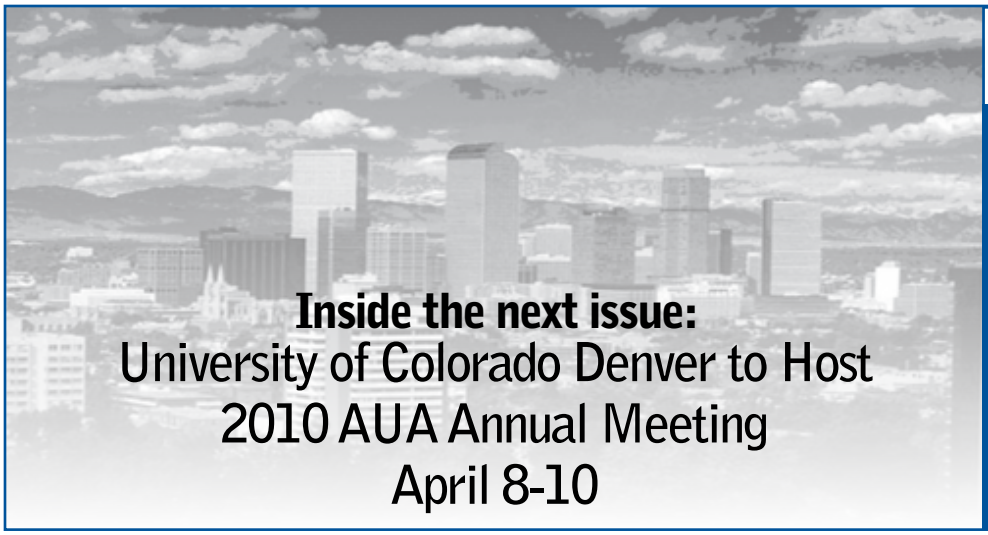

AUA
Association of University Anesthesiologists
Update
Summer 2009
Do they all need a Pediatric Anesthesiologist?
Five Ways You Might Screw Up (making this personal)
THE DEEP SLEEP
TO ERR IS HUMAN
BUILDING A SAFER HEALTH SYSTEM
WHO NEEDS DOCTORS?
ACTIVELY WORKING ON
WE WILL NEED EVERYONE WORKING TO AVERT
NURSE ANESTHESIA - SAFE ANESTHESIA
CAN'T TELL?
LOOTERS WILL BE SHOT
2009 AUA Annual Meeting - Galveston



Inside the next issue:
University of Colorado Denver to Host
2010 AUA Annual Meeting
April 8-10

Contents

ASA Launches 'Lifeline Campaign' and Needs Support of all Anesthesiologists

Roger A. Moore, M.D., President
American Society of Anesthesiologists

In 2008, the American Society of Anesthesiologists (ASA) conducted extensive research on the perceptions surrounding anesthesiologists; and we found that patients, and many in the medical community, are too often unaware of the important role anesthesiologists play in modern medicine. Anesthesiologists' work is too often perceived by others as routine or low-risk, without understanding that anesthesiologists are highly trained medical doctors who make life-saving surgery and pain management possible.

In response to these research findings, the ASA developed the Lifeline Campaign to communicate the essential role anesthesiologists play in making modern medicine possible. As an integral part of the campaign, the ASA will launch a Web site for the general public that will be the definitive source of information on anesthesiology. The site will be a resource for the public to learn about the role of anesthesiologists and the use of anesthesia during medical procedures. Additionally, new media strategies will work to push messages to other external digital resources, including medical blogs, online forums and Web sites.

However, the success of the Lifeline Campaign will also largely depend on the dedication and participation of anesthesiologists across the country. By embodying and promoting the central themes of the program, anesthesiologists will validate and reinforce the Lifeline Campaign goals and messages more effectively than any other initiative. Members can support the Lifeline Campaign with as much or as little time as they are willing to commit. Even a couple hours a year of a member's time can have a positive impact. Anesthesiologists interested in learning more about the Lifeline Campaign and how they can help should visit **www.lifelinecampaign.com** to view a short video on why this initiative is essential to the future of the profession; or contact **lifeline@asahq.org**.

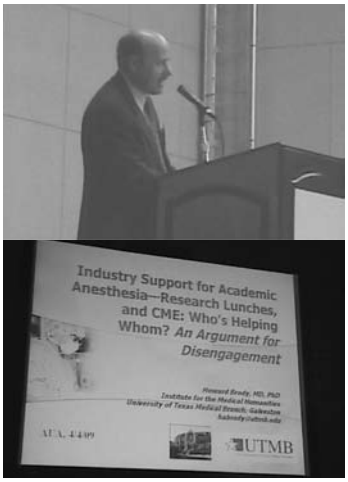
Roger A. Moore, M.D

A live Webcast hosted by the ASA leadership was broadcast on March 19, 2009. The Web cast can be accessed at **www.lifelinecampaign.com**, where it is available for download. A link to the Lifeline Campaign can also be found on the new AUA webpage "Patient Education" tab.

Visit Today!
www.lifelinecampaign.com

AUA 2009 President's Panel

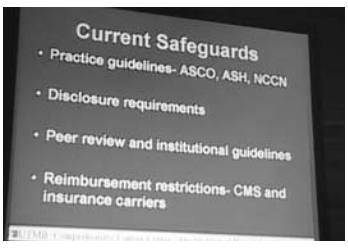
W Andrew Kofke, M.D., M.B.A.
AUA Update Editor

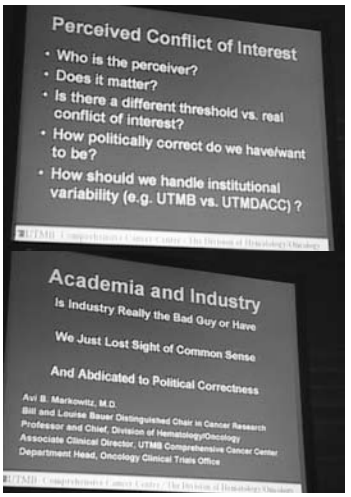


The President's Panel at the 2009 meeting dealt with conflicts of interest between academic medicine and industry. A pro-con debate was presented by two local Galveston speakers, **Howard Brody, M.D., Ph.D.**, of the UTMB Institute for Medical Humanities, and **Avi Markowitz, M.D.**, Department Head of the UTMB Oncology Clinical Trials Office. Both speakers provided persuasive arguments for each position. Dr. Pearl introduced and led into the discussion with a presentation of recent events in the controversy, notably discussing activities of Sen. Chuck Grassley in criticizing several prominent academicians for receipt of apparent largesse from industrial sources, although remaining within the letter of their institutional rules. He presented the most current Stanford rules for industry relationship. Things are clearly changing.

Dr. Brody presented the argument for disengagement of academic anesthesia from industry. The recent APA meeting in Philadelphia was so dependent on industry funding that one attendee said that without it "we'd be sitting in the basement of the YMCA." Central to Dr. Brody's position were stated core ethical values that involve commitment to the patient's well-being, mutual trust, and the need to avoid conflicts of interest if trust is to be maintained. Central to the conflict is a statement accorded to Roche-Korea: "We are not in business to save lives, but to make money. Saving lives is not our business." Dr. Brody points out that the problem arises when we confuse our primary interest with that of the corporations.

Dr. Brody presented one important method by which industry increases profits, based on the notion that a company can only substantially increase profits by exposing the public to a decreased benefit, a higher risk, or both. He presented a bell shaped curve with the small number of patients who most benefit with minimal risk to a drug at one end of the curve. With this model, a small change in the threshold for prescribing a drug produces a large increase in the number of patients for whom the drug is prescribed with greater risk of adverse effects and less chance of benefit. Dr. Brody contends that physicians are complicit in this curve shift by relying on drug reps for education and by accepting gifts, dinners and low-cost CME and by allowing company control over data. This collusion is the basis for recent drug disappointments and disasters from the over-marketing of reasonably decent niche drugs, extending their use inappropriately to larger populations for whom they were not needed as first-line drugs, thus exposing large numbers of people to adverse effects. He ended by concluding that physicians getting into bed with industry is ultimately a disservice to patients and that physicians need to see through the rationalization we employ to justify continuing to accept gifts and perks.





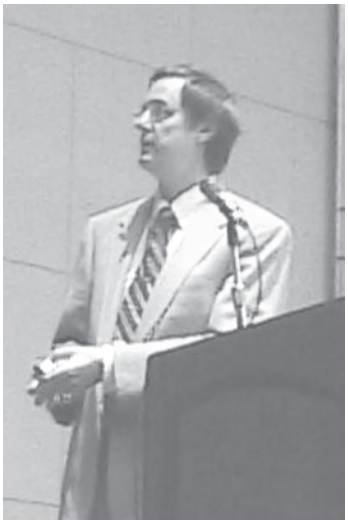
Dr. Markowitz presented an entirely different perspective. He started out by suggesting that the great majority of physicians are not easily swayed with the usually criticized inducements such as food, honoraria for speaking, or other reasonable fees. He points out that NIH funding is falling as industry funds for research are increasing, such that industry is becoming an increasingly essential element of biomedical research. Moreover, industry support of research provides scientific support, is goal-oriented, time-limited and comes with extremely close monitoring with administrative support. Moreover, industry is also providing ample funding of educational activities. Dr. Markowitz was emphatic that MOST doctors use these resources in an honorable way and are not biased by the relationships. He suggests that a few scoundrels have soiled the resource for everyone. He concluded the presentation with the suggestions that industry support doesn't compromise patient care, that industry support for research and CME benefits patients, and everyone is innocent until proven guilty. He ended with the exhortation that we should not tolerate bullying by self-appointed monitors of professional ethics who often have their own agenda and that we should be very wary of handing power to small, elite groups who believe they know better than the rest of us, and that you should trust your own judgment and instincts.

EAB Panels – Galveston AUA Meeting, April 2009

Robert E. Shangraw, M.D., Ph.D.
Chair, EAB
Professor of Anesthesia, OHSU

The Educational Advisory Board (EAB) presented two panels at the 2009 AUA Meeting in Galveston, Texas. The first, moderated by **Robert Shangraw, M.D.**, of Oregon Health & Science University, was titled "Fellowship Opportunities for Faculty Career Development in Anesthesiology." The second, moderated by **Sulpicio G. Soriano, M.D.**, of Harvard University/ Boston Children's Hospital, was titled "Subspecialty Certification in Anesthesiology: Progress or Exclusivity."

Fellowship Opportunities for Faculty Career Development in Anesthesiology



The panel goal was to catalog the proffering of post-residency fellowships available for U.S. faculty members to strengthen their academic careers, and to give a more personal perspective on the inner workings of some of those programs. Dr. Shangraw gave an overview, starting with the concept that program focus is the first issue to consider. Fellowships cluster their focus on 1) educational leadership, 2) health policy development and clinical leadership or 3) research training skills as the areas of emphasis. Other panelists included **Fredrick K. Orkin, M.D.**, Professor Emeritus at Yale University, whose talk addressed the Robert Wood Johnson programs; and **Debra A. Schwinn, M.D.**, Professor and Chair at the University of Washington, who addressed how the fellowship systems at the National Institutes of Health (NIH) are designed to create independent physician investigators.

Examples of educational leadership fellowships offered nationally are the AAMC medical education research certificate (MERC) program, the FAER mentored Research in Education Grant, and two programs offered by the Harvard-Macy foundation. The MERC program and the FAER program target mostly junior to mid-career faculty who lack research experience. The MERC program is an assortment of classes offered regionally to coincide with other medical specialty society meetings, each at a nominal cost, and culminates in a certificate award upon completion of six modules. About 10-15 people finish the program annually. More details of the MERC program can be located online at **www. AAMC.org**. The FAER mentored Research in Education Grant demands that the applicant submit a research plan and include a mentor experienced in research methods. The award is for two years, at $50,000 per year, and the applicant's department must commit 40 percent effort as nonclinical protected time. More details of the FAER program, and the application form, can be located online at **www.FAER.org/programs/grants**.

Robert E. Shangraw, M.D., Ph.D.

The Harvard-Macy foundation offers two fellowships that are aimed at senior-level faculty and are offered in Boston. One program, called Leading Innovations in Healthcare and Education, runs for a week in mid-June. The other, called Educators in Health Sciences, consists of a two-week January session and a one-week May session. Both cost $5,000-5,500 plus living expenses and accept about 50 senior physicians per session from the applicant pool, all of whom must be sponsored by their home institution. More details and the online application can be found at **www. harvardmacy.org**. In addition to the national programs, there are institutional educational fellowships offered at almost half (n = 64, 47 percent) of North American medical schools. Nancy Searle and her colleagues at Baylor University Medical Center have surveyed the institutional programs and reported that they vary in duration from two months to four years. They are offered at no cost to in-house faculty, other than a nonclinical time commitment from the fellow's department.

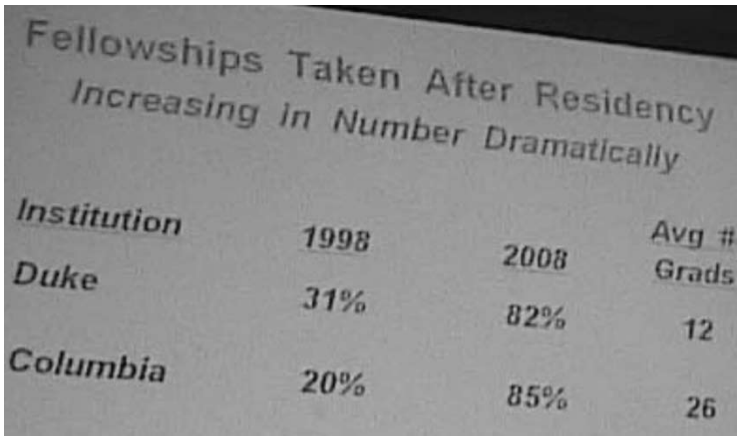
> "The bottom line is competency, and certification is not the only means to determine competency, meaning that the department must devise a system to assign the right qualified personnel to each patient."

Health policy development and clinical leadership fellowships discussed were: two programs from the Department of Veterans Affairs (VA), three programs from the Robert Wood Johnson Foundation (RWJF), the Executive Leadership in Academic Medicine (ELAM) program at Drexel University, and the Fulbright Specialists Program. The two-year VA programs target junior faculty and fresh graduates of residency programs, require an on-site mentor, and offer one slot/ site/year. They offer a stipend commensurate with PGY level, currently about $45,000-$47,000 per year. One, called Health

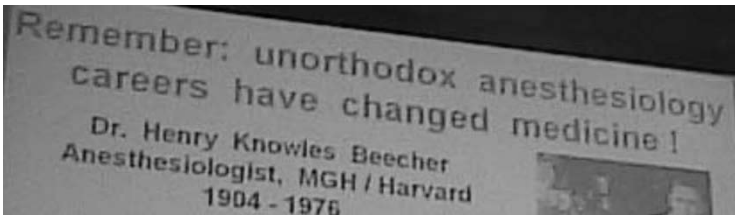
Services Research, is offered at 12 VA medical center sites, with each having its own sphere of interests and excellence. It requires the commitment of 75 percent effort protected from clinical activity. Details can be obtained online at **www.va.gov**. The second VA program, called the National Quality Scholars, differs in research topic emphases, has fewer venues (n = 6) with a core facility in Hanover, New Hampshire, and demands 80 percent effort protected from clinical activity. Program details can be found online at **www.va.gov**. The three RWJF proffering are the 1) Clinical Scholars Program, 2) Health Policy Fellowship and 3) Harold Amos Medical Faculty Development Program. Dr. Orkin, an alumnus of the first two fellowships, presented on them in detail. The Clinical Scholars Program takes 29 relatively junior physicians per year for a mentored two-year study in a non-biomedical field. It dictates dedication of 70-80 percent of professional time. There are four venues (Penn, UCLA, Michigan, and Yale), with the executive office at the University of North Carolina. More details and the online application can be found at **rwjcsp.unc.edu**. The health policy fellowship targets mid-career faculty. It immerses 10 physicians in the Washington, D.C. area (the Institute of Medicine is the base of operations) for one year, of which about 3.5 months is spent in seminars and other learning environments, and eight months is spent acting as a congressional intern tasked to health policy legislation. The applicant must be sponsored by his or her home institution. More details and the online application can be found at **rwjcsp.unc.edu**.

The Harold Amos Medical Faculty Development Program is a four-year mentored program that aims to increase "historically disadvantaged" minority representation among medical school faculty. It targets junior faculty with disadvantaged minority status and funds to protect nonclinical time (at 70 percent) for closely supervised research training in a biomedical field of the applicant's choice. Application is structured such that the mentor is a co-applicant, and the work can be conducted at the applicant's home institution. Twelve new slots are funded per year through the program office at the University of Indiana. More details and the online application can be found at **www.amfdp.org**.

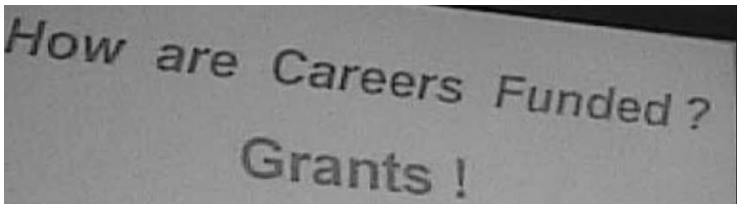
Drexel University hosts the ELAM program, a fellowship aimed at women, who are underrepresented in the most senior ranks of academic medicine. It targets senior women faculty (e.g., full professor, division chief) in an effort to boost their leadership careers. Unlike the Robert Wood Johnson programs, ELAM is not independently funded but requires tuition of almost $11,000 plus living expenses, in addition to home institutional sponsorship. It accepts 48 physicians per year to study in Philadelphia for one year (intermittently), with three one-week sessions in September, November and April. Between these sessions, there is much homework and "virtual sessions" aimed to complete a defined project by June. Further details and an online application can be found at **www.drexelmed.edu/ELAM**. The last leadership fellowship discussed was the Fullbright Specialists Program, which is targeted at already-established leaders in health policy. It is of very short duration (two to six weeks) and is international in scope ("global health"). Further information can be viewed at **www.cies/org/specialists**.



NIH is the biggest source of fellowships for clinical research. Dr. Schwinn reviewed the NIH system for fellowships awarded to institutions (e.g., T32, K30) to be distributed locally and those for direct support of individual projects (e.g., K08, K23). Dr. Schwinn noted that a grant is necessary to conduct serious research, and learning to write successful grant applications is critical to preserving a scholarly career in medicine.



The NIH independent investigator-initiated grant is the R series, predominantly R01, but also the R21. Eleven anesthesiology departments have T32 training grants for research training of members. Thirty-six medical schools have NIH Clinical & Translational Science Awards (CTSA, nee K30) that are usually associated with the clinical research center and provide semi-autonomous institution-reviewed support for clinical research projects much like a training grant. Alternatively, NIH can support a post-residency trainee directly via a mentored grant, such as the K23 (clinical research) or the K08 (laboratory research) and other similar options. Each requires, in addition to a mentor, a guarantee of protected time of 75 percent



nonclinical. There is "transition award" (K99/R00) that can be inserted as the last step on the pathway to R01 funding. The anticipated sequence of NIH research grant funding, as presented by Dr. Schwinn, is T32 or CTSA K series (± transition) R01. More detail regarding the NIH system of grants can be found at **www.grants.nih.gov/training/nrsa.htm#inst**.

Continued on page 6

EAB Panels

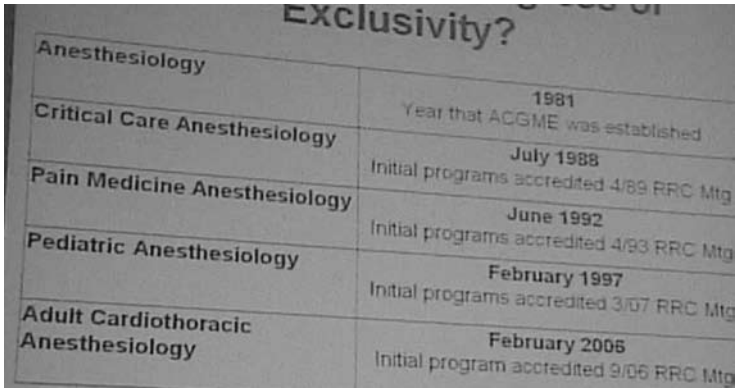
Continued from page 5

Other clinical research fellowships are modeled along the lines of the NIH system, largely because everybody's research endpoint is the NIH R01. FAER offers a two-year Mentored Clinical Research Training Grant that comes with a stipend of $75,000-$100,000 and demands 75 percent effort on the project for the trainee and 40 percent for the mentor. One must be finished with residency but less than 10 years out; and further details are at **www.FAER.org/programs/grants**.

The International Anesthesia Research Society (IARS) offers a similar fellowship, in terms of outlook and target group, called the Clinical Scholars Research Award. It comes with a stipend of $40,000 per year. More information and the online application are at **www.IARS.org/awards/clinicals.asp**.

The Fogarty International Clinical Research is a one-year fellowship, aimed at junior faculty who have had previous clinical research experience, for study in a developing country. It is supported by a partnership between the AAMC and Vanderbilt University and provides a $45,000 stipend plus an international travel allowance. Further details and a downloadable application form are at **www.FogartyScholars.org/fellows**.

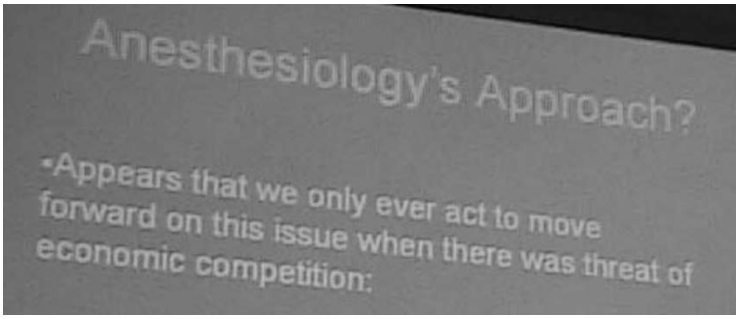
Dr. Shangraw finished with a description of an institutional clinical research fellowship at his home institution, one of the 36 CTSA centers funded by the NIH. Oregon Health & Science University (OHSU) has a two-year fellowship for junior faculty. The OHSU curriculum is offered along three tracks. The lowest intensity program is a proffering of graduate-level courses in clinical research. The next level is a certificate program that incorporates the coursework plus a mentored capstone experience, and at the top tier is a master of clinical research that adds 45 credit hours of study to the certificate program.

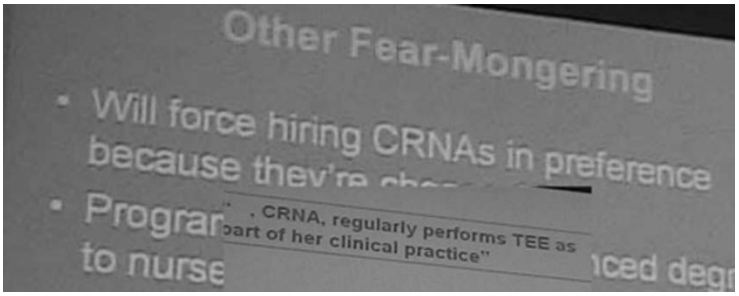


The EAB is working to upload this panel onto the AUA Web site **www.AUAhq.org** to make it available to a broader audience in our specialty.

Subspecialty Certification in Anesthesiology: Progress or Exclusivity

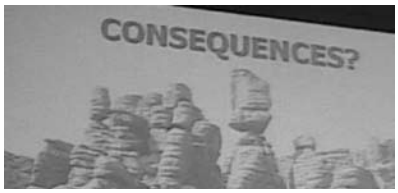
The panel goal was to lay out the arguments for and against subspecialty certification and to present coping mechanisms in the face of a requirement for subspecialty certification at academic institutions. Dr. Soriano moderated the session, and the other panelists were **Francis McGowan, M.D.**, of Harvard University/Boston Children's Hospital, presenting the "pro" position, **Steven Barker, Ph.D., M.D.**, Professor and Chair at the University of Arizona, presenting the "con" position, and **Neal Cohen, M.D.**, Professor and Vice Dean at the University of California-San Francisco, outlining the rubric by which an academic department might adjust to the possible onset of subspecialty certification in anesthesiology. Dr. Soriano gave a brief historical overview of developments that have led to pressure toward the creation of certification for the subspecialties in anesthesiology, starting with creation of the American Board of Anesthesiology in 1938. He reviewed the inaugural related certification of critical care medicine in 1985 and pain medicine in 1991. Dr. Soriano then showed the evolution of fully ACGME-accredited subspecialty training programs in anesthesiology itself, starting with critical care medicine in 1988, pain medicine in 1992, pediatric anesthesiology in 1997 and adult cardiothoracic anesthesiology in 2006.

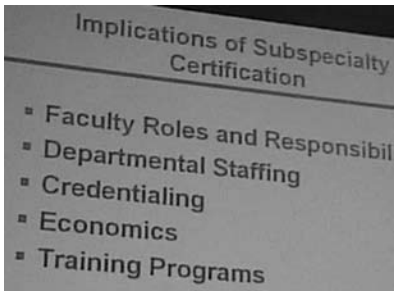


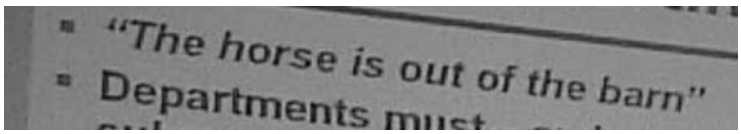


Dr. McGowan, who has been at the forefront of advocating for certification for pediatric anesthesiology, argued the case for

such a process. He noted that the Society for Pediatric Anesthesia (SPA) requested in mid-2008 that its application for certification be formally retitled as "subspecialty certification in *advanced* pediatric anesthesiology" (emphasis his), to clarify that the purpose was not to exclude other anesthesiologists to provide care for infants and children. He stressed that the SPA push for certification was focused on care of the "very young… the very ill or complex [pediatric] patient, and/or the [pediatric patient undergoing] complicated, high-risk surgical or interventional procedures." Dr. McGowan posited that pediatric anesthesiology meets the six ABA prerequisites defining a subspecialty: 1) It is a well-established subspecialty; 2) it is built on a large and well defined special knowledge and skills base; 3) there are many specific textbooks devoted to pediatric anesthesiology; 4) there is a related important national subspecialty society in the U.S. (SPA) and others like it around the world; 5) the training programs have a curriculum administered by program directors and reviewed by the RRC and ACGME; and 6) the number of training programs (n = 45) and annual graduates (n = 160) are large. Finally, he stated that the subspecialty is worthy of certification because its specialists are often specifically requested to provide care for the complex children requiring interventional care. In sum, he felt that the underlying rationale for certification was to ensure a high level of care for unusually complex pediatric patients, such that an assurance of "qualified" physician care can be made.







Dr. Barker countered that there are dangers associated with splintering a medical specialty, and he gave the example of what has happened to (general) surgery. General surgeons once were qualified to provide surgical care on almost all operations, but they have gradually lost many areas over time: neurosurgery, otolaryngology, orthopedics, etc. He showed that there are now eight subspecialty areas with fellowships, most accredited, and with many more possibly to follow. Dr. Barker noted "four [problematic] things": 1) Who decides what anesthesiologist is qualified?; 2) How can the spread to other subspecialty areas be controlled (the slippery slope)?; 3) Won't this have a negative effect on attracting the best medical students?; and 4) Balkanizing the practice of anesthesiology runs the risk of weakening our unified general anesthesiologist position from the challenge by the American Association of Nurse Anesthetists. With respect to the question of who decides, Dr. Barker suggested that the problem may become that the payers end up deciding qualification matters rather than any professional group. With respect to the second issue, Dr. Barker presented many scenarios where running the operating room suite would become progressively chaotic as subspecialists separated out, leading to scheduling complications and the need for many more call people being required each night and weekend. His third point is that a major attraction for outstanding medical students is the multiple challenges of different care settings, and this would be lost as subspecialists withdrew from the generalist pool.

Dr. Cohen reviewed the definitions of accreditation (centered on training programs) versus certification (centered on individual graduates). He noted that while certification does differentiate those who have it from those who do not, it does not necessarily dictate who can provide care to a specific patient group. These conditions are tempered by expectation from the institution, the surgeon(s), and the patient and/or patient's family. The bottom line is competency, and certification is not the only means to determine competency, meaning that the department must devise a system to assign the right qualified personnel to each patient. An anesthesiologist may still request and receive privileges to care for a certain subpopulation based on the community "standard of care." Implications for subspecialty certification in general are that credentials will become what Dr. Cohen described as "more granular," with specific material expected, and this runs parallel to a system where documented maintenance of skills will be expected. To support the faculty, departments and institutions will have to provide opportunities for their faculty to maintain credentials and to acquire new skills. Examples are clinical service rotations, use of the simulator, conventional CME, the MOCA program introduced by the ABA, and ongoing professional practice evaluation. Dr. Cohen's final position is that the movement toward subspecialty certification is not likely to be stopped in the long run and that institutions must take steps to ensure that the real endpoint is that current clinical competence is the criterion for providing care.

SAB Report – Galveston AUA Meeting, April 2009

Marie Csete, M.D., Ph.D., Chair
AUA Scientific Advisory Board (SAB)
Chief Scientific Officer
California Institute for Regenerative Medicine

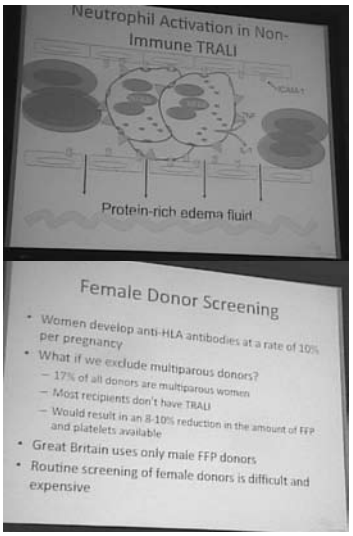
SAB sessions at the AUA Annual Meeting were lively and multidisciplinary, spanning basic discovery research and clinical studies. Although all the presentations deserve to be further advertised here, only a few can be highlighted in the newsletter, but summaries of these outstanding results show that great science is alive and well in the AUA.

Friday Morning

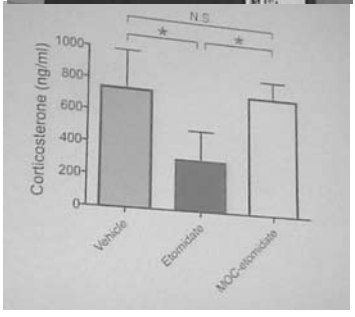
The first presentation of the meeting, by **Randal Dull, M.D., Ph.D.** (University of Utah and newly appointed to the SAB), focused on the use of nanotechnologies to understand and ultimately treat diseases characterized by barrier dysfunction, such as acute lung injury. Dr. Dull is working on development and optimization of engineered nanorepair mechanisms, using polymers to create a biomimetic capillary surface in blood vessel lumens, to turn off the mechanical transduction pathways that cause defects in barrier function. These polymers can be used to quantify subcellular biomechanical forces underlying barrier dysfunction pathophysiology, and can also be modified to perform specific functions such as scavenging of reactive oxygen species. The long-term goal is delivery of polymers that attenuate endothelial damage caused by extended mechanical ventilation, congestive heart failure or other pressure-induced disorders of lung endothelium.

This engineering approach to lung injury was followed by an update on the ongoing Specialized Centers of Clinically Oriented Research (SCCOR) Transfusion-Related Lung Injury study by **Michael Gropper, M.D., Ph.D.** (UCSF). The study involves both murine and human work. TRALI, though decreased in incidence since plasma from female donors has largely been removed from clinical use, is still the leading cause of death from transfusion. The study is addressing a two-hit hypothesis for the acute injury: First neutrophil activation (an O.R. and ICU problem), and antibodies (or old blood, or lipids) are the second hit. A mouse model of TRALI helped in the development of the hypothesis: Passive transfusion of antibody to MHC-I (in mice with the cognate antigen) results in severe ALI, but if the mice are depleted of neutrophils before the MHC-I antibody treatment, they are protected from lung injury (*JCI*. 2006; 116:1615). Platelet depletion is also protective of ALI in this model. The SCCOR centers have developed a system to retrieve residual blood bags from patients who have sustained an acute lung injury after transfusion for analysis of the factors that contribute to the injury (about 1 in 3,000 units at UCSF). The study is an example of the power of a good mouse model, allowing the investigators to refine the hypotheses using feedback between the murine studies and clinical samples.

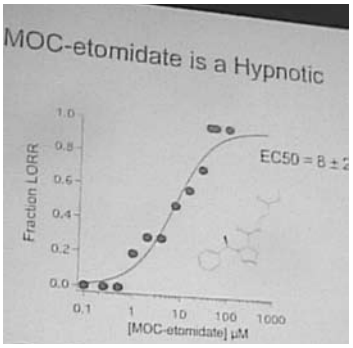
Marie Csete, M.D., Ph.D.



A very striking talk by **Douglas Raines, M.D.** (Massachusetts General) took us to the movies, and to a potentially important future addition to the anesthesiologist's drug armamentarium. Dr. Raines and his colleagues have modified the backbone of etomidate to incorporate an ester group, which facilitates rapid metabolism of the drug by endogenous esterases. The movie said it all: In a time lapse of rats given etomidate versus the modified drug (MOC-etomidate), we witnessed not only the rapid recovery of the animals from the modified anesthetic, but their instant alertness on recovery (versus significantly longer lasting effects of eto-

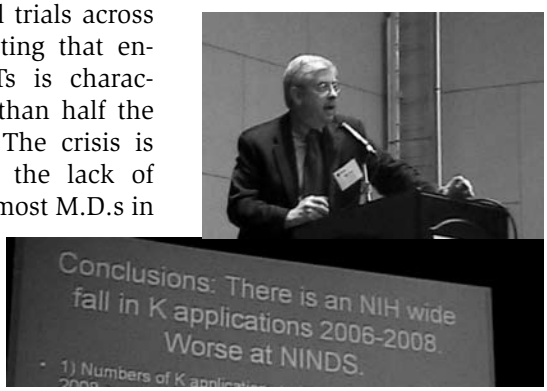


midate). So far, the group has not found significant toxicity from MOC-etomidate in animals, and they are now working toward development of the drug for clinical testing.



NIH Session

The NIH session was an update of activities at NINDS by **Walter Koroshetz, M.D.**, a neurologist and Deputy Director of the Institute. His presentation advertised some lesser-known but important opportunities for NIH funding and training. Dr. Koroshetz discussed an enrolment crisis in randomized clinical trials across the country, noting that enrolment in RCTs is characteristically less than half the target number. The crisis is complicated by the lack of involvement of most M.D.s in clinical research — at any time in their careers, only ~15 percent of physicians participate in clinical research. Further, though research by Ph.D.s has increased at NIH, M.D.-directed research by practicing physicians has been flat since 1980. K08 award applications have seen a 40-percent drop at NINDS in the period 2006-08, and a 20-percent drop NIH-wide. K23 award applications are also significantly down in recent years. In response to these data, NINDS has developed a translational program well suited to young academic anesthesiologists; it's a milestone-driven program targeted to investigators within five years of receiving their M.D. degree. He also announced a Clinical Trials Methods Course particularly suited to fellows, which runs in the summer months. (The American Neurological Association also offers a similar opportunity.) NINDS also offers a program designed for neurology and neurosurgery residents, and this R25 Research Education Grants (**grants.nih.gov/grants/guide/rfa-files/RFA-NS-09-001.html**) program appears to be an important program for talented anesthesiology residents. Another response to the clinical trials and translational research crisis by NINDS is the establishment of disease networks, such as NIH Exploratory Trials in Parkinson's Disease (NET-PD, **parkinsontrial.ninds.nih.gov/netpd-study.htm**), a consortium of 11 centers active in translational research in this area.



Sunday Morning

Sunday's talks were also outstanding and wide-ranging. Two focusing on sepsis are presented here. **A. Murat Kaymar, M.D.** (University of Pittsburgh) discussed the role of matrix metalloproteinase-8 (MMP-8) in sepsis. MMPs are endopeptidases that degrade matrix proteins and play important roles, including regulation of cell surface receptors and angiogenesis, among other functions. MMP-8 cleaves collagen, then the collagen fragments are cleared by MMP-2 and -9. MMP-8-deficient mice have a decreased lifespan, but are protected against sepsis-related mortality. Dr. Kaymar examined patterns of chemokines from peritoneal samples of septic mice (using the cecal ligation and puncture model) and found that the MMP-8 knockout animals showed upregulation of macrophage inflammatory protein-2 (MIP-2, a chemokine that is normally a target of MMP-8 enzymatic activity). The elevated levels of MIP-2 in the MMP-8 knockouts are likely the cause of neutrophilia after CLP in this model. These results suggested that neutrophil function should be an important factor in explaining the survival difference between knockout and wildtype mice after CLP. However, Dr. Kaymar looked at phagocytic function in the MMP-8 knockout and saw no evidence that the mice were protected because of improved phagocyte function. He then decided to examine neutrophil extracellular traps, another method of bacterial control, and found that nets from the knockout mice peritoneum had enhanced bacterial killing function compared to controls. MMP-8 normally destabilizes these nets.

The candidate regulator approach taken by Dr. Kaymar (above) was complemented by a more high-throughput approach to studying the pathophysiology of cardiac dysfunction in sepsis. The presentation by **Andrew Patterson, M.D., Ph.D.** (Stanford), like that of Michael Gropper, was a testament to the power of mouse models in the hands of skilled clinician investigators. Dr. Patterson examined strain-specific changes in cardiac function in the setting of sepsis. Two models of sepsis were used: Lipopolysaccharide or zymosan, and whole heart mRNA was analyzed for expression profiles specific to the sepsis inducer and to the pattern of cardiac dysfunction in the different mice strains. Three strains of mice were examined, and the first important observation was that the genetic background influences baseline cardiac function, with statistical differences in systolic and diastolic function between strains. Furthermore, the response to the toxins was also strain-specific, with one strain (C57) developing a hyperdynamic response to one challenge and another strain (FVB) with decreased cardiac contractility. Expression-level changes associated with functional responses and with the specific toxin were identified, suggesting that the pattern of cardiac dysfunction associated with sepsis is likely due both to the nature of the pathogen and the genetic background of the host. The microarray results pointed to inflammation as the major player in sepsis-associated cardiac dysfunction. Importantly, this work identifies clinically-relevant tools for identifying the patterns of cardiac dysfunction in patients with sepsis.

Fifty-six poster presentations completed the scientific offerings, again spanning basic discovery, translation, and clinical and epidemiologic studies.

Continued on page 10

SAB Report

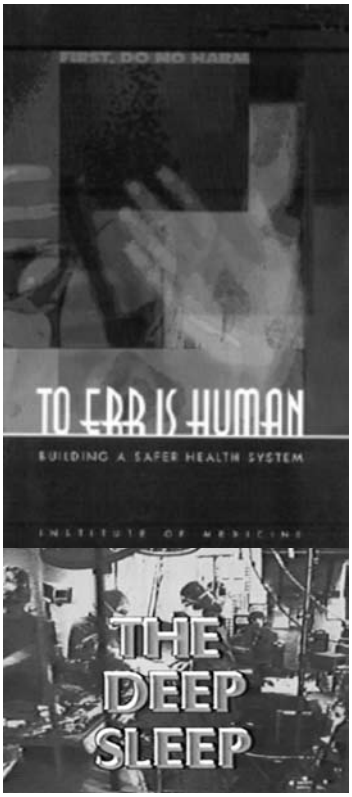
Continued from page 9

Resident Travel Awards were given to **Dr. Robert Lobato** (Duke) and **Dr. Laurence Ring** (Columbia). Dr. Lobato interrogated the relationship of metabolic underpinnings of cardiac ischemia-reperfusion. Using mass spec, he examined coronary sinus samples before and after aortic cross-clamping in cardiac surgical patients for patterns of cellular energy sources and metabolites, amino acids and acylcarnitines; he then explored a relationship between the concentrations of various components of the metabolome with perioperative MI. The results suggested that perioperative MI was associated with ongoing use of fatty acids as fuels after reperfusion, and specifically identified fluxes along the carnitine palmitoyltransferase-I and beta-oxidation pathways in patients who experienced the complication. The long-term goals of this research are to find metabolomic fingerprints that can prospectively identify patients at risk of perioperative MI after cardiac procedures, and to identify candidate preventive therapies.

CRITICAL INCIDENT STUDIES IN ANESTHESIA: 1975-1980

Dr. Ring's work is grounded in the basic physiology of obesity, using a genetically engineered mouse model to study growth, weight and glucose homeostasis as a function of leptin signaling in the hypothalamus. Using Cre recombinase-flox manipulations, mice with functionally absent leptin receptors only in the hypothalamus were generated. With this localized knockout (only hypothalamus), the mice recapitulated complete knockout of leptin in important ways and became obese and insulin-resistant, with increasing accumulation of fat mass over the first three months of life. Creation of this mouse model will allow further identification of specific neurons involved in the control of body fat and mass.

The SAB Plenary Lecture was delivered by **Jeffrey B. Cooper, Ph.D.** (Massachusetts General), who walked us through the profound improvements in safety in the clinical practice of anesthesiology, a field in which he has been a research pioneer and leader. Dr. Cooper reminded the audience of the fundamental importance of a long-term dialog between talented clinicians and researchers in forging major change in clinical care. The contribution of the Anesthesiology Patient Safety Foundation to patient safety, and of organized anesthesiology generally, has significantly reduced anesthesia-related mortality, though precise statistics are difficult to pin down. Despite the astonishing advances in safety, Dr. Cooper reminded us that there is considerable room for improvement, and that the field must take advantage of novel recording technologies, registries, simulation, and advances in social sciences to make anesthesiology even safer. The challenge for capitalizing on these tools as opportunities in hard financial times is enormous, but Dr. Cooper provided inspiration with his historical perspective, and noted that the quality of science at AUA also gives promise that our field will continue to apply multidisciplinary scientific approaches to anesthesia safety.



SAB looks forward to an exciting program next year, and we are happy to hear suggestions from AUA members about timely scientific topics for the meeting.

Is Anesthesia Safe Enough?

The Bromley story (http://www.chfg.org/index.htm)

JoVE: The First Video Journal for Biological and Biomedical Research

Moshe Pritsker, Ph.D.
JoVE Editor-in-Chief
Somerville, Massachusetts

JoVE is the first video journal for biological and biomedical research. It publishes articles that include step-by-step video demonstrations of experimental techniques in biological research and clinical medicine. For example, "Human In-Vivo Bioassay for the Tissue-Specific Measurement of Nociceptive and Inflammatory Mediators" from the group of Martin Angst at Stanford, or "A Behavioral Assay to Measure Responsiveness of Zebrafish to Changes in Light Intensities" from the group of John Dowling. These articles are called "video-articles," and they also include a text portion structured as a traditional scientific article (abstract, introduction, experiment, materials and references).

This novel video-based approach to scientific publishing is applied to increase reproducibility and transparency of experimental studies, one of the most difficult "bottleneck" problems of contemporary biomedical research. As every practicing scientist knows, it is very difficult to repeat biological experiments based on their text description in traditional scientific journals. Visualization through video provides a solution to this problem by clear, unambiguous demonstration of experimental techniques and procedures. The video-publication is expected to increase efficiency and productivity across all the areas of biomedical research and drug discovery.

JoVE was founded in 2006 by a group of three people, including two post-doctoral researchers at the Massachusetts General Hospital, Moshe Pritsker, Ph.D., and Klaus Korak, M.D., and a programmer Nikita Bernstein. Being a scientific journal, JoVE is indexed in PubMed and MEDLINE, and has an editorial board of 22 distinguished professors from Harvard, Princeton, NIH and other leading institutions in the U.S., Europe and Japan. After two years of operations, JoVE has published 23 monthly issues, including nearly 300 articles across all the areas of experimental biology, such as neuroscience, cell biology, developmental biology, stem cell research, immunology, bioengineering and plant biology. Most of the articles are produced at laboratories in leading academic research institutions, including Harvard, MIT, Berkeley, Stanford, UCSF, Yale and others.

Most scientists do not have experience in video-production and therefore cannot make good-quality videos of their own experiments. Therefore, JoVE has developed a network of video-professionals to conduct production of scientific videos in research institutions across 30 cities in the U.S., Canada, U.K., Germany and Japan, including such centers of academic research as Berlin, Boston, Chicago, London, New York, San Diego, San Francisco, Seattle, Tokyo, Toronto, Vancouver, and others. These video professionals are selected, interviewed and trained by JoVE before they are sent to film in laboratories that wish to publish in JoVE.

Moshe Pritsker, Ph.D.

The entire JoVE publication process works as follows:

- Authors submit a text description (protocol) of their experiment to JoVE.
- JoVE sends one of its video professionals to film the experiment in the authors' laboratory.
- JoVE editors then edit the video.
- The video is submitted for the approval by authors and reviewers.

JoVE accepts submissions on advanced and basic experimental techniques. It also requires that authors confirm that their experimental techniques comply with the institutional requirements on human and animal research. After production, the video-articles are sent to reviewers in a regular fashion: two to three anonymous reviewers at different universities. The reviewers provide their comments according to the timeline in the videos, e.g. "introduce changes at 2 minutes 35 seconds." They also provide comments on the text part, e.g., "introduce changes in paragraph 4."

Being initially focused on basic biological research, JoVE received numerous requests to expand its approach into various fields of clinical medicine, psychology and other fields. The JoVE founders aim to build a large, comprehensive online video-publication that includes a video-article on every possible experimental technique in biological and medical research. We believe that creation of such a resource will tremendously increase productivity of research in academia and biotech industry, accelerating development of new technologies and drug discovery.

AUA

Officers and Councilors-at-Large

President
Ronald G. Pearl, M.D., Ph.D.
Stanford University

President-Elect
Kevin K. Tremper, M.D., Ph.D.
University of Michigan Hospital

Secretary
M. Christine Stock, M.D.
Northwestern University

Treasurer
John A.Ulatowski, M.D., Ph.D.
The Johns Hopkins University

Ex-Officio
William a. Kofke, M.D., MBA
(Newsletter editor)
University of Pennsylvania

Councilors-at-Large
Neal H. Cohen, M.D., M.P.H., M.S.
University of California - San Francisco

H. Thomas Lee, M.D., Ph.D.
Columbia University

Patricia Kapur, M.D.
David Geffen School of Medicine

Council of Academic Societies Representatives
Roberta Hines, M.D.
Yale University

Steven J. Barker, Ph.D., M.D.
University of Arizona

Educational Advisory Board
Robert E. Shangraw, M.D., Ph.D.
Oregon Health & Science University

Scientific Advisory Board
Marie E. Csete, M.D., Ph. D.
California Institute for Regenerative Medicine

Association of University Anesthesiologists
520 N. Northwest Highway
Park Ridge, IL 60068-2573
(847) 825-5586 fax (847) 825-5658
aua@ASAhq.org www.auahq.org

AUA Is Developing A Strategic Plan

At the spring Council meeting, AUA President Ronald G. Pearl, M.D., Ph.D., initiated a strategic planning process. About four hours were spent deliberating, and a draft plan is being developed. For the information of members, the outline of the draft strategic plan follows.

Mission

The mission of the Association of University Anesthesiologists (AUA) is to advance the field of academic anesthesiology and support the career development of academic anesthesiologists by (1) promoting scholarship in anesthesia education, (2) encouraging original investigations in basic and translational clinical science, (3) advocating for academic anesthesiology and (4) fostering the open and informal exchange of ideas among practitioners in the field.

Goals

1. Institute succession planning in the AUA leadership structure to achieve more organizational continuity.
2. Increase coordination among the Council, Educational Advisory Board (EAB) and Scientific Advisory Board (SAB).
3. Review the format, structure and content of the Annual Meeting and make improvements as indicated.
4. Review criteria for AUA membership and make any changes deemed warranted.
5. Increase the participation of AUA members in the activities of the Association.
6. Increase opportunities for junior academic anesthesiologists, fellows and residents interested in careers in academia to become involved in the Association.
7. Increase AUA's visibility and improve its image in the academic and scientific community.
8. Conduct advocacy activities on behalf of academic anesthesiology.

Strategies for implementation of these goals are being developed. If you would like to suggest other important strategic goals that the AUA Council should consider for inclusion, please contact Dr. Pearl at **rgp@stanford.edu.**

Air in line! Oh, no! The Epi has stopped! Call the rapid response team!