INTERNATIONAL ANESTHESIA RESEARCH SOCIETY
ANNUAL MEETING 2024

Early Career & Scholars' Track

The Scholars' Program is specifically designed for early-stage anesthesiology scholars and focuses on topics unique to them, such as sharpening skills and best practices, career and publishing advice, and networking. The program also provides an opportunity to network, interact with, and learn from established anesthesiologists. There is a $50 fee to attend this program, which is open to all Annual Meeting registrants.

Saturday, May 18, 2024 - eSAS Scholars' Day – *additional fee to attend*

Establishing an Early-Career Research Program: Reflections from Established Investigators
9:00 am – 10:00 am

The Basics of Building a Basic Science Laboratory
Paul Riegelhaupt, MD, PhD
Weill Cornell Medicine, New York, NY

From Pilot Studies to Leading Larger Clinical Studies: What it Takes to Develop a Clinical Research Program
Rebecca Aslakson, MD
The University of Vermont, Burlington, VT

Enabling Informatics, Health System and Outcomes Research
TBD

Lunch + eSAS Business Meeting
11:00 pm – 12:00 pm

Funding Opportunities from Foundations and NIH
12:00 pm – 1:30 pm

Foundations
Speaker TBD

Navigating NIH Funding Opportunities
Speaker TBD

Succeeding across the Tripartate Mission
2:30 pm – 3:30 pm

Clinical Practice to Inform Latest Research
Kimberley Rengel, MD, MSCI
Vanderbilt University Medical Center, Nashville, TN

Becoming an Effective Educator
Seyed Safavynia, MD, PhD
Weill Cornell Medical Center, New York, NY

Early Career & Scholars' Track

Partnering with Clinical Focused Faulty on Scholarship
Douglas Colquhoun, MB ChB, MPH, MSc
Unviersity of Michigan, Ann Arbor, MI

In addition to the eSAS Scholars' Program, this year the IARS and SOCCA Annual Meeting will have a concurrent Early Career track throughout the meeting. These sessions are included in the general registration fee and open to all Annual Meeting attendees.

Friday, May 17, 2024

Leveraging Translational Neuroscience to Understand Postoperative Neurocognitive Disorders in Humans: Insights from Young Investigators: Co-Sponsored by Early-Stage Anesthesiology Scholars (eSAS)
9:00 am – 10:00 am

Postoperative neurocognitive disorders are the most common postoperative complications in older adults and include both postoperative delirium and postoperative neurocognitive disorder (defined as an objective decline in cognitive testing performance and either a subjective cognitive complaint or functional limitation that extends at least 30 days following surgery). These postoperative neurocognitive disorders are associated with decreased quality of life, cognitive decline 3-5 years after surgery, and increased 1-year postoperative mortality. Strategies to prevent these postoperative neurocognitive disorders are desperately needed, but are limited by our poor understanding of the pathophysiologic mechanisms underlying postoperative delirium and neurocognitive disorder. In recent years, studies in animal models of postoperative cognitive deficits and delirium-like behavior have uncovered potential underlying mechanisms, but it remains unclear to what extent these mechanisms play a role in postoperative neurocognitive disorders in humans.

In this session, three junior anesthesiologist-investigators will present their clinical-translational findings related to postoperative neurocognitive disorders. Each of these clinical-translational human studies were informed by prior translational animal studies. The speakers will discuss the innovative approaches they took to translate findings from animal studies to inform our understanding of postoperative neurocognitive disorders in humans. All of the speakers are currently completing or have recently completed mentored research grants and are members of Early-Stage Anesthesiology Scholars (eSAS). The speakers will also demonstrate how funding and mentorship from within our specialty has enabled them to utilize translational neuroscience approaches and preclinical data to design human clinical-translational studies addressing important clinical problems such as postoperative neurocognitive disorders.

Moderator: *Michael J. Devinney, MD, PhD, Duke University, Durham, NC*

Blood-Brain Barrier Dysfunction in Postoperative Delirium: Translating Findings from Animal Models
Kimberly F. Rengel, MD, MSCI
Vanderbilt University Medical Center, Nashville, TN

Prehabilitation for the Brain: Exploring the Role of Functional Connectivity, Brain Resilience, and Computerized Cognitive Training
Michael J. Devinney, MD
Vanderbilt University Medical Center, Nashville, TN

The Impact of Extracranial Surgery on Functional and Cognitive Outcomes after Traumatic Brain Injury
Christopher J. Roberts, MD, PhD
Medical College of Wisconsin, Milwaukee, WI

Moderated Q&A

Leveraging Multi-Omic Technologies for Precision Anesthesiology: Co-Sponsored by Early-Stage Anesthesiology Scholars (eSAS)
11:00 am – 12:00 pm

This panel focuses on technologies designed to improve our understanding of the genome, transciptome, proteome, interactome, and microbiome and their application to the perioperative period. It is particularly focused on spot-lighting the research of early- and mid-career clinician-investigators. Panelists will discuss the applications of these technologies in their past, present, and future research. Understanding the opportunities and challenges for implementing these technologies in future clinical practice will be underscored. Our panel includes representatives from both a wide variety of career stages and institutions. Furthermore, they each employ a different types of omics technology in their peri-operative research, which will allow for a broad survey of the field and cross-pollination of ideas. The panelists will be able to promote their science, careers, and institutions as the audience will gain insight into the work and careers of these inspiring early-stage investigators.

Moderators: *Joseph Scarpa, MD, PhD, New York Presbyterian Hospital - Weill Cornell Medicine, New York, NY and Saul S. Siller, MD, PhD, Yale School of Medicine, New Haven, CT*

Leveraging Proteomics to Characterize Neuroinflammation and Cognitive Decline
Miles Berger, MD||PhD
Duke University Medical Center, Durham, NC

Single-Cell Mass Cytometry to Measure the Immune Response to Surgery and Predict Functional Recovery
Brice Gaudilliere, MD, PhD
Stanford University, Stanford, CA

Genomics and Transcriptomics in Cardiac Disease and Cardiovascular Surgery
Jochen D. Muehlschlegel, MD, MMSc, MBA
Johns Hopkins Medicine, Baltimore, MD

Moderated Q&A

Preoperative Fasting - Does One Size Fit All?: Co-Sponsored by Early-Stage Anesthesiology Scholars (eSAS)
2:30 pm – 3:30 pm

Anesthesiologist-driven guidelines on preoperative fasting affect hundreds of millions of patients undergoing elective procedures with or without anesthesia care. Yet, recent evidence and practice trends indicate that our current approach to preoperative fasting is likely harmful in most patients and may not be sufficient to prevent aspiration in most cases (5), including select high-risk cohorts such as patients taking newer diabetes medications. For this session, a team of early-stage anesthesiology scholars with interests in preoperative fasting are being mentored by the Chair of Perioperative Fasting Guidelines Task Force at the European Society of Anesthesiology and Intensive Care. We will critically assess the existing evidence on the

benefits and harm of current preoperative fasting guidelines and review examples of risk-based fasting practice including unrestricted fluids preoperatively. Our panel will explore potential evidence-based modifications to the current preoperative fasting guidelines.

Moderator: *Alexander Nagrebetsky, MD, MSc, Massachusetts General Hospital, Harvard Medical School, Boston, MA*

Harm From Preoperative Fasting? Show Me the Data
Alexander Nagrebetsky, MD, MSc
Massachusetts General Hospital, Harvard Medical School, Boston, MA

Evidence-Based Preoperative Fasting Practice – What Do We Know So Far?
Federico Bilotta, MD, PhD
University of Rome, Sapienza, Rome, Italy

Preoperative Fasting in High-Risk Populations Including Patients on Newer Diabetes Medications
Ying Hui YL. Low, MD
Dartmouth Health, Lebanon, NH

Moderated Q&A

Sunday, May 19, 2024

Mock Study Section - An Interactive Panel: Co-Sponsored by Early-Stage Anesthesiology Scholars (eSAS)
9:00 am – 10:00 am

Early career investigators may not understand what reviewers look for in grant submission. This can cause them to make critical errors in writing the grant and improperly focus their time on grant components that are not as important. Obtaining experience in how study sections are conducted and how grants are reviewed is a vital learning opportunity for early career investigators to improve future grant proposals and more successfully compete for funding. In this session, we will pair experienced grant reviewers ('Mentors') with investigators new to the process to review actual proposals ('participant reviewers') in the manner of an NIH Study Section. The one-hour session will evaluate two grants - one focused on career development awards (K-series grant applications) and one focused on independent researcher awards (R-series grant applications). Three participant reviewers will review each grant, acting in the actual roles of the study section (6 total reviewers).

The audience will have the opportunity to ask the participant reviewers for further information about the grants in the manner of other study section members. We will work closely with an NIH program officer to ensure the panel experience closely matches the realities of study section operations. The speakers listed in this application represent the session organizers, the participant reviewers will be solicited from the eSAS community in the months leading up to the session. An emphasis will be placed on recruitment of junior and underrepresented members of the eSAS community for participation in this session currently working towards applying for external funding. Priority will be given to participant reviewers who have not participated in a previous year's Mock study section. We intend to match eSAS members with mentors working in similar fields outside of their home institutions to maximize opportunities for networking and professional development.

Moderator: *Douglas A. Colquhoun, MB ChB, MPH, MSc, University of Michigan, Ann Arbor, MI*

Douglas A. Colquhoun, MB ChB, MPH, MSc

University of Michigan, Ann Arbor, MI

Kimberly F. Rengel, MD
Vanderbilt University, Nashville, TN

Daniel S. Rubin, MD, MS
University of Chicago, Chicago, IL

Moderated Q&A

Early Career Investigators Rapid-Fire Showcase: Co-Sponsored by Early-Stage Anesthesiology Scholars (eSAS)
11:00 am – 12:00 pm

To highlight research from early-career clinician-investigators in anesthesiology, this panel consists of high yield rapid-fire research presentations that will demonstrate the career paths of these Early-Stage Anesthesiology Scholars (eSAS) members. By including investigators from various institutions and from each career stage (residency, fellowship, and faculty), this panel provides a broad representation of research by early-career clinician-investigators in anesthesiology. Thus, the audience will gain a broad exposure to early-career anesthesiology research, and the speakers will have the opportunity to highlight their work and inspire future collaborations. In order to showcase the work of early career investigators in anesthesiology, this panel will be in a rapid-fire format. This will consist of a moderator and seven panelists. Each panelist will speak for approximately 5 minutes with 2 additional minutes for questions and answers per panelist.

Moderator: *Michael J. Devinney, MD, PhD, Duke University, Durham, NC*

High Fidelity CRISPR Libraries to Interrogate Anesthetic Genetic Susceptibilities in Cancer Metastasis
Alexander R. Perez, MD, PhD
University of California-San Francisco, San Francisco, CA

A Novel Application of Non-Anesthetic Propofol Analogues
E. Railey White, MD, PhD
University of Pennsylvania, Philadelphia, PA

Noradrenergic System in Arousal: From Synapses to Circuits
Li Li, MD, PhD
Seattle Children's Research Institute, Seattle, WA

Identifying, Measuring, and Operationalizing Patient Reported Outcomes After Outpatient Surgery Among Adolescents.
Sydney Brown, MD, PhD
University of Michigan, Ann Arbor, MI

Multi-omics for Precision Anesthesia
Joseph Scarpa, MD, PhD
New York Presbyterian Hospital - Weill Cornell Medicine, New York, NY

The Drug Burden Index Throughout Critical Illness and its Association with Patient Outcomes
Christina Boncyk, MD
Vanderbilt University Medical Center, Nashville, TN

Early Career & Scholars' Track

Perioperative Oxygen Toxicity: The Evidence

Alexander Nagrebetsky, MD, MSc
Massachusetts General Hospital, Harvard School of Medicine, Boston, MA

Moderated Q&A