the 2011 ASA meeting only confirmed the decisions of both Brant and Suraj to apply for anesthesia residency training, though each arrived at their decisions through different routes. Brant's undergraduate training is in biomedical engineering and his first clinical experience with anesthesia was during his clerkship rotation in his third year of medical school. Just two days into the rotation, he was hooked. He completed additional rotations in anesthesia and the surgical intensive care unit during his fourth year. He is one of the co-presidents for the anesthesia interest group (AIG) and a volunteer for the Regional Anesthesia Study Center of Iowa (RASCI) courses. Suraj's exposure to the field is through research within the department. His research mentors, Dr. **Timothy Brennan** and Dr. **Christina Spofford**, have been instrumental

Anesthesia Externs Annual Meeting (continued)

in guiding him through medical school. He has presented his research twice at the Midwest Anesthesia Residents Conference and most recently at the annual Society for Neuroscience meeting. Both are utilizing the multitude of educational opportunities available through the department of anesthesia during their medical education.

After attending the ASA meeting, Brant and Suraj walked away with a single thought, "We want to make the experience that much better for the students interested in anesthesia following us." They have plans to start involving the medical students in AIG starting their M1 year. In addition to providing information for medical students about the externship and the residency match, they are planning an airway workshop and an intravenous workshop this year. Restructuring the leadership within the AIG so it more closely resembles that of the delegate board at the MSC is a goal. This will allow the AIG to be more productive, while also allowing the students to gain experience they can use to garner those delegate board positions in the future and hopefully increase Iowa's presence in the ASA-MSC. These externs would also like to draw additional attention to the many research opportunities available for students through the department. During their ASA-MSC experience, many of the program directors emphasized the importance of research and other speakers highlighted the funding opportunities, one example being the Foundation for Anesthesia Education and Research, which are available for interested students. By starting early in their medical school careers, students can contribute in a significant manner while gaining invaluable experience.

It was both an educational and enjoyable experience attending the ASA meeting this year. Thanks to Dr. James Choi and the department of anesthesia for providing this opportunity. We will encourage future medical students to attend upcoming annual society meetings and share their insights to make the educational experience better.

Brant Rustwick and Suraj Yalamuri
Carver College of Medicine M4 Students
Anesthesia externs, 2011-12

ACHIEVEMENTS & Awards

Cardiothoracic Anesthesia Fellowship Accreditation

Alan Ross

Hard work and preparation paid off recently when our department was informed by the Accreditation Council for Graduate Medical Education (AGME) regarding approval of our application for a certified fellowship in cardiothoracic anesthesia. This is the first new ACGME-approved fellowship in our department for many years. **Alan Ross**, M.D., associate professor, serves as program director for this fellowship. Dr. Ross, Dr. **Javier Campos**, and the entire cardiac group have been working for well over a year toward this accreditation goal. This is a wonderful accomplishment. Our first accredited fellow will begin in the summer 2012.

Margaret V. Lunsford Awardees Announced

The 2011-2012 Margaret V. Lunsford Award recipients are **Brant Rustwick**, **Abe Sheffield**, **Genevieve Staudt**, and **Suraj Yalamuri**. Congratulations to each of these individuals. This honor, which includes a monetary gift, is awarded to three senior medical student externs annually, and the selection committee considers strongly those externs who have expressed an interest in pursuing anesthesiology as their medical career specialty. Dr. Lunsford was born in Oskaloosa, Iowa, in 1911, received her medical degree from the University of Iowa College of Medicine in 1941, and completed one year of residency training in anesthesiology training here at Iowa from 1942-43. She married and moved east with her husband, practicing anesthesiology until her retirement in 1977. A bequest form the estate of Dr. Lunsford was established according to her wish, which was to provide scholarships for medical students interested in entering the field of anesthesiology, based on academic achievement and financial need.

Brant Rustwick

Abe Sheffield

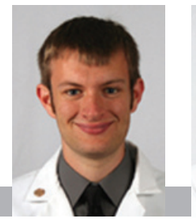
Geneieve Staudt

Suraj Yalamuri

Stuart Cullen Awardee Announced

The Stuart Cullen Award is voted upon by the anesthesia residents and awarded to a senior medical student extern who, by scholastic achievement and clinical performance, has demonstrated outstanding capabilities in the field of anesthesiology during the senior clerkship in the department. A monetary gift accompanies this award. **Brant Rustwick** is the 2012 recipient. Dr. Stuart C. Cullen, who attended medical school at the University of Wisconsin and completed a residency in anesthesia at Belleview Hospital in New York, was recruited to the University of Iowa in the fall of 1938 as the chief of the anesthesia division. At that time, anesthesia services were a division of the department of surgery. Under Dr. Cullen, the program flourished by the late 1940s. While principally known as a clinician and educator, he understood the importance of research. Dr. Cullen left Iowa in 1958 to become chair of the department of anesthesia at the University of California, San Francisco. His decision to depart was based to a great degree on his never being able to attain departmental status for anesthesia at Iowa.

Donna Hammond



Todd Domeyer

John Kennedy

Javier Campos

Brian King

Frank Jareczek

Medical Student Research Day

Annually, the Carver College of Medicine celebrates a medical student research day, allowing all students the opportunity to participate. Our department was well represented during the most recent research day. Mr. **Frank Jareczek** was awarded the Outstanding Presentation in Anesthesia award. Dr. **Donna Hammond** mentored Mr. Jareczek for his research project, "An Electrophysiological Approach to Dissecting Pain Mechanisms." **Todd Domeyer** and **John Kennedy** also presented projects in anesthesia, under the mentorship of Dr. **Timothy Brennan**. Mr. Domeyer's project was entitled, "The Analgesic Effects of Capsaicin Infiltration on Incisional Pain," and Mr. Kennedy's project was entitled, " H_2O_2 Induces Muscle Pain via $TRPA_1$ Receptors." Dr. **Javier Campos** also mentored a student, **Brian King**, who presented a project entitled, "Factors that Influence Turnover Time in an Academic Hospital Operating Room."

Medical Education Celebration Day

Bill Rutherford

All University of Iowa Health Care students, faculty, and staff are encouraged to participate in the annual Medical Education Celebration Day held in late fall each year. The most recent event featured as plenary speaker our department's good friend and consultant to our patient simulator center, **Bill Rutherford**, M.D. Dr. Rutherford serves as consultant in health care safety, is a retired airplane pilot, and former simulation trainer with United Airlines Denver Flight Center. His lecture was entitled, "Creating a Culture of Inquiry to Improve Safety: Lessons Learned from the Airline Industry."

Professional Accomplishments

Anil Brennan

Anil Marian, M.B.B.S., M.D., clinical assistant professor, has been appointed the director of the department of anesthesia's perioperative informatics. This is the first appointment of such a position in this department. Responsibilities include overseeing all matters related to Epic electronic anesthesia records, including continuous assessment of clinical, billing and compliance needs, standardization of data elements for national outcomes databases, and developing Epic into a research and management tool.

Anil Marian, M.B.B.S., M.D., clinical assistant professor, has been named to the University of Iowa Health Information Management Subcommittee. Duties entail reviewing, analyzing and evaluating medical records system to assure that the form and written content thereof satisfy prevailing accreditation standards, legal precedents, hospital policy and reimbursement protocols. Dr. Marian replaced Dr. David Papworth, who served in this role for some time prior to being relieved by Dr. Marian.

Anil Marian, M.B.B.S., M.D., clinical assistant professor, has accepted a two-year term as an adjunct member of the American Society of Anesthesiologists Committee on Electronic Media and Information Technology.

Timothy Brennan

Timothy J. Brennan, M.D., Ph.D., vice chair of research, Dr. Samir D. Gergis professor, was selected to deliver the Foundation of Anesthesia Education and Research (FAER) Lecture at the 10th Annual American Society of Regional Anesthesia (ASRA) meeting being held November 17-20, 2011, in New Orleans, Louisiana. Dr. Brennan's lecture was entitled, "Can We Close the Gap Between Pain Research and Pain Management?"

Record Number of OR Cases

As announced in an e-blast from the vice-president of medical affairs, Dr. Jean Robillard, "… the University of Iowa Hospitals and Clinics main operating room set a new record in fiscal year 2011. Over 18,090 cases were performed, which is more than 1,000 cases above the previous year." Needless to say, the anesthesia department clinical providers and staff were very much involved in this successful accomplishment.

Flu Vaccination Challenge

Joint Commission Resources recognized UI Hospitals and Clinics at the "Silver Level" for being at or above 85 percent compliance in the Flu Vaccination Challenge for the flu season. The Flu Vaccination Challenge encourages all health care workers to demonstrate their commitment to help protect themselves and their patients from getting the flu by getting a seasonal flu shot. All UI Health Care faculty, staff, students, and volunteers are encouraged to do their part by getting vaccinated against the flu this season.

Anesthesia Team Joins Cardiothoracic Team in Leading the Way

Taken from the December 15, 2011 UIHC *Transfusions are Risky Business* newsletter...

"UIHC's very own anesthesia and cardiothoracic teams lead the way with a bloodless aortic dissection repair surgery. Current directions in cardiac surgery are moving away from transfusing donor blood products and towards saving and preserving the patient's own blood. Research has shown that older stored blood can put heart surgery patients at increased risk and that morbidity and mortality are associated with its use. Current techniques include minimizing patient's blood loss, saving patient's own blood that might otherwise be lost during surgery, and normovolemic hemodilution. The surgeons and anesthesiologists exemplary blood management during the heart and vascular surgery is a result of the team's successful collaboration and effective communication both pre- and post-operatively. The Blood Management Team would like to recognize the following anesthesia and cardiothoracic surgery team members: Drs. **Niki L. Popp**, **Kira L. Fraser**, **Alexander W. M. Shune**, **John T. Stimmler**, **Sundar Krishnan**, **Domenico Calcaterra**, and **Robert A. Hanfland** on a job well done."

World Class Anesthetic

Recently, department head Dr. **Michael Todd** spoke to the anesthesia clinical staff members about a need to always adequately acknowledge when people throughout UIHC do a great job. Perfectly timed, the very next day, such a positive note arrived in our department! UIHC assistant professor of surgery, division of surgical oncology and endocrine surgery, James J. Mezhir, M.D., took the time and effort to create the following email and send it to the entire team present in a surgical case involving removal of a 50-pound tumor, utilizing 13 liters of blood products: "Dear OR Team, I want to thank everyone for their tremendous efforts yesterday during the operation on this very lovely woman. She was extubated last night and was on the phone with her family by 9pm – she was very happy to see her feet for the first time in many months! It is the outstanding skill and hard work and dedication of all of you that allow us to perform operations such as the one we did yesterday. I want to be sure that all of you feel that you contributed significantly to this incredible effort. 'Coworker A' and 'Coworker B' worked tirelessly for the entire case and I am so proud to work with you!!! 'Coworker C' – you fit right in! Drs. **David Papworth** and **Jocelyn Mattson**, and SRNA, **Melissa Wellcome**, you kept this woman alive from the head of the bed – her postoperative base deficit was 2 – an incredible testament to world-class anesthesia. 'Coworkers D and E' both showed significant endurance – the retraction of that tumor was not easy!! And everyone else who was working in the room who I may not have seen – thanks to you, too. We will be working hard to be sure our patient recovers from the operation. In addition to me - she and her family thank you for all of your efforts. -Best, James J. Mezhir, M.D."

Resident-Faculty International Medical Mission Trips 2012

While disappointed that one opportunity for participation in an international mission trip was canceled at a point too late to arrange a replacement, our department still will manage to send off four senior residents and three faculty members to two locations this year. In conjunction with the Rotary International of Iowa City Miles of Smiles Team (MOST), from February 23 through March 1, residents Rebecca Floyd and Jessica Kelley will be joined by faculty members, David Swanson and Ron Abrons, traveling to Quetzaltenango, Guatemala. From May 13 through May 27, faculty member, Martin Mueller, will be joined by residents Kira Fraser and John Wallace-Talifarro. They will travel to Lara, Venezuela and work in the Hospital del Seguro Social. These volunteers will report on their experiences in our next newsletter.

OF **Special** INTEREST

Upcoming Iowa Anesthesia Department CME Conferences

Mark your calendars!

Each conference offered through our department is 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 email or call the College of Medicine CME office contact, Lori Bailey Raw. She can be reached via email at **lori-bailey@uiowa.edu** or by telephone at **319-335-8599**.

Anesthesia Pain Symposium: Chronic Low Back Pain
Saturday, April 14, 2012

Regional Anesthesia Study Center of Iowa (RASCI)
March 31 – April 1, 2012
May 19 – 20, 2012 (pediatric)
October 6 – 7, 2012
December 1 – 2, 2012

Iowa Anesthesia Symposium XII
May 5 – 6, 2012

Operations Research for Surgical Services Course
August 23 – 26, 2012

***Other Upcoming Events*

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

Iowa Society of Anesthesiologists Spring Meeting
Saturday, April 14, 2012
Holiday Inn and Suites, West Des Moines, IA
http://www.iasocanes.org

Iowa Association of Nurse Anesthetists Spring Meeting
Friday – Sunday, April 27 – 29, 2012
Holiday Inn and Suites, West Des Moines, IA
http://www.iowacrnas.com

Department Spring Barbeque
June 2, 2012
12:00 – 6:00 p.m.
Home of Dr. Tyrone Whitter, Iowa City, IA

UI Carver College of Medicine Alumni Reunion
Friday – Saturday, June 8 – 9, 2012
Carver College of Medicine campus, Iowa City, IA
http://www.medicine.uiowa.edu/Alumni/alumni_weekend.html

Resident Graduation Luncheon
Sunday, June 24, 2012
12:00 – 3:30 p.m.
Kinnick Stadium Press Box Outdoor Club, Iowa City, IA

New Resident Welcome Party
Thursday, June 28, 2012
5:30 – 9:30 p.m.
Celebration Farm, Iowa City, IA
http://thecelebrationfarm.com

Iowa State Fair
August 9 – 19, 2012, Des Moines, IA
http://www.iowastatefair.com

University of Iowa Homecoming Weekend
Thursday – Sunday, September 27 – 30, 2012

Thursday – Sunday:
College of Medicine's Reunion Weekend 2012
http://www.healthcare.uiowa.edu/alumni/homecoming_weekend.html

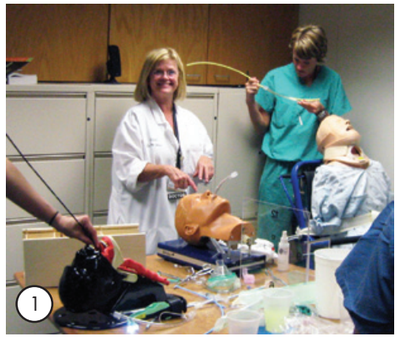
Friday:
Department of Anesthesia Welcomes ALL Alumni
Homecoming Parade, 5:45 p.m., Downtown

Saturday:
Iowa vs. Minnesota Football Game, Kickoff time TBA

Sunday:
Events TBA

Alumni Reception during Annual ASA Meeting
Saturday, October 13, 2012
Washington, D.C.
Location TBA

Photo Gallery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Training

1. Merete Ibsen, M.D., and Niki Popp, M.D. (CA-1) during training session

New O.R. Attire

2. New Hawkeye OR caps for the CA-1 residents

ASA Presentations

3. Anil Marian, M.B.B.S., M.D. representing department's ASA educational booth related to Epic electronic patient record keeping system
4. Tom Smith, B.S., department web application developer, representing department's ASA educational booth related to our sophisticated use of intranet tools


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ASA Reception

1. Robin Goldsmith and Stacie Wong
2. Barb and Ron Osborn, Laurilyn Helmers
3. Victoria and John Laur, Charles Galaviz
4. Residents: Becky Floyd, Amy Heller, Courtney Hancock, and Jennifer Talmage
5. Jeanette Harrington (middle) with Carol, Eric, and baby Aaron High
6. Residents thanking Barb for a fun party: Juan Ruiz, Becky Floyd, Brent Freeman, Barb Bewyer, Tyler Kerr
7. Joan McGrath, Kira and Murray Schukar
8. Tim Brennan with David and Nancy Murray
9. Kari Kortilla with Frank and Mary Scamman


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UNIVERSITY OF IOWA HOSPITALS & CLINICS
University of Iowa Health Care

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

Change Service Requested

UNIVERSITY OF IOWA CARVER COLLEGE OF MEDICINE

Anesthesia Symposium XII

Saturday and Sunday, May 5 & 6, 2012

7th Floor Atrium
Roy Carver Pavilion
University of Iowa Hospitals
and Clinics
Iowa City, Iowa

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

Javier H. Campos, MD
Program Director

UNIVERSITY OF IOWA CARVER COLLEGE OF MEDICINE
University of Iowa Health Care