NATIONAL ACADEMIES Sciences Engineering Medicine

Forum on NEUROSCIENCE and NERVOUS SYSTEM DISORDERS

Exploring Sleep Disturbance in Central Nervous System Disorders: A Workshop

November 2–3, 2022

Planning Committee Biographies

Heather Snyder, PhD (Co-Chair), is vice president, Medical & Scientific Relations at the Alzheimer's Association®. In this role, she oversees Association's funding initiatives that accelerate innovative Alzheimer's research and provide opportunities for the global dementia community to connect and collaborate. Dr. Snyder is responsible for the progress the Association has made in Alzheimer's and dementia research funding. She leads the Association's International Research Grant Program, the vehicle through which the Association funds promising investigations that advance understanding of Alzheimer's and moves the field toward solutions for the global Alzheimer's crisis. As the world's largest nonprofit funder of Alzheimer's research, the Association is currently investing $300 million in more than 900 active best-of-field projects in 45 countries.

Louis Ptáček, MD (Co-Chair), is a professor of neurology at the University of California San Francisco Weill Institute for Neurosciences. He has used the tools of human genetics in the study of patients with an impressive range of human phenotypes. He pioneered the field of "Channelopathies" which encompasses a large group of episodic/electrical disorders of muscle, heart, and brain. Subsequently, his group has done extensive work in characterizing the functional consequences of disease causing mutations. In another line of work motivated by a family with an interesting phenotype, he embarked into the challenging field of behavioral genetics. He and his colleague, Ying-Hui Fu, study the genetics of human sleep phenotypes. Familial advanced sleep phase (FASP), is manifest as a lifelong trait of extremely early sleep times and early morning awakening (1 am – 4 am). Ptáček and Fu have gone on to characterize mutations in a growing list of genes that underlie the phenotype in ~15% of FASP families. Furthermore, they've gone on to model human mutations in Drosophila and mice. In vitro and in vivo experiments focused on regions harboring the human mutations has led to novel insights in fine tuning of circadian period regulation by phosphorylation and other post translational modifications. They have shown an important effect in some of the human sleep mutations in increasing risk for migraine or metabolic disease and further show that Familial natural short sleep mutations are protective for neurodegeneration. He serves on a number editorial boards including Neurogenetics, eLife, and the Journal of Clinical Investigation. He is a member of the

National Academy of Medicine, the American Association of Arts and Sciences, and the National Academy of Science of the USA.

Brian Fiske, PhD, is Co-Chief Scientific Officer for The Michael J. Fox Foundation for Parkinson's Research. He works with a team of professionals to develop and steward an aggressive and innovative strategic vision for accelerating research and drug development for Parkinson's disease. Dr. Fiske earned an undergraduate degree in biology from Texas A&M University and a Ph.D. in Neuroscience from the University of Virginia. After completing postdoctoral research at Columbia University, Brian spent several years as an editor for the scientific journal, Nature Neuroscience, before coming to the Foundation in 2004.

Percy Griffin, PhD, MSc, is director, Scientific Engagement for the Alzheimer's Association®, where he leads efforts to accelerate the organization's scientific agenda through the creation and delivery of ongoing research education. He engages with more than 75 Association chapters across the country, informing staff and the public of scientific initiatives and the organization's crucial role in advancing research to improve the lives of all those facing Alzheimer's and other dementias. As a researcher, Dr. Griffin has led independent translational projects in Parkinson's and Alzheimer's disease focused on protein degradation and neuroimmunology, in addition to research on the role of proteostasis in Parkinson's disease pathogenesis and organic chemistry synthesis. He is a co-author of several papers, including "Circadian clock protein Rev-erba regulates neuroinflammation," published in the journal Proceedings of the National Academy of Sciences of the United States of America (PNAS).

Frances Jensen, MD, FACP, is Professor of Neurology and Chairman of Neurology at the Perelman School of Medicine, University of Pennsylvania, and Co-Director of Penn Translational Neuroscience Center. She was formerly Professor of Neurology, Harvard Medical School, Director of Translational Neuroscience and senior neurologist at Boston Children's Hospital and Brigham and Women's Hospital. She is a graduate of Cornell Medical College and obtained her neurology residency training at the Harvard Longwood Neurology Residency Program. Her research focuses on mechanisms of epilepsy and stroke, and the mechanistic interaction of epilepsy with other disorders such as autism and dementia, with specific emphasis on elucidating new therapies for clinical trials development. Dr. Jensen received the 2007 Director's Pioneer Award from the NIH to explore the interaction between epileptogenesis and cognitive dysfunction, and was elected as a member of the National Academy

of Medicine in 2015. Dr. Jensen was President of the American Epilepsy Society in 2012 and has served on a number of other leadership boards including the Council for the Society for Neuroscience and the Council at NICHD. She currently serves on the Board of the American Neurological Association, the scientific advisory panel at NIH for the BRAIN Initiative, and on a number of charitable foundations for neuroscience research. She has authored over 150 manuscripts on subjects related to her research and has been continuously funded by NIH since 1987. Dr. Jensen has trained numerous clinical and basic research fellows who now hold independent faculty positions nationally and internationally. Dr. Jensen is a Trustee of the Franklin Institute in Philadelphia and is involved in community outreach for brain research and education. In addition, Dr. Jensen is an advocate for awareness of the adolescent brain development, its unique strengths and vulnerabilities, as well as their impact on medical, social, and educational issues unique to teenagers and young adults, and author of the book "The Teenage Brain", released by Harper Collins in 2015/16, translated and published in over 25 languages worldwide.

Kathleen Merikangas, PhD, is a Distinguished Investigator and Chief of the Genetic Epidemiology Branch in the Intramural Research Program at the National Institute of Mental Health (NIMH), and Adjunct Professor of Epidemiology, and of Mental Health at the Johns Hopkins Bloomberg School of Public Health. She received a bachelor's degree summa cum laude in experimental psychology and music from the University of Notre Dame, a master's degree supported by NIAAA for training in clinical psychiatry, and a Ph.D. in chronic disease epidemiology in the psychiatric epidemiology training program from the University of Pittsburgh School of Public Health. After postdoctoral training in population genetics/genetic epidemiology at the Yale University School of Medicine, she joined the faculty and became a Professor of Epidemiology and Public Health, Psychiatry and Psychology, where she also directed a training and research program in psychiatric/genetic epidemiology. Dr. Merikangas is on the scientific advisory board or council of several national and international programs and she is the Chair of the Scientific Advisory Boards of the Cundill Centre for Child and Youth Depression in Toronto, Canada, and the Child Mind Institute where she is Co-PI of the Heathy Brain Network Study of Youth. She has authored more than 400 scientific publications and has presented lectures throughout the U.S. and in more than 20 countries. Her current research program at the NIMH Intramural Research Program focuses on: (1) population based studies of mental and physical disorders in adults and youth; (2) multigenerational family studies designed to identify the core features and biomarkers of genetic and environmental factors underlying the familial transmission of bipolar spectrum disorders: and (3) the application of mobile technologies to examine patterns of motor activity, mood and sleep in mood disorders and she is leading a collaborative network examining motor activity and health, with a particular focus on mood disorders, the Motor Activity Research Consortium on Health (mMARCH).

Jukka-Pekka "JP" Onnela, PhD, is an Associate Professor of Biostatistics in the Department of Biostatistics at the Harvard T.H. Chan School of Public Health of Harvard University. He is also a Co-Director of the Master's Program in Health Data Science, one of the three data science programs at the university. After completing his doctorate in network science in Finland, he completed a junior research fellowship in the Department of Physics at the University of Oxford, was a Fulbright scholar at Harvard, and a postdoctoral fellow at Harvard Medical School. His main interest is in developing quantitative methods in two areas: statistical network science and digital phenotyping. He received a 2013 NIH Director's New Innovator Award for his digital phenotyping research.

Uma Rao, MBBS, is a professor of psychiatry at the University of California Irvine School of Medicine. She has been involved in mood and substance-related (addictive) disorders research for over 30 years. Her primary areas of interest are adolescent depression, risky behaviors and addictive disorders during the developmental transition from adolescence to emerging adulthood in youth with familial and/or environmental (e.g., early-life adversity) risk. Dr. Rao has extended her research to include physical/medical conditions that frequently co-occur with these disorders, specifically obesity and pain. The emphasis is on racial/ethnic and gender influences for these conditions. Additionally, she has extended this work to metabolic disorders, such as early-onset type 2 diabetes mellitus, and other complications (e.g., early vascular aging) associated with adolescent obesity.

Amita Sehgal, PhD, is the John Herr Musser Professor of Neuroscience, Investigator of the Howard Hughes Medical Institute and Director of the Chronobiology and Sleep Institute (CSI) at the University of Pennsylvania. Prof. Sehgal received her Ph.D. from the Weill Graduate School, Cornell University, and conducted her postdoctoral work at Rockefeller University. Her research focuses on the genetic basis of circadian rhythms and sleep. Sehgal serves on many national and international advisory panels and as editor for several journals. Her work has been recognized through a number of awards and honors, which include the Outstanding Scientific Acievement award from the Sleep Research Society, the Javits award from NINDS, the Michael Brown and Stanley Cohen Research awards at Penn, the Honma prize (Japan) for biological rhythms and the Switzer Prize from UCLA. Sehgal is an elected member of the National Academy of Medicine, the American Academy of Arts and Sciences and the National Academy of Sciences USA.

John Spiro, PhD, joined the Simons Foundation in 2007. He served as interim director of the

Simons Foundation Autism Research Initiative (SFARI) between October 2000 and September 2021, and before that he was the SFARI deputy scientific director. Spiro helps to oversee all aspects of the foundation's autism research initiatives, including managing a team of scientists and administrative staff involved in launching requests for applications, evaluating proposals and other projects, organizing scientific workshops and meetings and overseeing SFARI.org. He helped launch the Simons Variation in Individuals Project (now Simons Searchlight) and has spearheaded the foundation's efforts to promote the use of preprints in the life sciences as well as other initiatives aimed at more open data sharing. Dr. Spiro earned his undergraduate degree in biology from Haverford College and his Ph.D. from the University of California, San Diego. His thesis was based on work in the laboratory of the late Walter Heiligenberg, and his postdoctoral work was with Richard Mooney at Duke University. His research interests were in cellular and systems neuroscience, and he focused on preparations where it was possible to forge links between cellular neurobiology and behavior. In 2000, Dr. Spiro joined the Nature Publishing Group as an editor at Nature Neuroscience, where he was involved in evaluating research findings across the field of neuroscience. In 2004, he joined Nature as a senior editor on the biology team, where he oversaw a group of editors responsible for editorial decisions and peer review of manuscripts across all areas of neuroscience, ranging from molecular development to functional imaging and behavior. In addition, he gained experience in communicating science to both professional scientists and the public through his involvement in commissioning, editing and writing editorials, book reviews and other material for the journal and related web-based resources.

Hao Wang, PhD, is currently Vice President, Global Program Leader, Neuroscience

Therapeutic Area in Takeda Pharmaceuticals. Dr. Hao Wang obtained her PhD from University of Washington and completed her postdoctoral training at University of California San Francisco. Hao has a combined 20+ years of industry experience that spans across drug discovery, translational medicine and clinical development. Hao began her industry career at Merck Research Laboratories in 1999 leading a drug discovery research lab, then early clinical development in neurology and pain. She then joined Johnson & Johnson R&D in 2008 as a clinical leader for early development and then in late clinical development, as well as biomarkers across the Neuroscience Therapeutic Area. Hao then served as a program director for three years at the National Institute of Neurological Disorders and Stroke (NINDS). In 2016, Hao joined Takeda Pharmaceuticals Clinical Science Department in Neuroscience Therapeutic Area Unit, and later took on a leadership roles as Global Program Leader, leading programs with therapeutic focus ranging from neurodegenerative diseases, pain, epilepsy, and sleep/wake disorders.

Jerry Yakel, PhD, received his B.S. from Oregon State University, and his Ph.D. from the University of California, Los Angeles, where he studied ligand-gated ion channels and serotonin receptors in cultured hippocampal neurons and cell lines with Meyer Jackson. During a postdoctoral fellowship with Hersch Gerschenfeld at the Ecole Normale Superieure (Paris, France), he investigated the regulation of voltage-gated calcium channels by G protein-coupled receptors. During a second postdoctoral stage at the Vollum Institute with Alan North and Tom Soderling, he studied the function of regulation of ligand-gated ion channels. Dr. Yakel joined NIEHS as an investigator in 1993, and is currently a Senior Investigator in the Laboratory of Neurobiology. His laboratory explores the function and regulation of ligand-gated ion channels, in particular the neuronal nicotinic receptor channels, in the hippocampus.