Association of University Anesthesiologists UPDATE | 2023 | Summer Issue

PRESIDENT'S MESSAGE Honoring Our Tradition While Embracing Change

As has been evident in both word and deed, the AUA has evolved from a purely honorific society to one that is increasingly active in contributing to academic anesthesiology. In other words, we no longer just recognize excellence, we also promote it. Our recent initiatives such as the academic speaker exchange, mentorship program, or survey and national webinar on sexual harassment are just a few examples of an increasing presence in the field. However, that increasing presence has required an expanded infrastructure that has grown beyond the current resources of our partnership with the International Anesthesia Research Society (IARS). After collaborative discussion and reflection, it has become clear that our two organizations must shift to independent entities, while being steadfastly committed and unified in our goal to advance academic anesthesiology. The coming year will thus be a time of transition, including a departure from the combined annual meeting as well as the establishment of a new management



George A. Mashour, MD, PhD *President, AUA* Robert B. Sweet Professor & Chair, Department of Anesthesiology, University of Michigan Medical School Ann Arbor, MI

structure. To be effective in this new direction, we will need our members' insight, input, and support (and perhaps a bit of patience) more than ever. There will be challenges ahead but also an exciting opportunity to return to our roots as an independent organization with a university-based meeting, while still embracing the positive strategic change with which we are currently engaged. I look forward to working with our AUA leadership team, AUA members, and IARS colleagues to ensure a smooth and thoughtful journey as we both honor our AUA roots while shaping a new future for an organization and field that means so much to so many.

ANNUAL MEETING MARCH 22 – 24, 2024 Washington University

Washington University School of Medicine in St. Louis

SAVE THE DATE

AUA 2024

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A Message from AUA's President about **AUA's 2024 ANNUAL MEETING**

MARCH 22 – 24, 2024 Washington University School of Medicine in St. Louis



Learn more about AUA's 2024 Annual Meeting from AUA President, George Mashour, MD, PhD We will share more news about the AUA 2024 Annual Meeting as it becomes available



Association of University Anesthesiologists PLEASE JOIN US: Tuesday, July 11 | 5:30 pm ET **FAILURE: THE DARK MATTER OF AN ACADEMIC CAREER**



GUEST SPEAKER George Mashour, MD, PhD President, AUA

Register Now for this Important Discussion AUA Associate Members are Encouraged to Attend



EAB REPORT Annual Meeting 2023

This year's AUA meeting was a fantastic compilation of various activities for the academic anesthesiologist and included panels on different topics of interest, posters, and oral presentations by award winners. The Educational Advisory Board (EAB) had a significant presence at the AUA meeting. They hosted two 60-minute panels on topics that were very relevant and applicable to those who teach and train residents, fellows and faculty.

The first panel was presented on day one of the meeting and titled "Reaching the Peak: Innovating Education Models Using Deliberate Practice for Skill Acquisition." Dr. Teresa Mulaikal moderated this panel and introduced the topic

and the speakers: Drs. Heather Ballard and John Mitchell. Dr. Ballard spoke about mastery-based learning and deliberate practice through coaching simulation and reflection. Dr. Mitchell spoke about motion sensing. Dr. Mitchell pointed out that applications and measurement were the twin learning peaks, and technology was the bridge between these two. He further clarified that technology included artificial intelligence based assessment and data visualization. The speakers discussed how immersive virtual reality simulation and timebased metrics could be used for improvements in learning technical skills.

During the business lunch session on day one, awards were presented to outstanding members for their contributions to the AUA. The EAB Education Innovation Award recipient was Dr. Matthew McEvoy of Vanderbilt University Medical Center. AUA President Dr.George Mashour announced the newly appointed members of the EAB: Drs. Debnath Chatterjee, Keith Littlewood, Norah Naughton, and Shobana Rajan.



Shobana Rajan, MD, FASA AUA Educational Advisory Board University of Texas Health Science Center at Houston Houston, TX

The Presidential dinner was held at the Denver Art Museum and made for an evening of networking, collaboration, sightseeing, and great food.

The second panel of the EAB was on day two on the topic of reflective practice. The hour-long panel was moderated by Dr. Jefferey Berger. The speakers were Dr. Richard Blum and Dr. Daniel Saddawi-Konefka. The discussion was about fostering an intrinsic drive to learn, and importance was given to keeping the learner in the driver's seat. The speakers discussed that self-assessment by learners is often unreliable. At the same time, giving and obtaining feedback properly can be very challenging. While feedback needs to be direct, it should not be

blunt or harsh, which can lead to emotions such as anger, embarrassment, guilt, and shame. At the same time, subtle and indirect feedback may lead to unawareness and disregard for the feedback. Using the LEAF technique (learner-engaged analytics of feedback) enhances self-reflection and improves goal-setting effectiveness and learner satisfaction. In the LEAF method, the coach and learner sit together to reflect on the comments, both positive and those intended for growth, and create goals after identifying the opportunities to work on. The second lecture was about reflection and why it mattered in medicine. It described the different stages of reflection and deliberated on the importance of pondering whether an experienced clinician would have done anything differently in a similar situation and how to apply this learning in future medical practice.

Several interested and enthusiastic AUA members attended both panels and raised thoughtful questions, leading to a very interactive discussion.

EDUCATION ADVISORY BOARD WELCOMES FOUR NEW MEMBERS (2023-2026)



Debnath Chatterjee, MD Children's Hospital Colorado / University of Colorado



Keith Littlewood, MD University of Virginia



Norah Naughton, MD, MBA University of Michigan



Shobana Rajan, MD, FASA University of Texas Health Science Center at Houston

Education Advisory Board (EAB) Awards



2023 Education Research Award



2023 EAB Education Innovation Award

Matthew McEvoy, MD Vanderbilt University Medical Center

The EAB Education Innovation Award celebrates and recognizes new and innovative developments in medical education. Impacts may include a policy or programmatic change, a revelation of a pedagogic tool or methodology, increased awareness of an issue, implications for research by other contributors, or a change in thinking among anesthesiology education professionals. Nominations are invited from AUA members and should describe the nominee's contributions and how the innovation contributes to medical education

Visit AUA's EAB Awards page to learn more.

Note: EAB's Education Research Award was not bestowed in 2023

2023 AUA MEMBER NOMINATIONS

Nominations will be accepted from June 12, 2023 to September 24, 2023

Please review the member nomination guidelines prior to completing nomination forms.

Association of University Anesthesiologists

TOWN HALL | 2023

Recording Now Available! PRESENTED JANUARY 30, 2023



Dolores B. Njoku, MD AUA President-Elect Washington University in St. Louis



Zhongcong Xie MD, PhD, FASA AUA Secretary Massachusetts General Hospital

FEATURED ARTICLE Updates to the ERAS Match Process for Anesthesiology Applications

Over the past decade, the average number of applications to Anesthesiology residency programs has climbed to over 65 applications per applicant and over 1400 applications per program. This increase in application numbers has not improved match rates and resulted in application congestion. As a result, programs may filter applications using metrics (such as USMLE Step Scores, clerkship grades, and reputation of medical schools) that may not identify the best residents for their program. A more transparent, equitable, and reliable system for communicating applicant preferences to residency programs is critical.

SUPPLEMENTAL ERAS APPLICATION

In 2020, together with a variety of specialties, programs, medical schools, and advisors, the AAMC developed the supplemental ERAS application. The supplemental application helps applicants share more details about themselves, their experiences, and their preferences with programs in a structured manner. The goal is to encourage holistic review, improve the overall application screening process, and identify applicants whose genuine interest and characteristics align with a program. Anesthesiology as a specialty joined the ERAS supplemental application program in the second year of the pilot in the 2022-2023 application cycle.



Andrea P. Dutoit, MD University of Nebraska Medical Center Omaha, NE



Emily G. Teeter, MD University of North Carolina School of Medicine Chapel Hill, NC

THREE NEW ELEMENTS INTRODUCED TO ERAS APPLICATION

The supplemental application introduced 3 new elements to the ERAS application: program signaling, geographic preference signaling, and identification of meaningful and impactful experiences. Program signaling is a system where applicants can indicate their genuine interest in a program at the time of application. All applicants within a given specialty receive the same number of program signals. Programs can use the signals to discern which applicants are sincerely interested in their program, thus allowing interested applicants to stand out. In the 2022-2023 cycle, Anesthesiology applicants were allowed 5 program signals. In addition to these signals, applicants were given further opportunity to identify their preferences using geographic preference signaling. Each applicant could identify up to 3 (out of a total of 9) geographic divisions identified by the U.S. Census Bureau that they would prefer to receive residency training. Applicants could opt to select geographic preferences, abstain from answering, or indicate that they did not have a geographic preference. The experiences section of the supplemental application was designed to highlight experiences that the applicant finds particularly meaningful or impactful in

their application. Applicants are allowed to identify up to 5 experiences that are most important to their development and goals and briefly describe why.

TIERED SIGNALING

After review of the data and feedback regarding the ERAS supplemental application from applicants, programs, and advisors across 16 different specialties in the 2022-2023 cycle, the supplemental application will be integrated into the

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main ERAS application for the 2023-2024 application cycle. For the upcoming application year, the AACPD (Association of Anesthesiology Core Program Directors) Council utilized feedback and data from the 2022-2023 cycle to change the program signaling. In 2022-2023, applicants each received 5 signals of equal weight. Next year, Anesthesiology applicants will be able to send a total of 15 signals: 5 "gold" to indicate highest interest and 10 "silver" to indicate very high interest. This type of tiered signaling was trialed in 2022-2023 with OB/ Gyn. Geographic preference signaling will remain an option but will be integrated into the ERAS application. All past experiences in the new ERAS application including research, work, and extracurricular activities will now be limited to 10 total (as opposed to unlimited previously). There will remain the opportunity to highlight 3 of the 10 experiences as "meaningful experiences" and describe an impactful experience in the updated ERAS application.

Changes in the 2024 ERAS application are meant to showcase applicant characteristics and to give the applicant a reliable

and equitable approach to demonstrate true preferences in location as well as sincere interest in specific training programs. Additionally, the changes are meant to drive holistic review of sincerely interested applicants for each training program in hopes of improving a successful match for both applicants and programs within the specialty of Anesthesiology.

Research findings from the implementation of the ERAS supplemental application are available on the <u>ERAS website</u>.

Additional resources may be found here:

AAMC / Supplemental ERAS Application Data and Reports

SAAAPM / Changes to the 2023-2024 ERAS Application: Program Signaling, Geographic Preferences, and Experiences Section for ANESTHESIOLOGY Residency Applications



LAB REPORT Highlights from the Women Networking Session: Managing Bias in the Workplace

The Women Networking Session was established in 2020 as a moderated forum open to AUA members and meeting participants. It is designed to build a community of women in academic anesthesiology, to share the professional and personal challenges faced on a career path, and to explore strategic solutions to those challenges. It was held on April 14th and was attended by 40 participants.

The focus of this year's session was "Sexual Harassment in the Workplace". According to the AAMC, 1 in 2 women and 1 in 5 men in anesthesiology have experienced a form of sexual harassment in the workplace. The most common form of sexual harassment is gender

harassment, which is defined as "verbal and nonverbal behaviors that convey hostility, objectification, exclusion, or second-class status about members of one gender."

Moderators:

Jeanine P. Wiener-Kronish, MD Massachusetts General Hospital, Boston, MA

Odmara Barreto Chang, MD, PhD University of California San Francisco, San Francisco, CA

Panelists:

Kathryn E. Glas, MD, MBA University of Arizona, Tucson, Tucson, AZ

Jaleesa A Jackson, MD University of Arkansas for Medical Sciences, Little Rock, AR

Gabriel E. Sarah, MD, MAEd University of California, San Francisco, San Francisco, CA

The session included presentations by Drs. Hastie, Glas, and Jackson, and was moderated by Drs. Barreto-Chang and Wiener-Kronish. Dr. Hastie provided an overview of incidence and impact of gender harassment in academic medicine and in anesthesiology. Dr. Glas reviewed the many facets of gender bias, its manifestation in the workplace, and its impact on women's careers and wellbeing. Dr. Jackson shared a powerful personal testimony on the challenges faced by women at the confluence of race, gender, and ability. Her story also highlighted the healthcare inequities and the impact of bias, prejudice, and racism on health care outcomes.



Maya Jalbout Hastie, MD, EdD Chair, Leadership Advisory Board Columbia University New York, NY The session was then focused on participantsubmitted questions which were discussed by all those in attendance based on their experiences and expertise.

From this enriching conversation, three main themes emerged: how to start the conversation around gender harassment, managing bias, and dealing with impostor syndrome.

STARTING THE CONVERSATION AROUND GENDER HARASSMENT

Women have experienced the resistance within their departments to acknowledge the presence of sexual harassment. Several strategies for

raising awareness and for changing workplace culture were discussed.

- Approach these difficult conversations with an open mind and a willingness to hear opposing opinions. Be willing to engage respectfully and patiently with all members of a group to identify cause for resistance.
- Arguments are more effective when based on data and facts. They can help illustrate the incidence and the impact of harassment and bias.
- Finding allies among colleagues and acting as an ally when possible. Allies in positions of leadership should have the moral courage to take action and address the difficult situations
- Engage all available resources within the department and within the institution. Identifying, recognizing, and enlisting impartial sources of support is key.
- Acknowledging that leaving a toxic work environment may sometimes be the best next step.

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NAVIGATING A BIASED SYSTEM

In addition to sexual harassment, the group recognized the common prevalence of "isms" within our systems, including racism, ageism, and ableism. Individuals with intersecting characteristics and identities may experience more prejudice than others, whether related to race, gender, presence of disability, sexual orientation, or country of origin. Participants shared engaging in "code switching" in these situations, to conform to the expected stereotypes and behaviors. Code switching comes at a personal cognitive and emotional cost. Others noted the conflation between illness and impairment, especially in relation to mental health. The group agreed on the importance of sharing personal stories to normalize our humanity. Finally, the participants emphasized the importance of building systems that are welcoming for everyone, that are

equitable to all their members, and that do not rely on granting of special favors.

DEALING WITH IMPOSTOR SYNDROME

The attendees acknowledged the tendency of women to minimize their achievements, and to doubt their competencies. Strategies for helping others navigate this challenge includes advocating for mentees and junior faculty, showing up as true self as a leader in the workplace, normalizing the feelings of hesitancy, and anchoring in objective past performance. In addition, it's worthwhile recognizing that impostor syndrome is not the result of an individual's struggle. Instead, impostor syndrome is a result of damaging gender stereotypes and a manifestation of an inequitable system.

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AUA Control AUA

BECOME A MENTOR: Develop, Guide, and Support Future Leaders

The AUA has almost reached its goal of 100 mentors! We need your expertise and encourage you to participate in this dynamic new program: <u>sign up now</u>. Learn more about AUA's mentoring program from Drs. Mashour, Njoku, Xie, and Wiener-Kronish: <u>watch their powerful video now</u>. The AUA Mentor Directory will be a community of AUA mentors and sponsors that our associate members will have the opportunity to reach out to for mentorship and sponsorship.



George Mashour, MD, PhD President, AUA University of Michigan Medical School, Ann Arbor Ann Arbor, MI



Dolores B. Njoku, MD President-Elect, AUA Washington University in St. Louis St. Louis, MO



Zhongcong Xie, MD, PhD, FASA Secretary, AUA Massachusetts General Hospital Boston, MA



Jeanine Wiener-Kronish, MD AUA President (2016-2018) Massachusetts General Hospital Boston, MA

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LEADERSHIP ADVISORY BOARD WELCOMES NEW MEMBERS (2023-2026)



Titilopemi Aina, MD, MPH, FASA Texas Children's Hospital



Sujatha Bhandary, MD, FASE, FASA Emory University School of Medicine



Elizabeth Duggan, MD, MA University of Alabama Birmingham



Craig Jabaley, MD Emory University School of Medicine



Allison Lee, MD, MS Columbia University



Yafen Liang, MD UT Health Science Center in Houston



Elizabeth Malinzak, MD, FASA Duke University



William Peruzzi, MD, SM, FCCM Michigan State University



Deborah Rusy, MD, MBA, FASA University of Wisconsin School of Medicine and Public Health



Jonathan Tan, MD, MPH, MBI, FASA, CMQ Keck School of Medicine



Thomas Vetter, MD, MPH, MFA Dell Medical School



Cynthia Wong, MD University of Iowa

Leadership Advisory (LAB) Awards



2023 IDEAL Award Inclusion, Diversity, Equity, Acceptance, and Lea



2023 Mentoring Award

of University

2023 IDEAL Award (Inclusion, Diversity, Equity, Acceptance, and Leadership)

Odinakachukwu Ehie, MD, FASA University of California San Francisco

LAB's IDEAL award recognizes AUA members in recognition of their commitment and leadership to promote diversity, equity, inclusivity, and belonging at the local or national level. A positive impact on healthcare outcomes is the ultimate goal. In addition, tangible impact on diversity and equity metrics of the healthcare workforce such as promotions, recruitment, retention, professional development is sought. Evidence of community service and its impact should be provided when available. Other supporting evidence such as publications, speaking engagements, and committee work are encouraged and will be taken into consideration.

2023 Mentoring Award

Jeanine Wiener-Kronish, MD Massachusetts General Hospital

LAB's Mentoring Award honors AUA members in recognition of their commitment to mentorship and sponsorship of faculty members in anesthesiology. Letter of nomination should describe the details of extent of mentoring and sponsoring activities, and their outcomes for the mentees, such as scholarship, grant funding, promotions, leadership positions. Letters of support from past or current mentees are needed. Evidence of longitudinal mentoring practice is encouraged. In addition, presence of a mentoring chain linking nominee with their mentees, who in turn are mentors should be highlighted when possible.



FEATURED ARTICLE Shifting Paradigms in Leadership: Implications of the Anesthesiology Workforce's Bimodal Age Distribution

The early 1990s saw a shift in national healthcare policy with a focus on primary care and capitated payment models, igniting apprehension about the future of specialized medicine, elective surgery, and anesthesiology. These and other concerns were reflected in the 622 unfilled anesthesiology residency positions in the 1996 Match, and Match trends did not stabilize until the early 2000s (Figure 1). Despite initial concerns, demand for anesthesiologists escalated, resulting in workforce shortfalls that continue to shape academic anesthesiology.



A significant consequence of these past fluctuations is today's bimodal age distribution within the anesthesiology workforce (Figure 2). As of 2022, data from the American Society of Anesthesiologists Center for Workforce Studies unveils two peaks: one cluster of early-career individuals and another nearing retirement, yet a noticeable scarcity of mid-career professionals, with the age distribution's trough occurring at age 53.



Figure 1: Available and Matched Anesthesiology Residency



Craig S. Jabaley, **MD, FCCM** AUA, Leadership Advisory Board Associate Professor of Anesthesiology **Emory University** Atlanta, GA



Elizabeth A. Duggan, MD, MA AUA, Leadership Advisory Board Associate Professor of Anesthesiology University of Alabama at Birmingham Birmingham, AL



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This age maldistribution has most obviously complicated recruitment for chairperson roles but also poses nuanced implications for leadership in academic medicine. The lack of anesthesiologists in their late 40s and 50s has created opportunities for early-career individuals to advance more rapidly in their careers. As a result, there has been a discernible trend, at least subjectively, toward younger individuals assuming major leadership roles. While this shift certainly presents important opportunities, it also carries distinct implications and gives rise to specific challenges that need to be addressed (Table 1).

IMPLICATION	CHALLENGES TO ADDRESS
Mid-career faculty recruitment	A competitive landscape leads to varied access to mid-career faculty across departments
Mentorship and sponsorship	The need for alternative mentorship models due to young leaders' potentially limited access to mid-career mentors
Work-life balance	Balancing personal pressures and major service roles for younger leaders, who face distinct life phase challenges
Burnout	The potential for burnout from early leadership roles due to various contributing factors
Scholarship	Reduced time for personal and programmatic academic development due to early leadership roles
Succession Planning	The need for proactive planning to ensure leadership and operational continuity in the absence of mid-career faculty

While this bimodal age distribution has certainly impacted leadership transitions in academic anesthesiology, its implications are more far-reaching. This unique age distribution influences not only who is leading, but also how leaders carry out their roles amidst diverse age groups. Furthermore, it impacts the dynamics, cooperation, and performance of the broader workforce.

In an unprecedented demographic shift, today's workforce comprises five distinct generations: Traditionalists, Baby Boomers, Generation Xers, Millennials, and Generation Zers. Given this reality, it is essential to understand the intergenerational differences in work attitudes, behaviors, and motivation to shape future leaders effectively.

Generational research is currently predominated by two theoretical camps. The generational cohort theory¹ posits that each generation is molded by the unique historical, political, and technological changes they experience during their formative years. These shared experiences, in turn, influence their collective work attitudes and behaviors. Indeed, small differences have been demonstrated between generations²⁻⁴. However, the empirical evidence supporting significant intergenerational divergence in workplace values is somewhat sparse^{5,6}, lending credibility to the alternative camp: the lifestyle development perspective^{7,8}. This theory proposes that individual beliefs and attitudes evolve more due to personal life events—such as early childhood dynamics, career changes, and relationship experiences—than to generational factors.

Amid rapid workplace evolution and emerging technologies, organizations must leverage the rich diversity of knowledge and experience found within their multi-generational workforces. However, they must also exercise caution to avoid categorizing workers purely by birth year, as this risks engendering generational stereotypes or, even worse, fostering workplace discrimination. Given the scant evidence of marked generational differences, the National Academies of Science, Engineering, and Medicine undertook a rigorous review of the literature, resulting in key recommendations for managing a

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multigenerational workplace⁹. These guidelines echo findings in organizational psychology and leadership literature¹⁰⁻¹⁴ that can inform strategies for building effective intergenerational leaders:

- Inclusive leadership representation, encompassing a broad array of experiences, cultures, educational backgrounds, and personal attributes⁹.
- Fostering open knowledge exchange and diverse perspectives, empowering leaders of all generations to provide constructive criticism and engage in decision-making^{9,13}.
- Acknowledging and discussing varying expectations of leadership across individuals, not generational cohorts. These insights should inform leadership development programs, fostering a range of leadership values, behaviors, and skills¹⁰.
- Recognizing that motivation is more individual-centric than cohort-centric. Development plans that account for career progression preferences, networking and collaboration needs, and task interests are more effective¹².
- Providing formal leadership development opportunities throughout an individual's career, supporting continuous skill acquisition^{9,11}.
- Debunking myths and stereotypes by highlighting generational commonalities, promoting diverse communication styles and fostering collaborative relationships within mixed-generation teams¹³.
- Offering engaging and varied work activities, increasingly valued across all generations¹⁴.
- Supporting leaders through their lifecycle by providing job flexibility, autonomy, and promoting work-life balance, thereby encouraging career progression at all stages^{9,11,14}.

Recognizing the unique challenges and opportunities presented by the bimodal age distribution in the anesthesiology workforce, and the broader generational mix in the workplace, is not just a matter of academic interest but a practical necessity. Acknowledging and confronting the challenges unique to younger individuals serving in major leadership capacities is one such necessity. Creating an environment that fosters growth, mentorship, and professional development for all, while avoiding the pitfalls of generational stereotyping and discrimination, is an important step. The future of academic anesthesiology will be shaped not just by our collective technical and scientific expertise, but also by our ability to learn from each other across generational divides, harnessing our diverse experiences, perspectives, and skills to build a stronger, more adaptable, and more inclusive profession. Our ability to meet these challenges today-both for our leaders and the broader workforce-will determine the health of our discipline for generations to come.

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MEMBERSHIP ENGAGEMENT ADVISORY BOARD (MEB)

It gives us great pleasure, as members and Co-chairs of the Association of University of Anesthesiologists (AUA) <u>Membership Engagement Advisory Board (MEB)</u>, to introduce our committee to the AUA. The MEB has several initiatives to meet the goals of the latest inaugural board of the AUA. After input from the AUA council, several of you as members, and our own group meetings, we have identified the following goals for the committee:

SUPPORT THE TRANSITION FROM ASSOCIATE AUA MEMBER TO FULL MEMBER STATUS

The creation of the Associate membership category has served our academic community well. We have now identified many of our future leaders. These members need our support to develop them into the leaders they hope to be. We believe that engagement from the full members to serve as mentors serves this purpose best. We also believe that hearing the needs from the Associate members is critical. This effort is being led by MEB member, Dr. Maria Bustillo.

REVIEW ELIGIBILITY CRITERIA FOR AUA MEMBERSHIP

We have created a taskforce to review our published membership criteria. We aim to make recommendations to the AUA council for changes to consider as well as potential feedback to anesthesiologists who do not yet meet the eligibility criteria. This effort is being led by MEB member, Dr. Keith Vogt.

INCREASE OUTREACH TO SOLICIT NEW MEMBERS

We believe that there are accomplished academic anesthesiologists in departments not well represented in the AUA. It would be useful to reach out to academic chairs to solicit their accomplished faculty for potential AUA membership. MEB co-chairs, Drs. Armstead and Aziz will lead this effort by highlighting to the targeted academic anesthesiology shares the value of AUA membership.

In addition, MEB members will encourage all active members to nominate individuals who meet membership criteria in academic anesthesiology departments that have AUA members. As a reminder, we would like to emphasize that the second round of member nominations runs from June 12 to September 24, 2023.

Finally, the MEB is excited to announce the establishment of MEB awards which will address three levels of membership support and activity. The new awards will be announced and awarded at the Annual Meeting each year. The three new awards are:

LIFETIME ACHIEVEMENT AWARD

The AUA Lifetime Achievement Award is the highest and most prestigious award given to a member of the organization recognized by the broader academic anesthesia community as a significant leader in the academic anesthesiology profession. Selection for this honor recognizes an individual's outstanding and sustained contributions to the academic anesthesia profession and AUA, as well as exemplary professional practice and leadership.

ACTIVE MEMBER OF THE YEAR AWARD

The AUA Member of the Year Award is given in recognition of an active member for their commitment to the advancement of academic anesthesiology and their dedication to developing scholars, educators, practitioners, and the next generation of leaders in academic anesthesiology.

RISING STAR — ASSOCIATE MEMBER OF THE YEAR AWARD

AUA is committed to cultivating the next generation of our profession. AUA's Rising Star — Associate Member of the Year Award was established to identify the next generation of leadership in academic anesthesiology. It is designed to recognize

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Valerie E. Armstead, MD, DABA, FASA AUA, Co-chair, Membership Engagement Advisory Board Professor of Anesthesiology, Clinician Educator Department of Anesthesiology Temple University Lewis Katz School of Medicine Philadelphia, PA



Michael Aziz, MD AUA, Co-chair, Membership Engagement Advisory Board Professor & Vice Chair for Clinical Affairs Department of Anesthesiology & Perioperative Medicine Oregon Health & Science University Portland, OR

Membership Engagement Advisory Board (MEB) continued from page 14

associate members who have already made an impact on the profession and have demonstrated their ability to lead the next generation of academic anesthesiologists.

Any member of the AUA can submit the name of individuals for consideration for these awards. Members are also encouraged to self-nominate. Applications will be open from September 29, 2023 to December 31, 2023 at 11:59 pm PT. Visit AUA's Membership Engagement Advisory Board Member Awards page for more information.

Based on this report, we hope that the goals of the MEB, in service to AUA and its members, will be supported by collaboration with other committees / Boards and realized with great enthusiasm.

MEMBERSHIP ENGAGEMENT ADVISORY BOARD (MEB) MEMBERS (2023-2026)



CO-CHAIR Valerie Armstead, MD, DABA Temple University Health System



Veronica Carullo, MD, FASA, FAAP University of Mississippi Medical Center



Maunak Rana, MD University of Chicago



CO-CHAIR Michael Aziz, MD Oregon Health & Science University



Richard Moon, MD Duke University



Teeda Pinyavat, MD Columbia University



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SAB REPORT Asking Questions and Searching for Answers: My Journey as an Aspiring Anesthesiologist-Scientist

"The art and science of asking questions is the source of all human knowledge."

These words from the writer Thomas Berger (no relation to me) nicely capture my views on scientific research. Although we teach our residents at length about pharmacology, physiology, and other relevant topics, I believe the most important things to notice as an aspiring perioperative researcher are the things we do not yet know, and the things we do not yet understand, about the practice of anesthesiology.

For me, one major question stood out as I finished anesthesiology residency and a faculty fellow year at Duke: there were some older patients whose frontal EEG waveforms suggested that their brain was deeply anesthetized, even when they had received only tiny anesthetic doses (such as MAC-awake inhaled anesthetic doses). It was an open question why this happened and what it meant; nothing in the Anesthesiology textbooks I read as a resident could explain this phenomenon.

I then joined the Duke faculty in 2014 with this question in mind, and was fortunate to have many discussions about this and other related topics with Drs. Michael "Luke" James, Mark Newman, Joseph P. Mathew, and the late David S. Warner—then our vice chair for research. It seemed intuitively obvious to me that there must be something wrong with the brains of patients who showed deep EEG signatures at low anesthetic doses. To investigate this, we began to study the relationship between this brain EEG response pattern (to anesthetics) and postoperative delirium. Together with Dr. Stacie Deiner (then at Mount Sinai, now at Dartmouth), we found this pattern (of deeply suppressed EEG waveforms in response to small anesthetic doses) was independently associated with a ~4-fold increased risk of postoperative delirium among older adults.

This result was fascinating and supported our intuition that there must be something wrong with the brains of patients



Miles Berger, MD, PhD Associate Professor, Duke Anesthesiology Department Associate Biomarker Core Leader, Duke/UNC Alzheimer's Disease Research Center Senior Fellow, Duke Center for the Study of Aging & Human Development Duke University Medical Center Durham, NC who showed this EEG response pattern to anesthetics. Yet, it left open the question of <u>why</u> some patients' brains displayed this EEG response pattern. We are currently investigating this by asking the question: to what extent does preclinical/prodromal (ie not yet diagnosed) neurodegenerative or neurovascular disease pathology predispose patients to show this low brain anesthetic resistance pattern? We are grateful for an NIH R01 grant (AG073598) that started last year and which is funding our work in this area.

My team's second research question focuses on how *APOE4*, the most common genetic risk factor for late onset Alzheimer's disease (AD), damages the brain. We are testing the hypothesis that *APOE4* damages the brain starting in young adulthood (earlier than previously thought) by activating complement. We started to study this topic during the first year of Covid19, when our prospective study enrollment was shut down,

by analyzing publically available proteomic data from the Alzheimer's Disease Neuroimaging Initiative (ADNI). In this ADNI data set, we surprisingly found that the *APOE4* allele itself, independent of clinical diagnosis, was associated with lower CSF levels of CRP (a complement activator) and every complement cascade protein — a potential indicator that these proteins were being activated and degraded. We've been fortunate to obtain additional NIH funding (R01 AG076903) to study this topic, and to more definitively ask: do *APOE4* carriers have increased complement activation throughout adult life, and does this predict future cognitive decline? And, would modulating APOE protein signaling during anesthesia/ surgery block postoperative CSF complement activation and prevent postoperative delirium?

Five key things have helped facilitate this work. First, my department has generously provided 4 days per week of research time with only ~1 clinical day shift per week (plus standard night and weekend call) over the past 9 years; I

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have never been asked to work extra clinical shifts above this commitment. I am grateful to my neuroanesthesiology division chiefs (Drs. David L. McDonagh, Dhanesh Gupta, and now Nicole Guinn) and Drs. Newman and Mathew for this protected research time, which has allowed me to focus on asking (and trying to answer) the research questions mentioned above.

Second, the environment at Duke (both within the anesthesiology department and the entire medical center) has been highly supportive of young clinician-scientists. Soon after I joined the faculty, Duke held an all-day seminar to teach junior faculty how to obtain NIH K grants (ie career development awards), and has held numerous other grant writing seminars, mock grant review panels, and other sessions to help launch junior investigators' research careers.

Third, I've been fortunate to have outstanding mentorship from Dr. Mathew (and Drs. Heather E. Whitson and Harvey J. Cohen from Duke Geriatrics). I've learned a great deal from all three of them: about how to do translational human subjects research, how to write, and how to lead teams and bring people together around common research questions. Fourth, many of my anesthesiology colleagues have joined our research team and have helped do lumbar punctures on our study patients and other items for our studies, and our surgical colleagues (many of whom are also researchers) have been supportive of patients enrolling in our studies as well.

Fifth, I am grateful for the supportive community of young anesthesiologist-scientists that has formed over the last decade, in part through the early Stage Anesthesiology Scholars (eSAS) group that several of us started ~8 years ago. There aren't a ton of anesthesiologists doing research (at least as compared to other specialties), so it was immensely helpful to talk with other junior anesthesiologist-scientists, especially during my first few years on faculty. I can only hope that the efforts of eSAS and organizations like FAER, IARS, AUA, the ASA, and others will similarly help advance the careers of current trainees who share the drive to ask and answer important questions at the center of anesthesiology practice—our ability to improve care for future patients, indeed the future of our field, depends on it.

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SAB REPORT Challenges of the Anesthesiologist-Scientist

Employing an anesthesiologist is often seen as hiring a physician to perform clinical duties by both academic and non-academic institutions. The term "triple threat (educator, clinician, and researcher)," once a milestone for the academic anesthesiologist, has become an antiquated concept, replaced by newly acquired administrative skills that are highly valued by the hospital/ university administrators in selecting academic chairs. Although many successful researchers acquire practical leadership and management skills throughout their careers, obtaining additional degrees in business acumen of anesthesiology, such as a Master of Business Administration (MBA), is one of the strong points of candidates for academic chairpersons. With the changes in leadership positions from clinical/bench researchers to formally MBA-trained anesthesiologists, there is a pressing question of who will lead the field of anesthesiology.

As a result of these lost incentives, there is a declining emphasis on research in anesthesiology. Although there is a comparable number of anesthesiologists with dual degrees in "Doctor of Medicine" and "Philosophy Doctor" in biomedical sciences, only under 10% of these anesthesiologists actively conduct research and become funded. The remaining 90% generally are considered a part of the clinical workforce. A protected research time is usually considered a luxury, and only a small minority of anesthesiologists with extramural funding successfully secure the required time to conduct research. Pressures to produce not only come from the employer, but the peers also exert significant coercion on researchers to spend more time working clinically. The declining interest in pursuing research among anesthesiologists is multifactorial.

There has been only a slight increase in the National Institute of Health (NIH) award success rate from 18% to 22% over the past ten years (2012-2022). The total NIH grant budget increased by \$128 billion; there was only a modest net increase in the number of awards/year to 2380¹. Although the success rate for the traditional NIH awards remains around 20%, there have been increases in the number and the dollar amount of the grants awards for training and translational centers awards, as well as those granted to trainees and mentored applications. General Medicine and its related subspecialties continue to lead the number of successful applications from NIH, similar to the other extramural funding sources. Emergency medicine and family practice are among those specialties where the funding success rate falls below that for anesthesiology. The number of successful applications in anesthesiology is comparable to other subspecialties and general surgery. The total number of newly granted awards from anesthesiologists in 2022 was 246, which has been steady/ lower than in previous years. Seventy-five percent of all awards to anesthesiologists were in the



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"R" series, and the majority of grantees held a PhD degree, while the MD anesthesiologist received more "K" awards². The availability of a mentor was the most critical factor in establishing a "K" award for an MD physician-scientist. Therefore, the loss of seasoned researchers who serve as mentors has an especially large impact on the research workforce. It would be imperative to examine why and how the anesthesiology research workforce has been dwindling in order to explore the potential solutions to retaining and growing it.

REFERENCES

- 1 National Institute of Health NIH. RePORT NIH Databook. NIH.gov; 2023.
- 2 Pagel PS. A Ten-Year Analysis of Recent National Institutes of Health Funding for Anesthesiology Research in United States Medical Schools. J Cardiothorac Vasc Anesth. 2022;36:1844-55.



2023 Annual Meeting AWARD WINNERS

Junior Faculty Perioperative Medicine Research Award



Rectus femoris muscle cross-sectional area measured by ultrasound is associated with postoperative recovery metrics

following deceased-donor kidney transplantation

Nicholas Mendez, MD University of California, San Francisco, San Francisco, CA

Junior Faculty Research Award for Clinical Science



Gut microbiota is associated with postoperative delirium in patients

Laura Zhang, MD, PhD

Massachusetts General Hospital/Harvard Medical School. Boston, MA

Please visit here to review past award winners

Junior Faculty Research Award for Laboratory Science



Ischemic Post-Conditioning Increases Rate of Return of Spontaneous Circulation after Cardiac Arrest in Diabetic Rats

Matthew Barajas, MD

Vanderbilt University Medical Center, Nashville, TN

Top Oral Abstracts



Lung entropic hvsteresis: The concept of retained energy in mechanically ventilated ARDS patients

Aiman M. Suleiman, MD, MSc

Beth Israel Deaconess Medical Center. Boston, MA



The influence of intraoperative opioid administration on postoperative pain and opioid requirements

Laura A. Santa Cruz Mercado, MD Beth Israel Deaconess Medical Center. Boston, MA

The Margaret Wood Resident **Research Award** is awarded to the highest scoring abstract submitted to the AUA Annual Meeting by a resident or fellow.



An immune signature of Surgical Site Infections (SSI), a retrospective study with a novel machine learning pipeline for biomarker identification

Amélie Cambriel, MD Stanford University, Stanford, CA

The Resident Travel Award is awarded to the top scoring abstracts submitted to the AUA Annual Meeting by a resident or fellow.



The causes of hypoxemia and their relative contribution in **COVID-19** respiratory failure: a combined **Multiple Inert Gas Elimination Technique**

and Dual-Energy Computed Tomography study

Mattia Busana. MD

University Medical Center Goettingen, Goettingen, Germany

AUA MEETING HIGHLIGHT Junior Faculty Research Award Winner Laura Zhang

This year's AUA Junior Faculty Research Award winner in the Clinical Science Category was presented to Dr. Yiyang (Laura) Zhang, MD, PhD for her groundbreaking work on the connection between postoperative delirium and changes in the gut microbiome. Dr. Zhang is an Assistant Professor of Anesthesiology at Massachusetts General Hospital and is the PI of a National Institutes of Aging grant on dysbiosis and postoperative delirium. She presented her work, along with other award winners, in a well-attended public lecture on April 13th at the AUA meeting.

Dr. Zhang's team conducted a first-in-class clinical observational study between 2016 and 2020 in which fecal swabs were collected from patients undergoing knee or hip replacement surgery or laminectomy under general or spinal anesthesia. Standard high throughput microbiome 16S rRNA gene sequencing methodology was used, followed by analysis using a Dimensionreduction Algorithm in Small Human-datasets (DASH), which is a novel methodology to extract key signals from gut microbiome data. In the 10% of patients who developed postoperative

delirium, Dr. Zhang found that higher levels Parabacteroides distasonis—a bacterium associated with gut wall health that has a varying role in different diseases—was positively associated with postoperative delirium after adjusting for age

Yiyang (Laura) Zhang, MD, PhD Assistant Professor of Anesthesiology, Massachusetts General Hospital Boston, Massachusetts and sex. This represents the first evidence of a causal relationship between changes in the gut microbiota and postoperative delirium, and thus it holds great promise for further study and potential interventions.

Dr. Zhang commented on her meeting experience for AUA Update:

"This has been an extraordinary experience for me as it marks my first time attending the AUA meeting and being recognized as an award winner will be of great value as I seek to publicize my work and to find collaborators and mentors. It has provided an exceptional platform and opportunity to connect with fellow professionals and establish a valuable network, especially for junior faculty members like me. For example, I met Dr. Jeffrey Berger who kindly extended an invitation to present a talk at George Washington University.

Additionally, I was honored that Dr. Kumar Belani from the University of Minnesota generously provided me with the opportunity to showcase my work in the ASA Monitor.

Also I attended the Women in Academic Anesthesiology Networking Session, which has proven to be tremendously beneficial for me in my professional journey."



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