Neuroscience Panel

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NAWJ
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SETTING THE PACE FOR JUSTICE

The overall objective of the session is to augment awareness of emerging issues in neuroscience among judges, so as to assist them in seeing and dealing with issues related to neuroscience that may arise in the course of cases that come before them. Science and law are intersecting fields, so there is often a need for trustworthy scientific information in legal proceedings, but judges and lawyers usually are not scientists. More specifically, rapid advances in neuroscience and neuro-technologies make it all the more important to familiarize people in the legal field with those developments. AAAS is bringing together experts in how memories form and are recalled by the brain; how the brain changes in adolescence and how that relates to risk-taking and/or the development of executive functions; and how exposure to environmental toxins (e.g., lead) can damage or otherwise adversely affect the brain.

- The Neuroscience of Memory – Dr. M. Yassa, University of California, Irvine
- Adolescence and Brain Development – Dr. N. Chaku, Indiana University
- Environmental Toxins and the Brain – Dr. T. Guilarte, Florida International University

Speakers:

Dr. Natasha Chaku, Assistant Professor, Psychological and Brain Sciences, Indiana University

Dr. Natasha Chaku is an Assistant Professor in the Psychological and Brain Sciences department at Indiana University. She is interested in how puberty (namely, its experience and onset) can set youth on different cognitive and health trajectories. The overall goal of Dr. Chaku's research is to understand "what works – when, and for whom" by developing and using increasingly personalized methods to study adolescent behavior. To investigate these questions, she uses intensive longitudinal assessments (e.g., daily diaries), physiological data collection (e.g., saliva), and behavioral assessments (e.g., neurocognitive testing) alongside secondary data analyses and community-oriented data collection (e.g., youth participatory action research) to better understand youth's lived experiences. Dr. Chaku earned her PhD at Fordham University.

Dr. Tomás R. Guilarte, Professor, Department of Environmental Health Sciences, Florida International University, and Dean, Robert Stempel College of Public Health & Social Work

Dr. Tomás R. Guilarte is Dean of the Robert Stempel College of Public Health & Social Work at Florida International University (FIU), Professor of Environmental Health Sciences (EHS), and directs the Brain, Behavior, and the Environment Program. Prior to FIU, he was the Inaugural Leon Hess Endowed Professor and Chairman of the EHS department at the Mailman SPH at Columbia University and received his PhD in EHS at the Johns Hopkins University Bloomberg School of Public Health where he achieved the rank of Full Professor with tenure.

Dr. Guilarte's research examines the impact of environmental toxicants on neurodevelopmental disorders and neurological disease. He has made seminal discoveries on the molecular and cellular mechanism(s) of heavy metal neurotoxicity. His laboratory pioneered the validation and application of a biomarker of neuroinflammation called Translocator Protein 18 kDa (TSPO) widely used in Positron Emission Tomography imaging of brain disease.

He has received many awards including the Society of Toxicology (SOT) Hispanic Organization of Toxicologists (HOT) *Distinguished Toxicologist Award*, the SOT Metals Specialty Section *Career Achievement Award* and the SOT *Translational Impact Award*. He was inducted into the prestigious *Johns Hopkins University Society of Scholars* and the *Academy of Science, Engineering, and Medicine of Florida*.

Dr. Michael Yassa, Associate Professor, University of California, Irvine, and Director, Center for the Neurobiology of Learning & Memory

Dr. Michael Yassa is a Neuroscience Professor and James L. McGaugh Endowed Chair in the Neurobiology of Learning and Memory at the University of California, Irvine. Since 2016, he has served as director of the world-renowned Center for the Neurobiology of Learning and Memory. His research focuses on how our brains acquire and store memories and how they are used to guide everyday decisions. His lab's work addresses how memories are disrupted in conditions such as Alzheimer's dementia and major depressive disorder. Dr. Yassa received his bachelor's and master's degrees from Johns Hopkins University and his PhD from the University of California, Irvine. He has been awarded over $50 million in research funding including grants from the National Institutes of Health and private foundations. He has authored or co-authored over 120 research articles and his work has been published in top tier academic journals. He has appeared or featured on major news outlets (e.g., BBC, CNN, NPR, *The New York Times*, *The Wall Street Journal*, etc.). Dr. Yassa has received many awards for research, teaching, mentoring, and service excellence. Since 2020, he has also served as Associate Dean of Diversity, Equity, and Inclusion in UCI's School of Biological Sciences.