

UPDATE

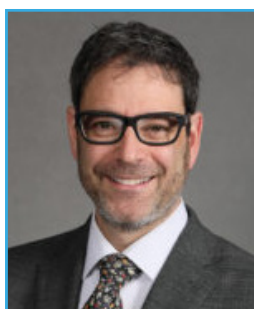
Association of University Anesthesiologists UPDATE | **SPRING 2018**

PRESIDENT'S MESSAGE

AUA LEADERSHIP

The AUA has had another successful year, and on behalf of the AUA council I would like to express sincere gratitude to Jeanine Wiener-Kronish for her effective and inspiring leadership as AUA president over the last two years. Indeed, Jeanine has had a hand in many of our strategic initiatives, and has contributed substantially to the AUA's recent accomplishments, including our recent meeting in Chicago. Luckily, Jeanine will continue to serve on the AUA Council as past president, and we will derive benefit from her leadership experience, her commitment to academic anesthesiology, and her impressive insights. Others who have left their roles on the AUA council are Tom Blanck, who was the past president, and Aman Mahajan, who was a councilor-at-large. We thank Tom and Aman for their years of service as AUA leaders. Aman Mahajan was elected at the business meeting in Chicago to represent the AUA at the Council of Faculty and Academic Societies Representatives.

Following his stint as a meticulous treasurer, Jeff Kirsch was elected AUA secretary. In that role he helped to establish the AUA's associate membership category, and increased



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 School of Medicine
 St. Louis, Missouri

overall AUA membership, including international leaders in anesthesiology. Jeff has now moved into the role of president elect. Bob Pearce is the current AUA treasurer. We have been fortunate to have a person of Bob's caliber in charge of our purse strings. Bob has been thoughtful in his financial management, ably assisted by Tom Cooper and the IARS administrative team. Thanks to membership growth, outstanding meeting attendance, and fiduciary responsibility, the AUA's

balance has been substantially positive, and we have been able to devote resources to mission based activities. Notably, we have committed \$45,000 to the clinical trials initiative and have increased our contribution to FAER this year to \$50,000.

We are pleased to welcome George Mashour and Monica Vavilala to the AUA council. George was elected at the AUA business meeting in Chicago to the position of secretary. After two years in that role, he will take on the mantle of president elect. Monica was elected as a councilor-at-large. Her tenure in that role will be three years. George Mashour is the Bert N. La Du Professor of Anesthesiology Research at the University of Michigan. He is also the Associate Dean for Clinical and

HIGHLIGHTS & RECAPS!

AUA Annual Meeting 2018



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Translational Research, the Director of the Michigan Institute for Clinical & Health Research, and the Director, Center for Consciousness Science at the University of Michigan Medical School, Ann Arbor. Monica Vavilala is the Vice Chair for Strategic Affairs in the Anesthesiology and Pain Medicine Department at the University of Washington in Seattle. She is also a Professor of Pediatrics and the Director of the Harborview Injury Prevention and Research Center at the University of Washington.

Other current members of the AUA council are Michael Gropper and Lena Sun (both councilors-at-large) and Lisa Wise-Faberowski (Communications and Website Committee Chair). Lisa and her committee have embraced and elevated the critical communications functions of the AUA. Ines Koerner has been selected to lead our Scientific Advisory Board and Keith Baker has been chosen to head up our Educational Advisory Board. We are grateful to Ines and Keith for the incredible work that they and their boards do for the AUA. Without the dedication and service of the Scientific Advisory Board (SAB) and the Education Advisor Board (EAB), the AUA would not be able to accomplish its goals. I would also like to thank Y.S. Prakash (past chair SAB), Bob Gaiser (past chair EAB) and their board members for their substantial contributions to the AUA.

THE MEETING


Our alliance with SOCCA and the IARS has continued to bear fruit, with record attendance at this year's annual meeting in Chicago. It is important to reflect that this high attendance included many early stage scholars, associate members and academics in anesthesiology from outside the United States. We welcome the expansion and growing impact of the AUA meeting. Many people have provided feedback regarding the meeting, and apart from concerns about the poster sessions (poor choice of venue), the sentiments have been overwhelmingly positive. Special thanks go to the meeting organizers, including the host anesthesiology departments at Northwestern University Feinberg School of Medicine (Charles W. Hogue) and the University of Chicago, Illinois (Jeffrey L. Apfelbaum and Peter Nagele). The host institution program was inspiring as always, and the social event at the Chicago Stock Exchange Trading Room in the Art Institute of Chicago was magnificent. The EAB under Robert R. Gaiser and the SAB under Y.S. Prakash organized compelling sessions on Thursday and Friday, as well as on the aligned days during the IARS meeting (e.g., the symposium on Mitochondria and Bioenergetics). The quality of the science presented by early stage anesthesiology scholars was heartening and inspiring. Congratulations to all the award winners. Thanks, as well, to Jeanine Wiener-Kronish for inviting world leaders in sepsis across the translational spectrum for a provocative, erudite and entertaining panel. We look forward to our meeting in Montreal next year and are optimistic that we can continue to elevate the scientific and educational content.

STRATEGIC INITIATIVES

I would like to highlight three of our key initiatives. The first is our alliance with the IARS and SOCCA. As hoped, this association has enhanced the meetings of all three societies, and has broadened the reach and influence of the AUA on our anesthesiology and related fields. The concerns regarding the potential loss of the host program have not have been unfounded, since there has been a deep commitment among AUA leadership to retain positive features of our meeting, while expanding our scope and welcoming a broader audience. Going forward, we anticipate closer cooperation, especially regarding scientific posters and high profile scientific symposiums.

Second, I would like to comment on the growing strength of the Early Stage Anesthesiology Scholars (eSAS) initiative. The AUA has been steadfast in supporting eSAS and encouraging its development. This year's eSAS meeting was extremely well organized and the content was pitched perfectly for early stage scholars. The AUA will continue to offer support to eSAS and to provide mentorship for tomorrow's leaders in our field. Congratulations to Julie Freed and Aaron Norris on their election as eSAS presidents. I hope that they continue to lead eSAS boldly and progressively.

The third initiative to showcase was the successful launch of a program for pragmatic clinical trials in the United States. The AUA (in collaboration with the IARS, FAER, SOCCA, eSAS) organized a competition to award three proposals seed funding to develop compelling grant applications for practical trials. Seventeen strong applications were received, and with the help of an experienced and dedicated study section, three winners were selected. I congratulate them on this accomplishment. Visit <https://mpog.org/ctn/> for details on the winning proposals. Doctors Michael Aziz, Frederic (Josh) Billings and Bhiken Naik (on behalf of Randal Blank) presented their proposals to an audience of their peers on May 1 in Chicago. They received feedback from experienced investigators and will use their \$15,000 awards to refine their proposals. Representatives of the National Heart Lung and Blood Institute (Catherine Stoney), the Canadian Perioperative Clinical Trials Group (Eric Jacobsohn), Multicenter Perioperative Outcomes Group (Sachin Kheterpal) and the Duke Clinical Research Institute (Paul Wischmeyer) delivered high quality and powerful presentations at this event. Going forward, the AUA will hopefully continue to partner with the IARS, FAER, SOCCA, eSAS, as well as with clinical trials networks around the world, to increase the quality and participation of anesthesiology in large, pragmatic trials.

Before signing off, I would like to extend special thanks to Tom Cooper, Vivian Abalama, Meghan Whitbeck and other members of the IARS administrative team for everything they have done to help the AUA as we have grown and made important advances. This administrative team has consistently been organized, professional and committed. They have contributed much to our recent successes. 

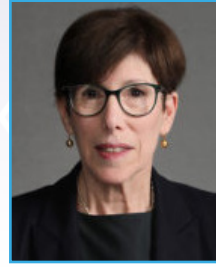
AUA Officers and Councilors-at-Large



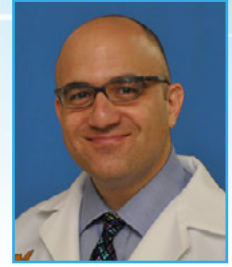
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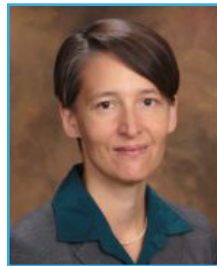
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Chair, Scientific Advisory Board
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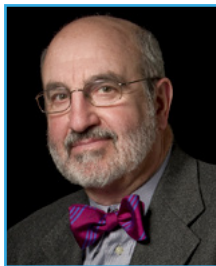


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Aman Mahajan, MD, PhD, FAHA
*Council of Faculty and
Academic Societies
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THANK YOU FOR YOUR SERVICE



Thomas J.J. Blanck, MD, PhD
Formerly: Immediate Past President
New York University School of Medicine
New York, New York



Y.S. Prakash, MD, PhD
Past Chair, Scientific Advisory Board
Mayo Clinic
Rochester, Minnesota



Robert R. Gaiser, MD
Past Chair, Educational Advisory Board
University of Pennsylvania
Philadelphia, Pennsylvania

EDUCATIONAL ADVISORY BOARD

NEW AUA Educational Advisory Board (EAB) Chair



Keith Baker, MD, PhD
Chair, Educational Advisory Board
Massachusetts General Hospital
Boston, Massachusetts

The EAB has been quite fortunate to have Dr. Bob Gaiser as its Chair for the past four years. He has led the EAB with its charge to plan the education program for the Association's Annual Meeting. In addition, he has arranged to have education-related topics in each of the Association's Newsletters. We are indebted to his commitment and superb leadership over these past four years.

Each President of the AUA appoints a Chair of the EAB who then serves for 2 years. This past spring the President, Dr. Wiener-Kronish, appointed Dr. Keith Baker to serve as the EAB Chair for the next two years.

Dr. Baker is currently Vice Chair for Education at the Massachusetts General Hospital. The AUA is pleased to have Dr. Baker as the new Chair of the EAB. 

CALL FOR NOMINATIONS

DEADLINE FOR NOMINATIONS MONDAY, JULY 30

EDUCATION ADVISORY BOARD

The Educational Advisory Board (EAB) is looking for four (4) new members to join its Committee which is composed of 11 members plus the Chair.

The EAB is responsible for planning the educational program for the AUA Annual Meeting and providing content to the AUA Update. Members contribute to this process by advising on topics for the Annual Meeting and the newsletter.

The EAB meets in person each year at the Annual Meeting and throughout the year via conference call.

Members of the EAB serve a three-year term. Those who have served on the EAB in the past and who remain interested are eligible for another 3-year term.

COMMUNICATIONS AND WEBSITE COMMITTEE

The Communications and Website Committee is looking for one (1) new member to join its Committee which is composed of 11 members plus the Newsletter Editor.

The Communications and Website Committee is responsible for production of the *AUA Update* and production and maintenance of the website and other technological communications.

The Committee meets in person each year at the Annual Meeting and throughout the year via conference call.

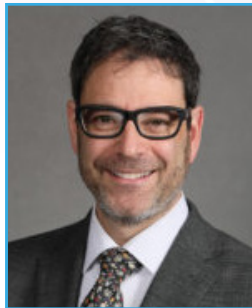
Members serve a three-year term.

If you're interested in volunteering with the AUA by serving on either the EAB or the Communications and Website Committee, send a Letter of Intent and CV to Vivian Abalama at vabalama@iars.org by Monday, July 30. All applicants will be notified by Wednesday, August 15.

CLINICAL RESEARCH CONSORTIUM

Clinical Trials Network

Leaders of academic anesthesiology organizations have recognized that there is a need to conduct large pragmatic trials in order to answer important questions in anesthesiology-related research. Although there are several successful anesthesiology clinical trial networks around the world, there is no collaborative network in the United States. There are several factors that enable anesthesiology researchers today to conduct large and efficient trials, in line with recommendations of the National Institutes of Health.



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- (1) There are highly developed, specialized infrastructures already in place that can provide meaningful support to investigators and increase the likelihood of both successful funding and completion of research projects. Examples of these infrastructures include the Multicenter Perioperative Outcomes Group (www.mpog.org), the Duke Clinical Research Institute (www.dcri.org), and the NIH funded Clinical and Translational Science network.
- (2) With the near universal adoption of electronic health records in the US, it has become possible to conduct trials entirely within the context of routine care. For example clinically relevant outcomes such as respiratory failure, renal failure and delirium can often be reliably ascertained from the EHR. This potentially negates the need for dedicated trial-related visits.
- (3) We have access to multiple national registries with granular data from the HER, as well as information on complications and patient-reported outcomes. This obviates the need for a new, costly infrastructures to track patient outcomes. For anesthesiology related research, the establishment of

MPOG approximately a decade ago was a great service to the field and now provides a valuable resource to clinical and translational scientists.

In an initial attempt to address this important opportunity, a consortium of academic anesthesiology organizations launched an initiative last year to stimulate pragmatic research. This effort was conceptualized and endorsed by organizations, which have as a common goal the advancement of knowledge in anesthesiology and the enhancement of care in perioperative medicine, critical care, pain management, and peri- and post-partum care. These organizations included the Association of University Anesthesiologists (AUA), early stage Anesthesiology scholars (eSAS), Foundation for Anesthesia education and Research (FAER),

International Anesthesia Research society (IARs), and society of Critical Care Anesthesiologists (SOCCA). It was hoped that the pragmatic envisioned trials would (i) foster international collaboration, (ii) leverage big data and precision medicine, (iii) include multi-disciplinary teams, and (iv) adopt innovative and efficient designs.

The AUA Council energized this process by offering three start-up grants of \$15,000 each, which would allow investigators to refine their proposals and compete for grants to pursue an ambitious research project. A call for letters of intent was made towards the end of 2017, and seventeen high quality applications were received. In order to conduct fair and rigorous peer review, a study section of experts was assembled, all of whom generously devoted considerable time and effort to this initiative. Hannah Wunsch and Duminda Wijeyesundera, both at University

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of Toronto, headed up the study section. Other members were Jeanine Winer-Kronish (AUA), Jim Eisenach (FAER), John Butterworth (IARS), Avery Tung (SOCCA), Elizabeth Whitlock (eSAS), Paul Wischmeyer (DCRI) and Tim Houle (statistician). Six finalists were selected, and from these three winners were chosen.

On 1st May 2018, the first meeting of the Clinical Trials Network was held after the AUA, SOCCA and IARS meetings in Chicago. The agenda for this meeting was full and exciting. Kate Stoney from the National Heart Lung and Blood Institute provided valuable information on pragmatic trials from an NIH perspective. Eric Jacobsohn described how Canadian anesthesiology researchers have successfully launched and sustained a clinical trials collaborative. Sachin Kheterpal reported on the impressive growth of MPOG, and announced that MPOG was establishing an Infrastructure for Multicenter Pragmatic Anesthesiology Clinical Trials (IMPACT). With a strong track record of success in observational research and quality improvement through ASPIRE (Anesthesiology Performance Improvement and Reporting Exchange), IMPACT is a logical expansion for MPOG. Paul Wischmeyer from the DCRI delivered an inspiring talk, which included moving accounts of his experiences as a critical ill surgical patient. He passionately conveyed the importance of perioperative rigorous anesthesiology research, and illustrated the many ways that the DCRI can advance this important agenda and assist researchers.

A highlight of the meeting was the announcement of the three successful proposals and discussions around these. The winners with the titles of their proposals were (in no particular order):

1. Michael Aziz, Oregon Health and Science University, Optimized Opioid Management or Usual Treatment to Reduce Persistent Opioid Use Following Surgery (OPT-OUT)
2. Randal Blank, University of Virginia School of Medicine, Individualized Intraoperative Protective Ventilation using an Open Lung Approach with Driving Pressure Limitation
3. Frederic T. (Josh) Billings, Vanderbilt University Medical Center, Intraoperative Normoxia versus Hyperoxia during Maintenance Anesthesia to Reduce Postoperative Complications

Hannah Wunsch and Duminda Wijeyesundera chaired a science garage (grant review boot camp). Interestingly, all three applications proposed to use IMPACT (MPOG) as the logical infrastructure to conduct their research. More information on these projects can be found on the MPOG site: <https://mpog.org/ctn/>

I would like to thank Jeanine Wiener-Kronish for her tremendous efforts in helping to launch this initiative. I also want to thank Hannah Wunsch, Duminda Wijeyesundera as well as all the other members of the study section. And in particular, I am grateful to Vivian Abalama, who is a member of the IARS/AUA/SOCCA administrative team. Without her dedication, professionalism and organization, this initiative would not have been a success. In order to build on these initial achievements, we hope to have a follow-up symposium at next year's AUA/SOCCA/IARS meeting in Montreal. It is likely that we will be showcasing impactful pragmatic trials and having educational presentations from world leaders in clinical and translational research. 

AUA ANNUAL MEETING 2018

EAB Report: Summary of Panels at Annual Meeting

The AUA Annual Meeting occurred on April 26 and 27 in Chicago. The Education Advisory Board presented two panels: “Motivation, Meta-cognition, and Self-Regulation” and “The Science of Longitudinal Assessment.”

The first panel, Motivation, Meta-cognition, and Self-Regulation, had three speakers with the first speaker being Daniel Saddawi-Konefka, M.D., Assistant Professor of Anesthesia, Critical Care, and Pain Medicine at Massachusetts General Hospital. Dr. Saddawi-Konefka is the Program Director for the Core Anesthesiology Residency Program and he spoke on the science of motivation. Motivation is the aspect that moves people to certain behaviors. Motivation is either intrinsic or extrinsic with intrinsic motivation resulting in better outcomes. Extrinsic motivation refers to external rewards such as finances, stature, or material goods. Intrinsic motivation refers to satisfaction and fun. While both forms of motivation will drive behavior, intrinsic motivation produces better learning and creativity. While intrinsic and extrinsic motivation appear to be different, the two intersect and have an impact on motivation. An example would be an interesting job that offers financial bonuses. The fact that the job is interesting reflects intrinsic motivation while the financial bonuses provide the extrinsic motivation. The impact of one on the other was studied when individuals were asked to solve a puzzle. One group was not paid for solving the puzzle while the other group was. The paid group rated solving the puzzle as more interesting as compared to the group who was not paid. However, once the money was removed, interest in the puzzle decreased to a level lower than the group that was not paid. Tangible rewards have an effect on intrinsic motivation, decreasing it. The explanation for this phenomena is the over-justification effect which refers to an interesting activity for which an individual is paid. The individual begins to attribute the interest in the activity to the money and forget the intrinsic interest in the activity. Motivation is primarily based upon self-determination in which there are three basic psychological needs: autonomy (feeling congruous with behavior), competence (feeling



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effective), and relatedness (feeling connected). Understanding these three psychological needs allows one to predict the effect of an act on motivation. An unexpected reward has no effect on autonomy, competence, or relatedness so does not increase motivation. Positive verbal feedback does not affect autonomy, but it does improve competence and relatedness; as such, there is a positive effect on motivation. Means to improve motivation is to focus on the three basic needs. For autonomy, information provided must not be controlling; the perspective of the individual must be sought and the information used; and finally choices should be provided that focus on intrinsic drives. For competence, one should provide meaningful feedback, set the learner up for success, and provide support to achieve competence. For relatedness, one should acknowledge feelings, support individual connectedness, and improve community connectedness.



The second speaker was Avery Tung, M.D., Professor of Anesthesia and Critical Care at the University of Chicago. Dr. Tung is the Quality Chief in the Department of Anesthesia and President of the Society of Critical Care in Anesthesia and spoke on meta-cognition. Meta-cognition refers to an awareness or analysis of one's own learning or thinking process, involving awareness, self-regulation, and memory monitoring. There are two components to meta-cognition: knowledge (knowing

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AUA ANNUAL MEETING 2018

EAB Report: Summary of Panels at Annual Meeting *continued from page 7*

what you know) and regulation (planning, monitoring, and evaluating). Understanding these components, it becomes clear that metacognition improves as expertise improves. Failure to check context, hindsight bias, and overconfidence interfere with metacognition. When an individual must make a decision, the decision may be based upon intuitive impression (quick, based upon available data) or based upon one's analytic impression (slow, considers all aspects and consequences). Some decisions must be quick while others must be well-thought. The problem is that many make all decisions too quick while others don't make decisions at all because of over-analysis. Means to avoid making intuitive errors include considering alternatives, seeking feedback, and increasing knowledge. However, making all decisions analytic result in fatigue and consumes limited resources. Decisions must include both intuitive and analytic.

The final speaker for the first panel was William McGaghie, M.D., Professor of Medical Education and Preventive Medicine, Northwestern University. Dr. McGaghie presented self-regulation. Key aspects to self-regulation include recognizing that self-assessments of professional skills are unreliable. To truly evaluate professional skills, reliable assessments must be used. One may improve skills with simulation, which involves self-assessment and retraining. An example of this failure for self-assessment was videos of surgeons performing bariatric surgery. The videos were reviewed by several experts who rated the skills. Those individuals who were evaluated as having lower rated skills were also the surgeons most likely to have higher mortality and complications. This study highlights that clinical skills need to be based on objective measures. Understanding self-regulation requires an understanding of the Dunning Kruger Effect. This psychological principle is a cognitive bias where those of lower ability assume a higher self-ability due to a metacognitive effect of inflated self-assessment. This principle highlights the inability of self-assessment when it comes to clinical skills. Any time an individual is being evaluated, an apprehension occurs; objective data provides feedback for improvement and prevents the concept that it is being used for punishment.



Ann Harman, PhD, Chief Assessment Officer, The American Board of Anesthesiology, Raleigh-Durham, North Carolina

The second panel evaluated the science of longitudinal assessment.

The first speaker was Ann Harman, Ph.D., Chief Assessment Officer of the American Board of Anesthesiology. Dr. Harman discussed knowledge over the continuum. There are several principles that help improve knowledge. The concept of priming is important in acquisition of knowledge. Priming involves asking questions before providing new information as the question prepares the mind of the learner for the new information. Another important point in mastery of knowledge is having the individual assess their confidence in knowledge. In this situation, the learner is asked to evaluate confidence which maintains a focus and accelerates time to mastery. Confidently held misinformation leads to error and injury. The knowledge must be presented over time. In spaced repetition, incorporating increasingly long delays before repeating a question makes the memory of information more durable by interrupting the forgetting curve. Finally, retrieval practice is important in gaining knowledge. In retrieval practice, recalling information from memory strengthens the memory pathway to that information and makes the memory more durable. Other factors that improve acquisition of knowledge is personalization (providing the learner with information that they need) and motivation (insuring that the information is challenging and relevant). The acquisition of knowledge requires frequent and regular assessment which generates reflection and reevaluation. The second speaker was Dr. Jonathan Wanderer, Associate

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AUA ANNUAL MEETING 2018

EAB Report: Summary of Panels at Annual Meeting *continued from page 8*

Professor Vanderbilt University, Medical Director Vanderbilt Anesthesiology and Perioperative Informatics Research Division. Information may be used as a pedagogical tool. To provide an idea of the amount of information available, there are 10,067 tables in EPIC and the Perioperative Data Warehouse has 19,463,550,658 pieces of information. This information may be used by residents to understand their educational needs by summarizing their procedural history, clinical exposure and team management experience. Information may also be used for changing culture by providing data rather than opinion. It allows for the immediate access to information when needed rather than relying on the individual to recall the issue and search for the solution at a later time. Informatics may be used to develop practical management information by providing typical practices of medication and equipment use. The information obtained from informatics maximizes the resident experience by optimizing the situation and providing a tailored experience for the resident.

Dr. Keith Baker, Associate Professor of Anesthesia, Department of Anesthesia, Critical Care and Pain Medicine, Vice-Chair for Education, provided the final presentation for the panel, discussing the effect of time on technical skills. His presentation indicated that after an initial improvement phase, in most cases, technical skills do not automatically improve over time and instead they remain on a plateau. As such, it is fair to conclude that time and experience do not always equate with expertise. Another aspect that interferes with ongoing improvement of a technical skill is overconfidence. Overconfidence can lead to insufficient attention being paid to potential errors, which can thus lead to mistakes. An effective means to improve technical skills is to prioritize to actual or measured performance. This stands in contrast to using time spent performing a skill as the metric of competence. Outcome or mastery-based learning employs deliberate practice, which is designed to improve performance and overcome weaknesses. Technical skill improvement can also be hastened by using spaced practice in which there is

exposure to the skill at intervals as compared to a single long exposure. Ironically, learners prefer a single long exposure as compared to spaced practice even though spaced practice is distinctly more effective. Another means to improve technical skills is sleep. Sleep improves the learning of technical skills more than an equivalent duration of wakefulness. Although time and effort often do improve performance, they are insufficient to achieve an expert level of performance. The achievement of expertise requires time, effort and the active reinvestment of resources into improvement by choosing to engage in deliberate practice. Thus, becoming an expert is an individual choice and not an expected outcome of time and experience.

The EAB is grateful to the speakers for sharing their knowledge and providing the members of the AUA with superb presentations concerning the science behind education.

Daniel Saddawi-Konefka, M.D., Assistant Professor of Anesthesia, Critical Care, and Pain Medicine at Massachusetts General Hospital

Avery Tung, M.D., Professor of Anesthesia and Critical Care at the University of Chicago

William McGaghie, M.D., Professor of Medical Education and Preventive Medicine, Northwestern University.

Ann Harman, Ph.D., Chief Assessment Officer of the American Board of Anesthesiology

Dr. Jonathan Wanderer, Associate Professor Vanderbilt University, Medical Director Vanderbilt Anesthesiology and Perioperative Informatics Research Division

Dr. Keith Baker, Associate Professor of Anesthesia, Department of Anesthesia, Critical Care and Pain Medicine, Vice-Chair for Education



SAB REPORT: JOINT AUA-IARS SYMPOSIUM 2018

Mitochondria and Bioenergetics in Health and Disease: It's Not Just a Power Failure

The 65th AUA Annual Meeting was recently held in Chicago, IL. For the third year, we celebrated the successful alignment of the AUA and the IARS in furthering the science of anesthesiology and perioperative medicine by holding a joint AUA-IARS symposium. This year, the topic was “Mitochondria and Bioenergetics in Health and Disease: It's Not Just a Power Failure”.

Originally derived from ancient aerobic bacteria, mitochondria have their own maternally-inherited DNA (mtDNA) and transcription/translational machineries. The mitochondrial outer membrane is in contact with the cellular cytosol, while the highly folded inner membrane contains oxidative phosphorylation enzyme complexes and the mitochondrial matrix within. Well-known for meeting cellular energy demands via ATP synthesis in the process of metabolizing carbohydrates and fatty acids using oxygen, mitochondria rapidly increase energy production under conditions of cellular stress (spare or bioenergetic respiratory capacity; critical for long-term cell survival). One essential aspect of mitochondrial respiration is generation of reactive oxygen (ROS) that serve physiological functions but are detrimental in excess. Altered metabolism and increased ROS adversely affects other organelles and disrupts cellular homeostasis, requiring defense measures such as the antioxidant enzymes superoxide dismutase, peroxidases and catalase. Mitochondrial ROS can act as signal transducers to trigger expression and/or release of pro-inflammatory cytokines, activate signaling pathways, modulate transcription factors important in redox homeostasis, proliferation/survival, responses to inflammation, protein production, and overall bioenergetics. Importantly, inflammatory mediators and ROS can in turn modulate mitochondrial structure and function, creating a dysfunctional cycle to promote disease pathophysiology.

As the AUA membership realizes, there is now increasing recognition of the relevance of both respiratory and non-



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Chair, AUA Scientific Advisory Board
Professor of Anesthesiology and Physiology;
Chair, Department of Physiology and Biomedical Engineering,
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respiratory mitochondrial function in a variety of diseases relevant to perioperative care. Prominent examples include: 1) central and peripheral nervous system responses to insults such as hypoxia, ischemia/reperfusion, and volatile anesthetics; 2) cardiopulmonary dysfunction in the context of altered oxygen, ischemia/reperfusion, infection and inflammation; 3) gastrointestinal, hepatic, and renal dysfunction with hypoperfusion and sepsis; 4) neuromuscular responses to anesthesia in the context of intrinsic mitochondrial disease; 5) the effect of altered metabolism associated with diabetes, cardiovascular disease and other chronic conditions that are modulated by medications; 6) organ dysfunction with smoking and environmental insults. While it is likely that the mechanisms underlying these many pathophysiological processes vary,

better understanding of how mitochondrial pathways and altered bioenergetics contribute to disease manifestation will be critical for both targeted therapies as well as insights into how to modify perioperative management in individualized vs. population contexts.

The overall goal of this year's joint AUA-IARS symposium was to highlight important questions relating to mitochondria and bioenergetics that impact upon the perioperative environment.



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SAB REPORT: JOINT AUA-IARS SYMPOSIUM 2018

Mitochondria and Bioenergetics in Health and Disease *continued from page 10*

The AUA and IARS are optimal platforms to present these timely topics given that our attendees represent established and emerging leaders in research, education and practice across the bench science to clinical application spectrum. The topic of mitochondria and bioenergetics was also seen as particularly relevant and timely as a focus of the AUA/IARS symposium given that A) although inherent mitochondrial diseases are rare, they have huge perioperative implications, particularly in pediatric anesthesia; B) there is substantial research and clinical focus on the effect of perioperative interventions (including volatile anesthetics) on postoperative outcomes where mitochondria could be a target; C) novel approaches have facilitated focused and nuanced study of mitochondrial structure and function; D) a multitude of medications used by patients for comorbid conditions have the potential to influence the mitochondria and bioenergetics; E) there are now novel therapies targeting mitochondria and metabolism that the perioperative physician should be aware of. Thus, from a research perspective, given many of our colleagues perform studies on mechanisms of disease and/or anesthetic/perioperative drug effects on multiple organ systems of relevance (brain, heart, lung liver, kidney, gut), understanding the roles of altered mitochondrial structure and function as well as bioenergetics mechanisms would help us in improving and individualizing our treatment of patients. Furthermore, given our specialty's focus on patient safety, understanding unintended consequences of our drugs or other interventions, or the medications taken by patients for co-morbid conditions in the context of mitochondria and bioenergetics also becomes relevant.

The Symposium was moderated by me. The speakers (also serving as panelists during the discussion phase) were Douglas Wallace, PhD (University of Pennsylvania), Elizabeth Jonas, MD (Yale University), Douglas L. Rothman, PhD (Yale University) and Paul Spencer Brookes, PhD (University of Rochester)

Dr. Wallace initiated the symposium with a simply superb presentation on mitochondria through evolution, and the contribution of mitochondrial genes to health and disease. Dr. Wallace (a member of the National Academy of Sciences) is a leader in mitochondrial genetics and one of the most highly



Elizabeth L. Whitlock, MD, MSc, Clinical Instructor and T32 Fellow, Department of Anesthesia and Perioperative Care, University of California, San Francisco School of Medicine, San Francisco, California; Co-President, eSAS

cited researchers in this area. He enlightened us regarding how mtDNA plays a role in evolution, normal health, and a range of diseases. He showed us how mitochondrial genes can contribute to normal physiological adaptation in different environs across the world. He delineated how specific mitochondrial genes, and variants within can help explain why certain ethnic populations or inhabitants of regions in extreme climate conditions eat what they do and can tolerate activity (or inactivity) without adverse effects. He then went on to explain how specific mitochondrial genes and variants can contribute to neuropsychiatric disorders. Furthermore, he explained how mitochondrial genes and variants can contribute to volatile anesthetic sensitivity and thus exacerbate cellular metabolic dysfunction in children.

Continuing along the lines of mitochondria in the brain, Dr. Jonas presented her ongoing molecular and cellular work in this area. A neuroscientist/neurologist by training, Dr. Jonas works on mitochondrial metabolism in the brain in the context of stroke neurodegenerative disease, and developmental brain disorders. She focused particularly on the mitochondrial permeability transition pore and the accumulation of a fragment of the anti-apoptotic mitochondrial protein Bcl-xL (deltaN-Bcl-xL) and their contributions to neuronal injury in the context of excitotoxic stimulation such as in seizures or in stroke. She further elucidated the potential contribution of mitochondrial mechanisms in anesthetic induced protection.

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SAB REPORT: JOINT AUA-IARS SYMPOSIUM 2018

Mitochondria and Bioenergetics in Health and Disease *continued from page 11*

While cellular and isolated mitochondrial models have provided much insights into non-canonical roles for mitochondria, visualizing their contributions in vivo is a much bigger challenge. Here, Dr. Rothman is a biomedical engineer and expert in biomedical imaging, with development of MR spectroscopy and MRI methods to image metabolic and neurotransmitter pathways non-invasively in humans and in animal models. Metabolism is central to neuroimaging because it can reveal pathways by which neuronal and glial cells use nutrients to fuel their growth and function. Dr. Rothman provided examples of advanced MRI and MRS methods that measure rates of oxygen use and ATP synthesis inside mitochondria (17O-MRS and 31P-MRS), and 19F-MRS that enables measurement of cytosolic glucose metabolism. Calibrated fMRI that uses contrast generated by deoxyhemoglobin, provides maps of oxygen use that track neuronal firing across brain regions. 13C-MRS was shown as the only noninvasive method of measuring both glutamatergic neurotransmission and cell-specific energetics. He introduced novel MRI contrasts to measure brain pH. Overall, these MR methods highlight our emerging ability to assess brain metabolism to better understand brain disorders and guide diagnosis and treatment.

In the last talk, Dr. Brookes elucidated how mitochondrial

and their signaling pathways can contribute to anesthetic preconditions in the heart. He demonstrated how a variety of model systems (isolated heart mitochondria, Langendorff perfused mouse hearts, isolated adult mouse cardiomyocytes, in-vivo mouse coronary artery occlusion, cardiomyocyte cell culture) could be used to investigate mitochondrial function (respiration, membrane potential, ROS and NO). He focused on the role of mitochondrial K channels in cardioprotection and showed how volatile anesthetics protect the heart against ischemia/reperfusion injury in anesthetic preconditioning with a particular role for the Slo2.1 channel. Slo2 channels also normally regulate mitochondrial metabolism and could play a role in other organ systems such as brain (and thus be protective in the context of excitotoxic injury).

These exciting talks were followed by robust and healthy discussion among the panelists and the audience regarding 1) How to better understand the heterogeneity of mitochondrial structure and function in normal health (including across the age spectrum); 2) How best to integrate the subcellular/molecular data for in vivo application in the context of perioperative medicine. 3) Providing education and training for clinicians in better appreciation of the roles of mitochondria relevant to clinical practice. 

CALL FOR ARTICLES FOR THE SUMMER ISSUE OF AUA UPDATE



If you have an idea for an article, an announcement, or an opinion on a recently published article, please submit your proposal/

article to Dr. Lisa Wise-Faberowski, MD, lwf1212@stanford.edu before Monday, August 27, 2018. If your article is selected for the Summer Issue of Update 2018, we will contact you for editing and formatting.

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AUA ANNUAL MEETING 2018

Host Program Report

The Host Program II of the AUA 2018 Annual Meeting, hosted by the Northwestern University Feinberg School of Medicine and The University of Chicago School of Medicine, and organized by Drs. Jeffrey L Apfelbaum, Peter Nagele, and Charles W Hogue, had three terrific speakers with captivating presentations showcasing the depth and diversity of research efforts at both institutions.

Wendy L Freedman, PhD, the John & Marion Sullivan University Professor of Astronomy & Astrophysics from the University of Chicago, led off the host program with a fascinating talk entitled *“Our Unexpected Universe”*. This entertaining presentation started with a review of our current understanding of the universe, much of it based on the contributions from the Hubble Space Telescope, and then went on to introduce the new Giant Magellan Telescope, currently in construction in the South American Andes, and how this engineering marvel will advance our understanding of the universe. The Hubble Space Telescope changed the perspective of the universe we live in, as it allowed us to look back in time when the first galaxies were forming. The talk was full of interesting detail, such as how the Hubble telescope helped to settle the discussion on the age of our universe and calculated it to be 13.7 billion years. The Hubble Space Telescope advanced our understanding on how the universe is evolving and changing with time. There are 100 billion galaxies in our visible universe,



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M.D., Ph.D.**
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and in each of those galaxies there are 100 billion stars. Hubble helped to calculate how far those galaxies are from us and how fast the universe is expanding. Interestingly, the velocity of galaxies is a function of their distance – the farther the galaxies, the faster they move away from us, a discovery made by Edwin Hubble in 1929. In fact, the Hubble constant measures the current rate at which the universe is expanding. Another startling recent discovery was that most of the matter in the universe is dark matter – a substance which has yet to be fully understood. As good as the Hubble Space Telescope is, it demonstrated that the universe is much greater than we can observe with our current telescopes. Excitingly, the Giant Magellan Telescope (GMT) is currently being built in the Chilean Andes as an international collaborative effort. It will be a massive engineering undertaking: located on a mountain top,

22-stories tall with 7 huge mirrors, each 27-feet in diameter. Strangely, out of all places, the mirrors are being fabricated under the football stadium of University of Arizona. Five of the mirrors have been cast already, and are in the process of being polished. The smoothness of the mirrors is unparalleled, with fluctuations of less than 1/1,000,000 of an inch — such smoothness in the US would mean mountains no larger than couple of inches. The resolution of the GMT will be 10x that of the Hubble Space Telescope and it 20-million times more sensitive than the human eye. As pointed out by Dr. Freedman, if a candle were able to be lit on the moon, the GTM would be able to see it! Dr. Freedman hopes that the scientific adventures with the GMT will start in 2024 when four of the mirrors are expected to be assembled.



Wendy L. Freedman, PhD, John & Marion Sullivan University Professor of Astronomy and Astrophysics, Department of Astronomy and Astrophysics, The University of Chicago Medicine, Chicago, Illinois

The second presentation was by A Vania Apkarian, PhD, Professor of Physiology, Anesthesiology and Physical Medicine and Rehabilitation at Northwestern University Feinberg School of Medicine, entitled *“Brain Mechanisms of Chronic Pain and Novel Therapeutic Opportunities”*. It was a wonderful and thought-provoking journey questioning our current view of what is chronic pain. Dr. Apkarian started by pointing out that chronic pain represents a huge socio-economic problem, with 20% of the word population suffering from it. It is also tightly related to the opioid epidemic that the US is currently facing. Fundamentally,

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AUA ANNUAL MEETING 2018

Host Program Report *continued from page 13*

there are no treatments for chronic pain; there is no management strategy that is any better than any other. In words of Dr. Apkarian, they all equally ineffective due to our incomplete understanding of the science behind chronic pain. The traditional view tries to explain the development and maintenance of chronic pain by the nociceptive circuitry of primary afferents and spinal cord circuits, with the brain passively encoding what is happening in the periphery. Based on this concept, the past efforts to develop chronic pain treatment were focused on peripheral spinal cord targets. Dr. Apkarian then went on to present a series of remarkable brain imaging studies in humans and animals supporting a different view of chronic pain. Here, the brain takes an active role in the process. The key features of this model include 1) characteristics of the brain which determine a propensity for chronic pain; 2) the limbic-emotional circuitry that controls learning, memory and motivation defines the risk for the transition to chronic pain; 3) this circuitry together with injury-related nociceptive signal generates the transitional state which in time creates a 4) new brain state with distinct anatomical and functional properties. In words of Dr. Apkarian: "Chronic pain brain is a state of the brain addicted to nociception." This highly educational, vivid, and enjoyable lecture concluded by pointing out the many new venues to treatment of chronic pain that this model opens.

The final lecture was given by John Rogers, PhD, Louis Simpson and Kimberly Querrey Professor of Materials Science and Engineering, Biomedical Engineering and Neurological Surgery at Northwestern University Feinberg School of Medicine, entitled "*Wireless Skin-Like Sensors of Physiological Status*". It was a truly mesmerizing display of how sophisticated and reformulated electronic technology can interact more intimately and usefully with human body in the context of human health. Dr. Rogers started by pointing out that the currently popular wearable technology is just nothing more but a rigid, heavy, "blocky" piece of electronic equipment loosely coupled to the body with a strap; good for qualitatively measurement of counting the steps or measuring the activity levels, but unable to really provide an interface that could yield clinically meaningful insights that physicians can observe and interpret in a useful way. What is needed is a "skin-like form of electronics", a technology that integrates with the skin in a more profound way: able to follow the movements of the skin, to stretch, and be mechanically imperceptible. Such skin-electronics technology would provide an intimate physical interface that could provide sophisticated measurements of skin health as well as use the skin as a window for measurements of the underlying physiological processes. Dr. Rogers lab developed such technology by "slicing" silicon into extremely thin but stretchable filaments. By combining them with soft elements, his lab was able to create "hard-soft-composite-electronic tattoos", similar to children's temporary tattoos. They



include wireless power harvesting and data transmission with an array of sensors allowing measurement of clinical data, including heart rate, level of hydration, blood pressure, perfusion, temperature, ECG, EEG, EMG, respiratory rate, and many more. He then went on to share two examples how such technology could be used: in the Neonatal ICU, just one of such "skin tattoos" was able to replace the current wire-based monitoring. It was impressive and amazing to see babies without the bulky and movement-limiting wires – just with one small "tattoo" doing all the job while allowing parents to hold their babies without any limitations. The second example was the use of such electronics in adult rehabilitation: here it allowed it to measure speech, swallowing capability, movement of extremities, and sleep quality, thereby providing continuous clinically relevant data on how the patients recover after leaving the hospital, but in a way that is not disruptive. It was breathtaking to see the future of monitoring of clinical vital signs. The future is here, it is wireless, it is small, and it is truly amazing what it can do already.

Overall, the hosts of this year's meeting, The University of Chicago School of Medicine and the Northwestern University Feinberg School of Medicine, combined their strengths to provide a Host Program Session that was highly entertaining, educational, and inspiring. Thank you!

Wendy L Freedman, PhD, the John & Marion Sullivan University Professor of Astronomy & Astrophysics from the University of Chicago

A Vania Apkarian, PhD, Professor of Physiology, Anesthesiology and Physical Medicine and Rehabilitation at Northwestern University Feinberg School of Medicine

John Rogers, PhD, Louis Simpson and Kimberly Querrey Professor of Materials Science and Engineering, Biomedical Engineering and Neurological Surgery at Northwestern University Feinberg School of Medicine



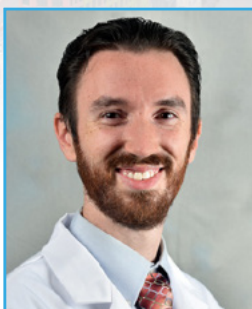
AUA ANNUAL MEETING 2018

Scholars' Program Summary

The 2018 joint AUA/IARS/SOCCA meeting featured the third annual Scholars' Program, a full-day series of sessions directly targeted to the needs of early-career scientists in anesthesiology at any stage, from medical students through junior faculty. Registration for this program nearly doubled the numbers registered for last year's program, with 170 Scholars and senior faculty registered for this third annual Scholars' Program. Under the mentorship of Drs. George Mashour and Michael Avidan, Drs. Julie Freed and Michael Mathis, meeting co-chairs, involved Early-Stage Anesthesiology Scholars (eSAS) members in coordinating programming, inviting speakers, and moderating the sessions.

One of the highlights of the Scholars' Program was the Mentoring and Networking Reception held on Friday evening. Trainees and junior faculty members were matched with more experienced leaders in our field based on the mentors' areas of expertise and the trainees' stated needs. The reception provided a venue for early-career scholars to receive personalized advice and to make new connections with senior investigators. The conversations continued at a networking breakfast held on Saturday morning. The eSAS board would like to thank all the mentors who donated their time and energy to make this event a success.

Drs. Vivianne Tawfik and Elizabeth Whitlock, eSAS co-presidents, opened the Scholars' Day on Saturday morning by welcoming everyone to the 2018 Scholars' Program, and then introducing the motivation behind the creation of eSAS and the Scholars' Day Program. They shared that there has been concern over the past decade for the future of academic anesthesiology, and the purpose of eSAS and the Scholars' Day program is



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to create a community for early career academic anesthesiologists who are passionate about advancing anesthesiology science and committed to pushing the field of anesthesiology into the future. The mission of eSAS is to serve as an academic home for developing scholars in anesthesiology. The goal of eSAS is to support and facilitate the retention and maturation of anesthesiologist-scientists by expanding opportunities for peer and senior mentorship and scientific collaboration, improving the visibility of important research performed by early-career anesthesiologists, and organizing targeted seminars about career and scientific opportunities within and beyond anesthesiology research.



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The opening session, **Moving from Insight to Scientific Premise to Research Program and What This is All About**, was presented by Dr. Max Kelz, David E. Longnecker Associate Professor of Anesthesiology and Critical Care at the University of Pennsylvania. Dr. Kelz encouraged scholars to seize available opportunities and discussed how early experiences have the potential to shape the path of a career. He spoke frankly about planning to disprove one's own hypotheses and urged scholars to seek out excellent mentors. Dr. Kelz left scholars with the inspirational message that the joys of scientific discovery are both achievable and unparalleled.

The morning continued with the panel **Shine Like a Rockstar: Different Paths to Success**. Dr. Paloma Toledo, Assistant Professor of Anesthesiology at Northwestern University, started the panel with the Educational Leadership Path by presenting tangible approaches to being promoted as a clinician-educator, including finding funding agencies that support your research, finding a place to publish all academic projects, maintaining a teaching portfolio, and identifying mentors and collaborators dedicated to your ultimate success. Dr. Peter Nagele, Professor and Chair of Anesthesia and Critical Care at the University of Chicago,

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AUA ANNUAL MEETING 2018

Scholars' Program Summary *continued from page 15*



continued with the Academic Leadership Path and presented fundamental “truths” about academic success, including necessary building blocks for success. He spoke about the need to solve important problems and answer questions that will impact patients and move the field forward. Dr. Laureen Hill, Senior Vice President and Chief Operating Officer of Columbia University Medical Center, described the Organizational Leadership Path. Dr. Hill described the leadership skills, attributes, and expertise necessary to climb to the C-suite. The panelists collectively emphasized the need for focus, time management, avoiding distractions, and identifying great mentors.

Next, scholars enjoyed lunch during the session **Resilience Personified: Transitioning from Trainee to Junior Faculty and Beyond**. Presenting the junior investigator perspective was Dr. Julie Freed, Assistant Professor of Anesthesiology at the Medical College of Wisconsin, and Dr. Ken Solt, Associate Professor of Anaesthesia, Critical Care and Pain Medicine at Massachusetts General Hospital, presented the mid-career investigator perspective. The panelists candidly described the challenges physician scientists encounter when transitioning from trainee to junior faculty, discussed the unique challenges faced by academic anesthesiologists, and reiterated the importance of mentoring that was a common theme throughout the morning. Dr. Freed addressed the great

balancing act of being a physician, a scientist, and a parent. Dr. Solt addressed tough topics including the need to put your family first, and the importance of asking for help when you need it. He also touched on topics such as maximizing training, networking, time management, building a team, and developing your science.

The afternoon began with the panel **Moving Fluidly Across the Translational Spectrum: Current Opioid Crisis**. Junior faculty members with various clinical and research backgrounds shared their work related to the opioid epidemic. First Dr. Jennifer Waljee, Associate Professor of Plastic Surgery at the University of Michigan, discussed how prescriptions for excessive quantities of opioid medications in the postoperative period help to make these drugs available for abuse. Then Dr. Giancarlo Vanini, Assistant Professor of Anesthesiology at the University of Michigan, presented work detailing how caffeine reduces postoperative pain sensitivity in a rat model of sleep loss. Finally, Dr. Afton Hassett, Associate Research Scientist and Clinical Psychologist at the University of Michigan, shared some non-pharmacologic strategies to reduce anxiety and pain in the perioperative setting.

The program continued with the session **Priorities for Developing Researchers: Perspectives from the NIH and IARS**. Dr. Emery Brown, the Warren M. Zapol Professor of Anesthesia at Harvard Medical School, spoke about the importance of finding a supportive mentor, asking questions that will advance the field, and balancing competing academic and personal priorities. Next Dr. Alison Cole, Branch Chief of the Pharmacological and Physiological Sciences Branch in the Division of Pharmacology, Physiology, and Biological Chemistry at the National Institute of General Medical Sciences (NIGMS), shared advice on how to navigate the NIH, including when and how to contact program officials.

The program concluded with **From the Editor's Desk: A No-Nonsense Guide to Successful Publication**, an interactive presentation featuring Dr. Hilary Grocott, editor-in-chief of the Canadian Journal of Anesthesiology, and Dr. Kate Leslie, editorial board member of the British Journal of

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AUA ANNUAL MEETING 2018

Scholars' Program Summary *continued from page 16*



Paloma Toledo, MD, MPH, Assistant Professor of Anesthesiology, Department of Anesthesiology, Northwestern University Feinberg School of Medicine, Chicago, Illinois; Associate Editor, *Anesthesia & Analgesia*

Anaesthesia, Anesthesiology, and Anesthesia & Analgesia. Dr. Grocott, Professor of Anesthesia and Perioperative Medicine at the University of Manitoba, discussed how a successful publication must stem from thoughtful study design and sound study conduct. Dr. Leslie, Head of Research in the Department of Anaesthesia and Pain Management at Royal Melbourne Hospital, shared her perspectives on how to write

with the reviewer in mind and how to effectively respond to reviewer concerns. The panelists fostered discussions among the attendees on topics ranging from study registration to data sharing policies.

We and the other early-career Scholars are tremendously grateful for the enormous amount of support from Drs. Mashour and Avidan, who helped support the Scholars' Day meeting via an R13 mechanism funded through the National Institute of General Medical Sciences (NIGMS) of the NIH. We would also like to thank other senior members of our specialty for their support that was evident at the meeting. We thank the IARS and AUA for their support and are looking forward to working together for Scholars' Day 2019!

eSAS welcomes all early-stage anesthesiology scholars and scientists (from medical/graduate students through junior faculty) to join our group. To join, please visit us at esashq.org.



AUA 2018 Annual Meeting On-Demand Session Videos

WELCOME FROM AUA PRESIDENT AND HOST INSTITUTION CHAIRS

Jeanine P. Wiener-Kronish, MD
Jeffrey L. Apfelbaum, MD
Charles W. Hogue, MD
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PRESIDENT'S PANEL: SEPSIS REVISITED: IMPORTANT UPDATES

Moderator: Jeanine P. Wiener-Kronish, MD

Panelists:

Mervyn Singer, MB BS, MD, FRCP (Lon), FRCP (Edin), FFICM

John C. Alverdy, MD, FACS
Judith Hellman, MD

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(Part of this video is audio only.)

EDUCATIONAL ADVISORY BOARD (EAB)

PROGRAM PANEL I:

Motivation, Metacognition, and Self-Regulation

Moderator: Robert R. Gaiser, MD

Panelists:

Science of Motivation

Daniel Saddawi-Konefka, MD, MBA

Science of Metacognition

Avery Tung, MD, FCCM

Science of Self-Regulation

William C. McGaghie, PhD

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EDUCATIONAL ADVISORY BOARD (EAB)

PROGRAM PANEL II: The

Science of Longitudinal Assessment

Moderator:

Robert R. Gaiser, MD

Panelists:

Information as a

Pedagogical Tool

Jonathan Wanderer, MD

Knowledge Over the Continuum

Ann Harman, PhD

The Effect of Time on Technical Skills

Keith H. Baker, MD, PhD

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HOST PROGRAM PANEL I

Moderators:

Jeffrey L. Apfelbaum, MD, and Charles W. Hogue, MD

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HOST PROGRAM PANEL II

Moderators:

Jeffrey L. Apfelbaum, MD, and Charles W. Hogue, MD

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SCIENTIFIC ADVISORY BOARD (SAB) ORAL SESSION I

Moderator:

Y.S. Prakash, MD, PhD

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SCIENTIFIC ADVISORY BOARD (SAB) ORAL SESSION II

Moderator:

Y.S. Prakash, MD, PhD

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SCIENTIFIC ADVISORY BOARD (SAB) ORAL SESSION III

Moderator:

Y.S. Prakash, MD, PhD

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SCIENTIFIC ADVISORY BOARD (SAB) ORAL SESSION IV

Moderator:

Y.S. Prakash, MD, PhD

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AUA ANNUAL MEETING 2018

Oral Sessions and Posters

Summary of Abstract Submissions and Program: 2018 saw a total of 291 abstracts submitted (>80% increase from 2017 of 159 abstracts). As in previous years, 16 oral presentations including 3 resident travel (including Margaret Wood resident research award) and 4 junior faculty awards (including 2 new awards by Y S Prakash) were given at the meeting. 76 abstracts were eligible for resident travel award (200% increase from 2017), 81 abstracts were eligible for junior travel award (55% increase from 2017). SAB and volunteer members blindly scored submitted abstracts with top 3 resident abstracts selected for awards and oral presentation and top 4 junior faculty awards selected for oral presentation. Additional top ranked abstracts from general membership were selected for oral presentation for a total of 16 10-minute oral presentation. SAB Oral Sessions were distributed between bench research and clinical research. Here are the individuals and topics for the award winners:

JUNIOR FACULTY RESEARCH AWARDS **Eric Sun, MD, PhD:** Concurrent Surgery and Perioperative Outcomes: A Retrospective Analysis from the Multicenter Perioperative Outcomes Group | **Nidia Quillinan, PhD:** Pharmacological Calcium/Calmodulin-dependent Protein Kinase (CaMKII) Inhibition Protects Against Purkinje Cell Damage Following Cardiac Arrest and Cardiopulmonary Resuscitation in Mice

JUNIOR FACULTY TRAVEL AWARD IN PERIOPERATIVE ANESTHESIA **Kevin Emr, MD:** Focused Transthoracic Echocardiography (FoTE) in the Perioperative Period: A Medicine Multicenter Prospective Study

JUNIOR FACULTY TRAVEL AWARD IN PEDIATRIC ANESTHESIA **Lisa Eisler, MD:** Unplanned Postoperative Intubation in Infant and Neonatal Surgical Patients: Predictors and Associated Mortality

MARGARET WOOD RESIDENT RESEARCH AWARD **Elizabeth L. Whitlock, MD, MSc:** Derivation, Validation, and Sustained Performance of a Hospital-Wide Elective Surgery Delirium Risk Tool (AWOL-S)

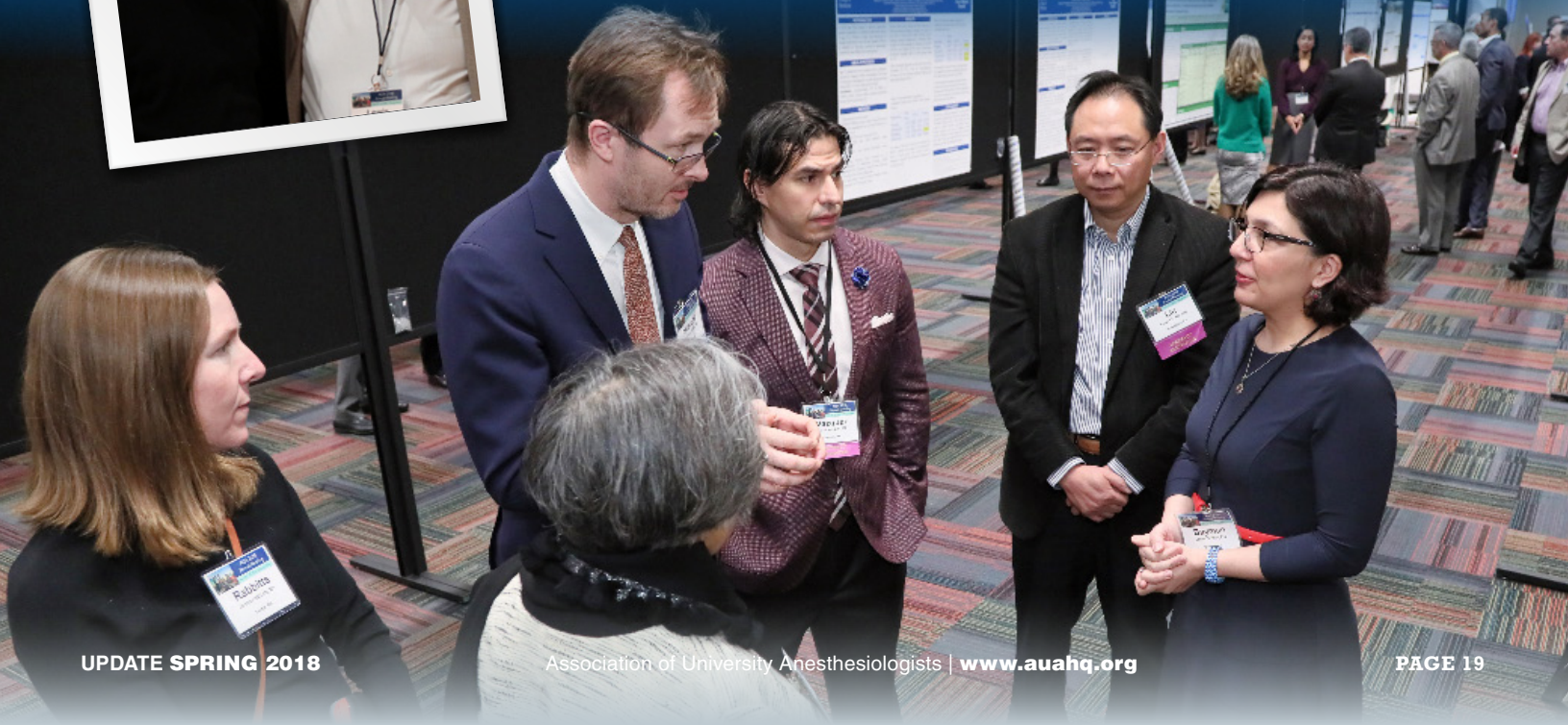
RESIDENT TRAVEL AWARD **Andrew Suen, MD:** Extracellular miRNAs and Innate Immune Activation Following Polytraumatic Injury in Mice | **Andrew Slupe, MD, PhD:** The Pro-Apoptotic Protein BAX is Necessary for Neuron Death Associated with Exposure to Isoflurane General Anesthesia in a Neonatal Mouse Model





More photos from the AUA Annual Meeting here!

AUA Annual Meeting 2018





More photos from the AUA Annual Meeting here!

AUA Annual Meeting 2018



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School of Medicine
Pittsburgh, Pennsylvania

AUA CALL FOR MEMBER NOMINATIONS: NEW ONLINE NOMINATIONS FORM SUBMIT CANDIDATES TO AUA BY SEPTEMBER 15!

QUALIFICATION FOR MEMBERSHIP:

ACTIVE MEMBERSHIP:

- An individual who occupies and has occupied a faculty position in anesthesiology in a medical school or its affiliated teaching hospital for at least twenty-four months, following completion of residency training in anesthesiology; or
- An individual whose work as an anesthesiologist, teacher, or investigator has demonstrated success in academic anesthesia or an individual who has shown a continued productive interest in and contribution to academic anesthesia.

AFFILIATE MEMBERSHIP:

- An individual who has made distinguished contributions to academic anesthesiology, but does not have a primary faculty appointment.

ASSOCIATE MEMBERSHIP:

- An individual who holds a faculty position in anesthesiology in a medical school or its affiliate teaching hospital and who has been approved for funding for a K or R-Type Grant from NIH, FAER, AHA, APSF, IARS, or non-U.S. equivalents.
- Must be nominated by a department chair.

NOMINATIONS FOR AUA MEMBERSHIP ACCEPTED ONLINE!

Steps to nominate a member using the online form:

1. Review the [AUA Nominations Guidelines](#) prior to submitting a nomination.
2. Write nomination letter and obtain nominee CV.
3. If nominating an Associate Member, obtain Current Research Funding information.
4. Enter the nominee information into the [AUA Nominations Form](#) and upload nomination letter and nominee CV.

NOTE: We are no longer accepting nominations via email to ensure we capture accurate information.

International nominees are welcome for all three membership types. To learn more about the nomination requirements, please see the [AUA Member Nominations Guidelines](#).

For questions or concerns, email Vivian Abalama, CAE at vabalama@iars.org