



AUA

Association of University Anesthesiologists

Update

Spring 2012

Contents

EAB Report	2
SAB Report	3
Advocacy Update	5
FAER: Funding Anesthesiology's Future Through FAER, Then NIH Grants	6
Technology Review: Lecture Capture	7
AUA 59 th Annual Meeting Program	8

Health Care Reform 2012: The Future Role of Anesthesiology

*John M. Zerwas, M.D., President-Elect
American Society of Anesthesiologists*

Health care reform has been the center of attention since March 2010 when the Patient Protection and Affordable Care Act (PPACA) passed. Since enactment, this legislation continues to morph and be challenged in a number of venues. Regardless of anyone's political position on this law, it certainly can be said it is the most comprehensive change in the health care environment since the passage of Medicare and Medicaid in the mid 1960s. The landscape has changed dramatically as a consequence of the debate, requiring all medical specialties to take a critical look at their role in a system that rewards quality and efficiency as opposed to pure productivity.

The medical specialty of anesthesiology is no exception to the need for a critical evaluation of its role in this new paradigm. The American Society of Anesthesiologists (ASA) has taken this challenge very seriously as it continues to execute its strategic plan in 2012. The current three-year plan was initiated under the leadership of Mark A. Warner, M.D. and continues to be refreshed and implemented under your current leadership. Central to this plan is the ASA mission to "Advance the Practice and Secure the Future," and to realize a vision to be the premier medical specialty society in the world.

The ASA strategic plan is organized under three overarching goals: Financial Security, Organizational Excellence, and Exceptional Member Benefits. Under the leadership of our Treasurer, James D. Grant, M.D., we have seen our financial performance improve despite wild fluctuations in the market.

Organizationally, the society has invested in substantial talent in our Park Ridge and Washington, D.C. offices. Our leadership in these offices, John A. Thorner, J.D., CAE, in Park Ridge, and Ronald Szabat, J.D., LL.M., in Washington, are dedicated individuals who have a clear picture of our future.

Exceptional member benefits are the most tangible reflections of the ASA's commitment to our future. Our educational products are the envy of the world and continue



John M. Zerwas, M.D.

to meet the needs of our members and their patients. Our advocacy efforts have been substantial in promoting the value of our academic settings with the passage of the teaching rule, which was a long, hard-fought battle. Our efforts in advocacy are a clear reflection of our primary motto, "Vigilance."

Recognizing the need to define our role in the future regarding a reformed health care environment, ASA completed a deep review of PPACA, and specifically the concept of accountable care organizations (ACO). Whether it's ACOs or some other method to promote quality and efficiency, ASA has responded to the need to better define

"Exceptional member benefits are the most tangible reflections of the ASA's commitment to our future. Our educational products are the envy of the world and continue to meet the needs of our members and their patients."

Continued on page 4

EAB Report: Curriculum Quality: An Essential Reason to Score

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The elements for success in any education intervention depends on ensuring that appropriate and necessary content is delivered to the intended audience. In the passive didactic lecture setting, selecting relevant lecture content is often relatively simple when conveying knowledge is the primary intent. When higher-order experiential educational activities such as those using standardized patients, simulations or task-training approaches are planned, selecting appropriate content and constructs is more difficult as questions often arise about the reproducibility, relevance and validity of the learning experiences. These questions can be effectively addressed if a participant score is generated from the learning experience.

In medical education, and particularly graduate and continuing medical education, there is resistance to the concept of assigning a participant score. This concern about scoring primarily relates to the concerns about how these scores might be used to assess participants; yet without these scores, evaluating the quality of the curriculum is difficult, if not impossible. In order to evaluate curriculum content, a participant's score is used to ensure that the content is relevant and provide evidence of curriculum effectiveness. For various widely available task-training certification programs such as BLS, ACLS, PALS, ATLS, etc., assigning a participant score could be used to determine whether the training meets the goal of providing a reproducible and, more importantly, a valid learning experience for the intended audience.

In specialty practice, as the skills and competence domains of educational interest become more complex and include higher-order activities, a curriculum adapted to the learning needs of the learner is of paramount importance. For this reason, curriculum content is a major consideration. The domains of practice that are of interest often include multifaceted clinical judgments, effective communication, situational awareness and various elements of teamwork. Prior to placing any confidence in the value of a curriculum, the development of a scoring method and an analysis of participant scores are necessary to determine whether the training is meeting the intended education goals.

How are scores used to improve the quality of the curriculum?

- The development of a scoring system ensures that a performance-based curriculum includes training that has defined learning objectives. If subject matter experts agree about the methods as well as the approach to score the exercise, then the training is more likely to include relevant content and meet training objectives. This expert "weigh in" on a score results in a directed experiential learning experience.
- A scoring system identifies diagnostic or therapeutic or communication and teamwork actions as well as procedural steps that are considered essential by the experts. If there are sequential steps or actions that are considered detrimental, then this pre-implementation information is often useful to guide feedback.

- This process of developing a method to score also identifies those actions and tasks where expert opinion is divided about the most effective management strategy. In providing feedback, participants often find it helpful to understand that experts have differing opinions about the expected diagnostic or treatment options.
- Scoring ensures that feedback is adapted to the participant's performance. In order to improve performance, the experienced learner requires directed feedback. A scoring rubric offers debriefing targeted to performance. Rather than directing valuable training time to those skills and abilities that the participant effectively demonstrates, a scoring system offers a methodology to debrief only performance deficits. In this manner, the curriculum is adapted to the needs of the individual or team.
- By analyzing the scores of multiple participants, evidence can be accumulated to ensure that the curriculum provides a valid training experience. If the training has valid content and constructs, then those with more experience and training should be achieving higher scores than the novice or less experienced physician. If there is no difference or the novice is outperforming the more advanced faculty member or expert, then more than likely the content and constructs are inconsistent with clinical practice or the intended curriculum goal is not being achieved by the exercise.
- If all participants are able to effectively accomplish the training goals, perhaps this type of time-consuming, resource-intensive curriculum is unnecessary. On the other hand, if the scores indicate that only the highest-achieving physicians are able to recognize or manage the event, then potentially an area for practice improvement across the entire training group should be considered to address the performance deficits.
- In the absence of the scores, the relevance of the training to a clinical practice outcome metric will remain a relatively elusive goal. The initial assumption that training is relevant and valid must be addressed, as merely requiring universal participation in an educational activity that is not determined to be reproducible and valid is unlikely to accomplish a goal of practice improvement.



David J. Murray, M.D.

In summary, the purpose of this synopsis is not to enter the debate about whether or not a participant should receive a numeric, letter or pass-fail grade. The intention is to indicate that performance programs and activities need to be evaluated to ensure that the practice domains included are relevant and necessary skills. To accept these education activities as requirements without this analysis is unlikely to accomplish the goal of performance and practice improvement.

SAB Report: Role of IL-4 in Facilitating Translational Therapies for Drug-induced Liver Injury

Dolores Njoku, M.D.

Associate Professor and Director

Fellowship in Pediatric Anesthesiology

Lead Investigator, Drug-Induced, Immune-mediated Liver Injury

Johns Hopkins University

To the residents who scan this article, I am truly impressed. You are much better readers than I was as a resident. To the junior faculty who browse this article, hang in there. Everything becomes so much clearer with time – or clearer for a few minutes at a time. To the more senior colleagues who peruse this article, I hope it brings back fond memories of that one point when everything made sense. Now, I don't claim that this is the first of many things that make sense or the last of the same. Only time will tell, and we will all just have to wait and see.

So what do I know? I know this: research on any subject can become its own enterprise. However, more and more we are asked to demonstrate how our seemingly remote experiments translate into improving the care of our patients by either directly understanding disease processes or even improving patient safety. How we address these challenges underscores what we are truly made of and will determine how we move forward. Hence, recognizing that our audience is not only the scientific but also sometimes political, we have witnessed dramatic descriptions of potential cures for common and even obscure diseases using complex and fantastic demonstrations. In sharp

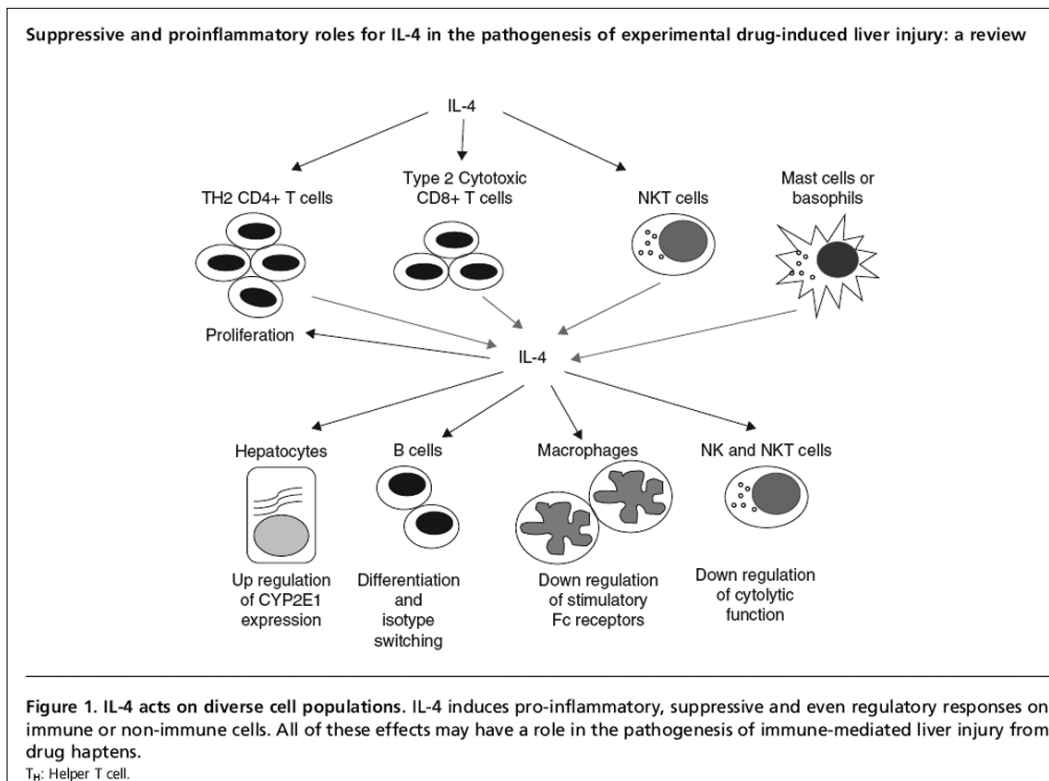
contrast we have also seen advancement and change seemingly in a whisper. In this latter way, IL-4 has now arrived on the scene.

From an investigator's view, IL-4 promotes the proliferation of CD4+ T helper-2 (Th2) cells that produce IL-4, IL-5, IL-6 and IL-10; however, IL-4 also promotes the development of CD8+ T (Tc2) cells that also produce more IL-4. Regulatory roles such as isotype switching of B cells, up-regulation of CYP2E1 expression by hepatocytes, down-regulating stimulatory Fc receptors and up-regulating inhibitory FcγRII on macrophages also fall into the realm of IL-4 activities. IL-4 even down-regulates IFN-γ expression by NK or NKT cells, which promotes Th2 priming and even tolerance to invading antigens. Mast cells and basophils, associated with autoimmune and allergic responses, also produce IL-4. Thus, IL-4 could have multiple roles in the pathophysiology of several diseases (see figure, reproduced with permission from *Expert Opin Drug Metab Toxicol.* 2010; 6(5):519-531).



Dolores Njoku, M.D.

Figure 1



In 1996, the role of IL-4 in promoting inflammation associated with allergic asthma was thoroughly reviewed. Prior to that time, there were several sentinel reports identifying IL-4 as a key trigger of allergic inflammation. In her review, Dr. Karp clearly described how allergy and asthma, complex multifactorial diseases, can be triggered by mechanisms that were previously described as “anti-inflammatory.” Since that time, we have seen the birth of leukotriene receptor antagonists that directly reduce airway responsiveness in allergic asthma as well as IL-4 levels in nasal lavage. We are indebted to our predecessors in opening the window to directly translating therapies based on understanding the pathogenesis of allergic responses to immunogenic antigens. For the next two years I read this review over and over. I

Continued on page 4

Continued from page 3

kept wondering if it were possible that this cytokine would also hold the key to understanding drug-induced liver injury (DILI).

DILI is a leading cause of acute liver failure in the United States. More importantly, DILI is an unrecognized cause of unexplained transaminitis. Not surprisingly, then, depending upon what you read, the incidence of DILI can range from 1 in 10,000 to 1 in 100,000. The critical issue for anesthesiologists is that many of the drugs that we routinely use have been associated with two types of DILI, namely toxic metabolite-mediated DILI from acetaminophen, or auto-allergic DILI from cephalosporin or penicillin antibiotics, non-steroidal anti-inflammatory drugs, phenytoin, tegretol or halogenated volatile anesthetics. Unfortunately, by the time perioperative DILI is recognized, our sophisticated patients seek out hepatologists, leaving the anesthesiologist unaware that DILI has occurred.

Immune-mediated auto-allergic DILI is a unique entity. What makes it unique is that its pathogenesis requires two concomitant events in order to produce the final phenotype. On one hand, there are immune responses to a reactive metabolite that has covalently altered native liver proteins. This sole act induces allergic reactions to the metabolite as well as autoimmune reactions to the native proteins. Because of this two-hit scenario, investigators have struggled with the mechanisms of this type of DILI. But, finally, some clarity:

The most interesting feature of IL-4 is its ability to induce isotype specific MHC II up-regulation on antigen presenting cells, namely its association with the production of IgG4 subclass antibodies. In 2006, we detected high levels of CYP2E1 IgG4 autoantibodies in the majority of persons with anesthetic immune-mediated DILI and published our findings in a clinical immunology journal. Interestingly, in this manuscript we focused

on the role of complement in anesthetic DILI, a popular topic of the time; however, the retrospective view always allows greater wisdom. When we reviewed our own paper, we determined that our findings strongly implicated a key role for IL-4. We tested our new hypotheses in our animal model of immune-mediated anesthetic DILI that we had originally reported in 2005. After many experiments and self-reflection, we first confirmed in our experimental model in 2008 that IL-4 had a critical role in the pathogenesis of immune-mediated anesthetic DILI. We also first hypothesized that this mechanism may have a critical role in the pathogenesis of immune-mediated DILI from some penicillins, NSAIDs and possibly tegretol and phenytoin.

Since our first report connecting IL-4 to the pathogenesis of immune-mediated auto-allergic anesthetic DILI, many reports have confirmed our results in immune-mediated DILI from anesthetics or penicillins. We also determined that some patients with anesthetic DILI even develop IgG4 antibodies to reactive drug metabolites. These findings further highlight the role of IL-4 in the development of allergy to any immunogenic antigen.

So there it is, my moment of clarity: IL-4 contributes to auto-allergic DILI. Well, to be completely honest, a lot has happened since identifying CYP2E1 IgG4 autoantibodies as a biomarker for anesthetic DILI and confirming that reactive metabolites can induce allergy. We have determined the immunogenic portion of CYP2E1 and its potential role in other diseases. For those of you who know me well, you know I need to be sure before you see it in press. We have also uncovered wonderful and exciting things further pinpointing the role of IL-4 in auto-allergic DILI. Lastly, I have a confession to make: students keep you honest. For this I have to thank my students who have stuck with me on this journey: Lisa Strouss, Elisa McCarthy, Angela Aherrera, Lina Kim, Joonhee Cho, John Diehl, Zoe Lawrence, Alice Drain and Phil Yang.

Health Care Reform 2012: The Future Role of Anesthesiology

Continued from page 1

the possible role of anesthesiologists in this new environment. The concept of the “Perioperative Surgical Home” has been discussed with the leadership of the Centers for Medicare & Medicaid Services (CMS) and is now considered one of those possible innovations that the Center for Medicare and Medicaid Innovation, or CMMI, may consider funding in the near future. Though the model has been clearly demonstrated to be of value in various settings (many of academic nature), it has risen to a higher level of awareness in the past two years. ASA, under the leadership of Norman A. Cohen, M.D., has produced a white paper describing the concept. In addition, ASA will be submitting a grant request to be the “convener” of practices incorporating the perioperative surgical home concept. Also, a new ASA committee has been constituted that will be titled “Future Models of Anesthesia Practice.” We remain vigilant in

the pursuit of models of care that continue to recognize the value of anesthesiologists in the continuum of care of the surgical patient. Ultimately, we will only be successful if our training institutions engineer our programs to produce the next generation of physicians with the necessary skills to thrive in this environment.

Health care reform remains to be fully defined, but it is crystal clear that any reform will only be successful if anesthesiologists integrate themselves into a larger realm of care. I remain optimistic for the future of our specialty, especially with the commitment of ASA as well as our many academic programs to produce the best and the brightest among physicians. The future is ours to realize. As Jack Welch would say, “Control your destiny, or someone else will!” The American Society of Anesthesiologists and our many outstanding academic institutions are, in fact, defining that destiny.

Advocacy Update

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Budget Proposal Cuts Funding for Physician Training

The Obama Administration revealed its budget proposal for fiscal year 2013 on February 14, 2012. The proposal includes significant reductions in Medicare funding for physician training, including a 10 percent cut to indirect medical education (around \$9.7 billion over 10 years) and a 67 percent cut to children's hospital graduate medical education. The budget also proposes eliminating two Title VII health professions programs and freezing funding levels for the National Institutes of Health. If enacted, this would mean that the NIH budget has failed to keep pace with biomedical inflation for 10 consecutive years.

Further details are available at:

<https://www.aamc.org/newsroom/newsreleases/273718/120213.html>

More information regarding petitions and grassroots activities related to this issue will be forthcoming. Please be on the look out for how you can help to make a difference on this KEY issue!

Organization for Interprofessional Education and Practice

The Association for American Medical Colleges and five other national health professions associations formally joined recently to create the Interprofessional Education Collaborative (IPEC), a national organization that will focus on better integration and coordination of the education of physicians, nurses, dentists, pharmacists, public health professionals and other members of the patient health care team. The new IPEC organization will provide leadership around national initiatives to advance interprofessional education (IPE) and share information on IPE best practices and collaborative practice innovations.

Further details are available at:

<https://www.aamc.org/newsroom/newsreleases/273754/120214.html>

In May 2012, IPEC will sponsor its first faculty development institute, "Building Your Foundation for Interprofessional Education." The program will enable faculty from across the health professions to meet with peers in plenary and interactive learning sessions focused on building strong programs for team-based learning.

Registration information is available at:

<http://www.aacp.org/meetingsandevents/othermeetings/Pages/2012IPECInstitute.aspx>

SGR Formula

On January 24, the 2012 session of the U.S. Congress began with President Obama's State of the Union address. While both the House of Representatives and the Senate technically

reconvened in mid-January, both parties had left Capitol Hill shortly thereafter on their respective retreats, leaving little time to tackle pending legislative business. On February 17, Congress did pass a conference committee proposal that would delay by 10 months, but not permanently fix, a scheduled 27.4 percent cut to Medicare physician rates. A previous two-month delay to the Medicare cuts, hammered out in a dramatic year-end Congressional session, was set to expire March 1. It is disappointing that lawmakers, yet again, could not come up with a permanent solution to the flawed physician reimbursement algorithm under the Sustainable Growth Rate formula and instead settled for another short-term patch that expires at the end of 2012. Cuts to physician reimbursements of 32 percent are pending if a solution is not reached by January 2013.

Further details are available at:

<http://www.asahq.org/For-Members/Advocacy/Washington-Alerts/House-and-Senate-Pass-Final-Version-of-HR-3630-10-Month-SGR-Extension-Included.aspx>

To write to Congress:

<http://ama.capwiz.com/ama/issues/alert/?alertid=53132696>

ICD-10 Delay

As part of President Obama's commitment to reducing regulatory burden, Health and Human Services Secretary Kathleen G. Sebelius announced recently that HHS will initiate a process to postpone the date by which certain health care entities have to comply with *International Classification of Diseases, 10th Edition*, diagnosis and procedure codes (ICD-10). The final rule adopting ICD-10 as a standard was published in January 2009 and set a compliance date of October 1, 2013 – a delay of two years from the compliance date initially specified in the 2008 proposed rule. HHS will announce a new compliance date moving forward. It is not clear at this point what the new date will be. Stay tuned...

ICD-10 codes provide more robust and specific data that will help improve patient care and enable the exchange of our health care data with that of the rest of the world that has long been using ICD-10. Entities covered under the Health Insurance Portability and Accountability Act of 1996 will be required to use the ICD-10 diagnostic and procedure codes.



Sadeq A. Quraishi, M.D.,
M.H.A.

FAER: Funding Anesthesiology's Future Through FAER, Then NIH Grants

Denham S. Ward, M.D., Ph.D.

President, Foundation for Anesthesia Education and Research (FAER)

One of the ways FAER is trying to help increase the number of anesthesiologists who are independent clinician-scientists is by funding promising anesthesiologists in their early careers with Mentored Research Training Grants (MRTGs).

The two-year, \$175,000 MRTG aims to prepare junior faculty members for careers in research. After applying for or receiving a FAER grant, the next step is often to apply for Mentored Career Development Awards (K-awards) at the National Institutes of Health (NIH). These include the KO1 research scientist award, KO8 clinical scientist award and the K23 patient-oriented research award. These NIH grants are gateways to the development of an independent investigative career, often funded through the NIH R01 mechanism.

Analyzing the outcomes of FAER Mentored Research Training Grants is important. Over the next several years, FAER plans to consolidate this data and provide an analysis of how FAER specifically and academic anesthesiology in general are doing in the development of independent investigators.

The model for this analysis is a report on the NIH K-awards called "National Institutes of Health: Individual Mentored Career Development Awards Program" released August 2011.

In this article, I share some information from the NIH report, as well as some of the data on 2011 NIH funding that has been

made available on the Blue Ridge Institute for Medical Research (BRIMR) website.

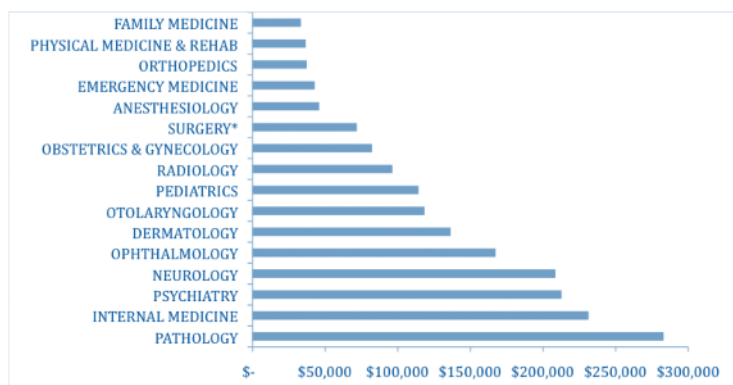
The K-award report from the NIH only covers data up to 2005 (from 2000 for KO1 and K23 awards, and from 1990 for KO8 awards). There are a lot of other interesting data, and it is worthwhile to take a look at it. For example, the median age of a K-award recipient is 37. And although typical KO8/K23 recipients are seven to nine years past their doctoral degree, there is a significant number who are more than 15 years out. It therefore would seem that FAER's policy of MRTG awardees being ≤ 10 years past training is appropriate.

So how are anesthesiologists doing in receiving NIH K-award funding? Over the time period covered by this report, faculty from anesthesiology departments received 1.1 percent of the KO1 awards, 2.7 percent of the KO8 awards and 1.9 percent of the K23 awards. From the Association of American Medical College (AAMC) website for 2002-10, anesthesiology departments had approximately 6 percent of the total medical school clinical



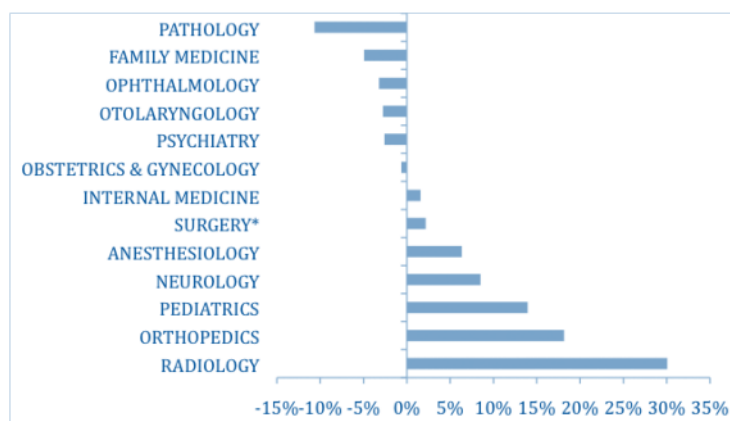
Denham S. Ward, M.D., Ph.D.

Figure 1: Total 2011 NIH Funding Per Senior Faculty Member (2010 AAMC Data)



*Surgery includes urology, plastic surgery and neurosurgery.

Figure 2: Percent Change in NIH Funding Per Senior Faculty, 2004-11



FAER greatly appreciates the support it gets from the ASA, AUA and the academic departments through their membership in FAER. Your help is also needed. Visit www.FAER.org today to learn about the ways you can help FAER to advance medicine through research and education in anesthesiology.

department faculty. For comparison, internal medicine had 29 percent of the faculty and 45 percent of the KO8 awards, while radiology had 7 percent of the faculty but only 1.7 percent of the KO8 awards.

From the data on the BRIMR website, in 2011 there were 219 NIH-funded investigators from anesthesiology departments, with grants ranging from \$742 to \$3,212,623 and mean funding of \$463,744. The investigators are identified individually on the BRIMR website, which includes all types of NIH funding from training grants to RO1s.

Of the 219 funded investigators, 53 have had a grant from FAER. Because this list includes Ph.D. scientists as well as M.D.s, further analysis of the recipients to get the number of M.D.s alone will no doubt raise this percentage.

An additional measure of how well anesthesia competes for NIH funding is the amount of NIH dollars per senior faculty (associate and full professors), again not distinguishing between M.D. and Ph.D. faculty. Figure 1 shows how anesthesiology ranks among other specialties.

It is also interesting to see how this has changed since 2004. Figure 2 shows the percent change in NIH funding per senior faculty member. Anesthesiology has shown a growth,

while many specialties have actually had a decrease. Thus, anesthesiology actually may be making slow progress in increasing NIH funding.

Both the BRIMR website and the NIH K-award evaluation report have a wealth of data, and they are useful for benchmarking the state of biomedical research. Although anesthesiology is clearly not a research-intensive academic specialty, we do receive significant NIH funding at both the mentored and the independent investigator levels.

While I believe FAER plays a significant role in preparing junior anesthesiologists for an investigative career, more outcome data need to be developed to support this claim. We will use this data to improve FAER's awards in support of research within the specialty.

References:

1. http://grants.nih.gov/training/K_Awards_Evaluation_FinalReport_20110901.pdf, accessed on 1/22/2011
2. http://www.brimr.org/NIH_Awards/NIH_Awards.htm, accessed on 1/22/2011.
3. <https://www.aamc.org/data/databook/>, accessed 1/22/2011

Technology Review: Lecture Capture

Larry Chu, M.D.
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Stanford University
Stanford, California

The numbers don't lie. 80 percent of Mount Sinai anesthesia residents, 60 percent of UC Davis anesthesia residents, 77 percent of Yale anesthesia residents and 75 percent of Stanford anesthesia residents have used online lecture recordings during their undergraduate medical training. Data from our 2011 Stanford AIM lab technology surveys, done in collaboration with these institutions, show that use of technology to capture didactics is a significant expectation for today's Millennial anesthesia residents.

How are you meeting the needs and expectations of your residents? If your department isn't already engaged in lecture capture, there are many ways to implement a strategy. First, check to see if your school of medicine already offers technology-equipped classrooms with built-in recording capabilities. You might be fortunate enough to already have institutional support. However, because anesthesia didactics often occur in the hospital and not a school of medicine, many departments must come up with their own lecture-capture solutions.

Turnkey solutions such as Mediacity and Panopto are the easiest because these companies provide a complete packaged

solution for recording and publishing online lectures. These lectures can be viewed online through a website or be downloaded via iTunes to personal media players. Panopto offers the additional advantage of making talks searchable by typing in keywords. Departments with smaller budgets and dedicated technical support may wish to consider screencasting software such as Camtasia Studio. The cost of ongoing technical support can be substantial and should be factored into this approach. To learn more about lecture-capture strategies and find one that works for your institution, please refer to my recent review article:



Larry Chu, M.D.

Learning Management Systems and Lecture Capture in the Medical Academic Environment. Chu, et al. *Int Anesthesiol Clin.* 2010; Summer;48(3):27-51. [PMID 20616636].

AUA 59th Annual Meeting

May 17-19, 2012 • InterContinental Cleveland • Cleveland, Ohio

We are extremely pleased to host the 2012 Association of University Anesthesiologists' Annual Meeting in Cleveland. The Anesthesiology Institute at Cleveland Clinic is proud to host this meeting for the first time, and we look forward to an exciting program.

We welcome all the AUA members to Cleveland, a city with a great tradition for clinical medicine, research and medical education. Cleveland Clinic sponsors the Cleveland Clinic Lerner College of Medicine, a 5 year program designed to create the physician investigators of the future, and one of the newest medical schools in the country. The Clinic sponsors GME training for more than 900 physicians in residency and fellowship programs. The Cleveland Clinic campus is just minutes from University Circle, with Severance Hall (home of the Cleveland Symphony Orchestra), the Museum of Art, the Botanical Gardens, the Museum of Natural History, and historic Cleveland Auto Museum. A few blocks further is the campus of Case Western Reserve University, which includes the Case School of Medicine and University Hospitals of Cleveland. As you can see, medicine is a major part of the life-blood of Cleveland.

The AUA leadership has again created an exciting program, assembling elements of healthcare dynamics, anesthesiology education, and basic science. The EAB will present a panel describing international anesthesiology education, and a panel on performance assessment during anesthesiology residency. The President's Panel will explore the basic science on consciousness, including the controversial topic of intraoperative awareness. The SAB offers oral presentations and poster discussion sessions, where junior faculty and residents mix with senior faculty presenting a wide array of scientific work. The Host

Program is entitled "When Music Sings, the Brain Listens and the Heart Modulates: A Concert-Lecture" and will explore the science of how music stimulates the brain, is created, and can be used therapeutically. The science will be complemented by a performance by a virtuoso pianist, Prisca Benoit. The meeting reception will be Friday night, to allow early departure from Cleveland on Saturday for those who wish to do so. This reception will be held in the world famous Rock and Roll Hall of Fame, where cocktails and a buffet dinner will complement free access to all exhibits in the Rock Hall. There is no better way to come in touch with the origins of rock and roll than a gently stroll through the Rock Hall, and even better- only the AUA guests will be present, promising uncrowded access to all the exhibits.

Great meetings do not just happen. Christine Dionne and her team from the AUA headquarters in Park Ridge, Illinois have made a major commitment to making this a great meeting, handling logistics, challenging scheduling issues and the innumerable critical issues involved in creating a running a meeting of this size. The EAB and SAB have done their usual stellar job of assembling a cutting edge program. The Cleveland Clinic CME office has made positive suggestions, and the leadership of the InterContinental Hotel has planned a warm, comfortable welcome for all AUA attendees. The planning committee gratefully acknowledges the hard work and expertise of all who have contributed to creating this program. We look forward to seeing you in May.

Host Committee:

David L. Brown, M.D.
Andrea Kurz, M.D.
John E. Tetzlaff, M.D.

Jointly sponsored by



Cleveland Clinic

and



AUA

Association of University Anesthesiologists

Hotel Information

InterContinental Cleveland

9801 Carnegie Avenue, Cleveland, Ohio 44106

Phone: (216) 707-4300

Fax: (216) 707-4395

www.InterContinental.com

The InterContinental Cleveland, the site of the AUA 59th Annual Meeting, is a full service luxury hotel that is attached to the Cleveland Clinic Foundation via a walk way. The daily room rate is \$189 for deluxe king/double double plus applicable taxes. This conference rate will be offered three (3) days prior and three (3) days after the official dates of the Annual Meeting, based on availability. The cut-off date to make your hotel reservations at this rate is April 14, 2012. Reservations received after the cut-off date are subject to space and rate availability.

Make your reservations online at: Assn of Univ Anesthesiologists

Reservations can also be made directly with the Hotel Reservations Department at (216) 707-4000 or toll free at (877) 707-8999. Please be sure to identify your- self as an Association of University Anesthesiologists' meeting participant in order to receive the special group rate.

The InterContinental Cleveland is just miles from downtown Cleveland. Transportation to all Cleveland Clinic Campus buildings is complimentary.

Valet and overnight parking are available. AUA has negotiated a rate of \$18.



Host Program

When Music Sings, the Brain Listens and the Heart Modulates: A Concert-Lecture™

Saturday, May 19, 2012, 8:00 a.m. – Noon

Therapeutic properties of music have been intuitively perceived since the dawn of humanity. Today's technological advancements allow scientists and researchers to qualify and quantify the physiological changes that music produces in different body organs. Music perception is a highly complex phenomenon starting with sound waves causing vibration of the tympanic membrane and ending with an elaborate decoding process at the auditory cortex. The brain integrates this input, and other associated inputs, in order to create a musical emotion, which, in turn, modulates basic bodily functions, including cardiovascular responses, breathing, cerebral blood flow and sweat output, to name a few. The series of physiological changes that music can produce in our organism feeds back into the musical

emotion and becomes the basis of the therapeutic properties of this art. Touching and transforming ("haptomizing", from the Greek haptain=touch and make contact) the listener during a live performance enables one to draw a parallel between the artist-audience relationship and the doctor-patient relationship. Through an interactive approach and alternation of scientific talk and live piano performance, Dr. Kamal Chémali and Ms. Prisca Benoit bring a lively demonstration of a collaboration between a physician-scientist and a professional musician aiming at creating awareness of the impact of music on human physiology and triggering new research ideas in the field of the neuroscience of music.



Prisca Benoit
Concert Pianist

Program Schedule

Thursday, May 17, 2012

- 10:00 a.m. - 6:00 p.m. **Registration**
- 1:00 - 1:15 p.m. **Introduction and Welcome to the 59th Annual Meeting**
David L. Brown, M.D., Host Chair
- 1:15 - 1:25 p.m. **SAB Program Introduction**
Marie E. Csete, M.D., Ph.D.
- 1:25 - 2:25 p.m. **From Discovery to Product**
A panel discussion with anesthesiologists experienced in various stages of the product development pipeline.
- **The Academic Perspective: Finding Partners Needed to Bring a Discovery into the Development Pipeline**
Douglas E. Raines, M.D.
 - **The Pharma Perspective: Evaluating the Commercial Potential of a Novel Therapy From an Academic Lab**
Paula Bokesch, M.D.
 - **The Founder's Perspective: Maintaining the Ethical Divide Between Academic and Industry Labs**
Dan E. Berkowitz, M.B.B.Ch.
 - **Funding Opportunities for Start-Ups**
Marie E. Csete, M.D., Ph.D.
 - **The VC Perspective: Evaluating New Products and Expected Returns on Venture Capital Investment**
Speaker TBD
- 2:25 - 2:55 p.m. **ASA President's Update**
John M. Zerwas, M.D., ASA President-Elect
- 2:55 - 3:10 p.m. **Break with Poster Viewing and Discussion**
- 3:10 - 3:25 p.m. **FAER Update**
Denham S. Ward, M.D., Ph.D.
- 3:25 - 4:55 p.m. **AUA President's Panel – The Emergence of Consciousness**
Moderator: George Mashour, M.D.
- **Intraoperative Awareness**
Michael S. Avidan, M.B.B.Ch.
 - **Neural Inertia**
Max B. Kelz, M.D., Ph.D.
 - **Inducing Emergence**
Ken Solt, M.D.
- 5:00 - 6:00 p.m. **AUA Business Meeting**
- 6:00 - 6:30 p.m. **Resident Meet and Greet Reception – InterContinental Hotel**
- 6:30 - 8:30 p.m. **Welcome Reception – InterContinental Hotel**

Friday, May 18, 2012

- 6:30 a.m. - 4:30 p.m. **Registration**
- 7:00 - 8:00 a.m. **Continental Breakfast**
- 8:15 - 9:45 a.m. **EAB Program (Part 1)**
- High Stakes Performance Assessment: During Residency and for Certification**
Moderator: David J. Murray, M.D.
- Performance Assessment: Assuring the Measures are Meaningful**
David J. Murray, M.D.
- Resident Evaluation: What to Measure and How to Use the Measures**
Keith H. Baker, M.D., Ph.D.
- Anesthesiology Certification: Beyond the Multiple Choice Examination**
Cynthia A. Lien, M.D.

Program Schedule

Future Meetings

AUA 60th Annual Meeting

April 4-6, 2013
J.W. Marriott Marquis
Miami, Florida

*Hosted by
Department of Anesthesiology
Perioperative Medicine
and Pain Management
University of Miami
School of Medicine*

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AUA 61st Annual Meeting

April 24-26, 2014
Stanford, California

*Hosted by
Stanford University
School of Medicine*

Friday, May 18, 2012 (cont.)

9:45 – 10:15 a.m.	Moderated Poster Discussion Session
10:15 - 11:45 a.m.	EAB Program (Part 2) Anesthesia Education: Impact on Global Health Moderator: Robert R. Gaiser, M.D. Obstetric Anesthesia: The Kybele Experience Medge D. Owen, M.D. Establishing Trauma Care Training for Low and Middle-Income Countries Maureen McCunn, M.D. Resident Participation in Global Health: Importance, Challenges, and Opportunities Marcel E. Durieux, M.D., Ph.D.
11:45 a.m. - 1:00 p.m.	Luncheon
11:45 a.m. - 1:00 p.m.	EAB, SAB and Presidents' Luncheon
1:00 - 1:10 p.m.	SAB Program Introduction Marie E. Csete, M.D., Ph.D.
1:10 - 2:40 p.m.	SAB Oral Session (Part 1) <ul style="list-style-type: none">- Junior Faculty Presentation (1)- Resident Presentation (1)- Member Presentations (6)
2:40 - 4:15 p.m.	Moderated Poster Discussion Session
4:15 p.m.	Adjournment
6:15 - 10:00 p.m.	Evening Social Event at the Rock and Roll Hall of Fame

Saturday, May 19, 2012

6:30 a.m. - 5:00 p.m.	Registration
7:00 - 8:00 a.m.	Continental Breakfast
8:00 - 8:15 a.m.	Host Program Introductions John E. Tetzlaff, M.D.
8:15 - 9:05 a.m.	Music and the Ear Neil Cherian, M.D.
9:05 - 9:15 a.m.	Question and Answer Session
9:15 - 10:05 a.m.	Music Therapy: Where Music and Medicine Meet Dwyer Conklyn, MM, MT-BC
10:05 - 10:15 a.m.	Question and Answer Session
10:15 - 10:40 a.m.	Break/Poster Viewing and Discussion
10:40 - Noon	When Music Sings the Brain Listens and the Heart Modulates: A Conference-Concert™ Kamal R. Chémali, M.D.; Prisca Benoit
Noon - 1:30 p.m.	Luncheon
Noon - 1:30 p.m.	Resident Luncheon
1:30 - 1:40 p.m.	SAB Session (Part 2) Introduction Marie E. Csete, M.D., Ph.D.
1:30 - 3:00 p.m.	SAB Oral Session (Part 2) <ul style="list-style-type: none">- Junior Faculty Presentation (1)- Resident Presentation (1)- Member Presentations (6)
3:00 - 4:00 p.m.	Moderated Poster Discussion Session
4:00 - 5:00 p.m.	SAB Plenary Session Roger A. Johns, M.D.

The seeds of the FAER Tree don't fall too far away...





AUA

Association of University Anesthesiologists

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