

Novel Molecular Targets for Mood Disorders and Psychosis: A Workshop

Committee

Linda S. Brady

Chair

Linda S. Brady, Ph.D. serves as the Director of the Division of Neuroscience and Basic Behavioral Science at the National Institute of Mental Health (NIMH). In this role, she provides scientific, programmatic, and administrative leadership for an extramural research program portfolio in basic neuroscience to support NIMH's mission of transforming the understanding and treatment of mental illnesses.

Dr. Brady has directed programs in neuropharmacology, drug discovery, and clinical therapeutics and organized Consortia focused on ways to accelerate the development and clinical application of radiotracers in clinical research. She has provided leadership for many programs, including Development and Application of PET and SPECT Imaging Ligands as Biomarkers for Drug Discovery and Pathophysiological Studies of CNS Disorders, the National Cooperative Drug/Device Discovery/Development Groups for the Treatment of Mental Disorders, and First in Human and Early Stage Clinical Trials of Novel Investigational Drugs or Devices for Psychiatric Disorders.

Dr. Brady serves as co-chair of the Neuroscience Steering Committee for the Biomarkers Consortium, a public-private research partnership of the Foundation for the National Institutes of Health (FNIH) that focuses on discovery, development, and qualification of biological markers to support drug development, preventive medicine, and medical diagnostics. From 2004-2013, she co-led the Molecular Libraries and Imaging Program, a trans-NIH Common Fund initiative to provide biomedical researchers with access to small organic molecules that can be used as chemical probes to study the functions of genes, cells, and biochemical pathways in health and disease. Dr. Brady was trained in pharmacology and neuroscience.

She completed her Ph.D. at Emory University School of Medicine, followed by postdoctoral work and research positions at the Uniformed Services University of the Health Sciences and the NIMH Intramural Research Program. She is the author of more than 70 peer-reviewed scientific publications and is a member of the Society for Neuroscience and a Fellow in the American College of Neuropsychopharmacology. Dr. Brady has received NIH Director's Awards and NIH Merit Awards in recognition of her activities in biomarker development and drug development for mental disorders.

Tiffany Farchione

Member

Tiffany Farchione, M.D., received her medical degree from Wayne State University in Detroit, Michigan, and completed adult residency and child & adolescent fellowship training at the University of Pittsburgh's Western Psychiatric Institute and Clinic. Dr. Farchione is board certified in both general and child & adolescent psychiatry. Before joining the Food and Drug Administration (FDA) in 2010, Dr. Farchione was affiliated with the University of Pittsburgh Medical Center and was on the University of Pittsburgh faculty. As the Acting Director of the Division of Psychiatry Products at FDA, Dr. Farchione is involved in the oversight of new drug review for all psychiatric drug development activities conducted under investigational new drugs, and the review of all new drug applications and supplements for new psychiatric drug claims.

David L. Gray

Member

David L. Gray, Ph.D. is the Vice President of Chemistry at Cerevel Therapeutics in Boston, MA. He completed undergraduate studies at the University of Minnesota and a Ph.D. in Organic Chemistry under the supervision of Professor K.C. Nicolaou at the Scripps Research Institute in La Jolla. Dr. Gray began his drug discovery career at Pfizer as a medicinal chemist. His early research focused on discovering novel compounds that leveraged developing concepts of functional selectivity and state-dependent activation to more precisely modulate GPCRs and transporter targets. Dr. Gray ultimately transitioned from chemistry to focus on leading research teams in CNS biology and translational clinical medicine. In support of therapeutic discovery efforts, his research group focused on physiological- and human-relevant assay development and translational neuroscience in the areas of depression, schizophrenia, and then Parkinson's. He has played a major role in advancing innovative and patient-centric clinical development strategies, including device-based clinical assessments, remote clinical assessments, and digital patient-reported outcomes. Dr. Gray has become an advocate for effectively incorporating the patient voice into early research and for leveraging technology to increase the throughput of preclinical and clinical research efforts. He is active in several patient and research communities and has contributed to over 60 peer-reviewed publications spanning a wide variety of scientific disciplines.

During the past eight years, Dr. Gray has been advancing clinical-stage research programs based on highly selective modulation of dopaminergic circuitry in specific brain regions. He led the early research and then the clinical development of a series of D1 partial agonists, including tavapadon, currently in Ph3 for Parkinson's Disease. Continual advances in the understanding of disease-relevant circuitry from the broader field of brain research suggest that pharmacotherapies with a high degree of receptor subtype and functional selectivity will lead to improved motor symptom therapies in Parkinson's disease, much-needed advancements in the pharmacologic treatment of addiction, and strategies to alleviate specific cognitive and motivational deficits associated with CNS diseases. Dr. Gray joined the CNS-focused drug development company Cerevel Therapeutics to advance its clinical and preclinical programs.

Magali Haas

Member

Magali Haas, M.D., Ph.D., M.S.E., founded Orion Bionetworks in July 2012 and reserves as its CEO and President. Orion Bionetworks was transformed to Cohen Veterans Bioscience in 2015 to specifically dedicate research to improving the detection and treatment of post-traumatic stress (PTS) and traumatic brain injury (TBI) and related comorbidities so that the burden of these conditions may be lessened on service members, veterans, and their families. Dr. Magali has over 15 years of pharmaceutical executive and clinical research experience, predominantly at Johnson & Johnson, where she assumed broad end-to-end development leadership roles in medical marketing, full clinical development, early development, and translational and biomarker sciences in psychiatry and neurology. She successfully filed NDAs in the US and Europe for risperidone indications in autism, adolescent schizophrenia, juvenile bipolar disorder, and conduct disorders. She also led development teams evaluating compounds for depression, neuropathic pain, epilepsy, and migraine disorder. She served three years as Chief Science and Technology Officer for One Mind for Research, a non-profit organization launched in May 2012 by Patrick J. Kennedy.

She orchestrated the launch of One Mind's seminal programs, Apollo, an informatics research portal and, Gemini, an international TBI/PTSD research program. As an "intrapreneur" at J&J, she established the first Neuroscience Translational Medicine & Integrative Solutions department and co-founded the first Companion Diagnostics Center of Excellence as well as J&J's Healthcare Innovation team. She serves on several advisory boards, including Brain Canada, Prophase, Pear Therapeutics, PAASP, and IMEC for nanoelectronics.

Dr. Magali earned her BS in bioengineering from the University of Pennsylvania, an MS in biomedical engineering from Rutgers University, New Jersey, and her M.D./Ph.D. with distinction in neuroscience from Albert Einstein College of Medicine, New York.

Stuart W. Hoffman

Member

Stuart W. Hoffman, Ph.D., is the point of contact for Veterans Affairs/Office of Research and Development (VA/ORD) on traumatic brain injury research. In this role, Dr. Hoffman has oversight for two VA TBI Research Centers and is the Co-chair of the Government Steering Committee for the VA/Department of Defense (DoD) Chronic Effects of Neurotrauma Consortium, as well as a VA traumatic brain injury (TBI) subject matter expert for the National Research Action Plan for Improving Access to Mental Health Services for Veterans, Service Members, and Military Families. Dr. Hoffman also serves on several intra- and inter-agency advisory committees for VA and DoD, including the Congressionally-mandated Traumatic Brain Injury Advisory Committee for the Veterans Health Administration.

Dr. Hoffman received his doctoral degree in behavioral and molecular neuroscience at Rutgers University in 1995 and completed his postdoctoral training in pharmacology at Virginia Commonwealth University in 1997. Dr. Hoffman's professional career began at Emory University as a Research Assistant Professor in the Department of Neurology in 1998 and was an Assistant Professor of Emergency Medicine from 2000 to 2006. Immediately before joining the VA in 2010, Dr. Hoffman was the Research Director for the Defense and Veterans Brain Injury Center in Johnstown, Pennsylvania. Dr. Hoffman has more than 30 years of translational neuroscience research experience focusing on neuroprotection and methods to promote recovery of function after brain injury.

John H. Krystal

Member

John Krystal, MD, is the Robert L. McNeil, Jr., Professor of Translational Research, Chair, Department of Psychiatry, Yale University School of Medicine, and Chief of Psychiatry at Yale-New Haven Hospital. He is a graduate of the University of Chicago, Yale University School of Medicine, and the Yale Psychiatry Residency Training Program. He has published extensively on the neurobiology and treatment of schizophrenia, alcoholism, PTSD, and depression. Notably, he led the discovery of the rapid antidepressant effects of ketamine in humans. He is the Director of the National Institute on Alcohol Abuse and Alcoholism (NIAAA) Center for the Translational Neuroscience of Alcoholism and the Clinical Neuroscience Division of the VA National Center for PTSD. Dr. Krystal is a member of the U.S. National Academy of Medicine. Currently, he is President of the International College of Neuropsychopharmacology (CINP), a member of the National Institutes of Mental Health National Mental Health Advisory Council, and editor of Biological Psychiatry.

Carlos A. Larrauri

Member

Carlos Larrauri, MSN, APRN, PMHNP-BC, FNP-BC, is dual-board certified as a Family Nurse Practitioner and a Psychiatric Mental Health Nurse Practitioner. Mr. Larrauri is a member of the National Alliance on Mental Illness (NAMI) Board of Directors and serves as the Secretary for the 2019-2020 term. He is a lecturer with The University of Miami School of Nursing and Health Studies. Carlos is a member of NAMI Miami-Dade County, where he also serves on the affiliate Board of Directors and as a NAMI Connections Support Group Trainer.

Mr. Larrauri is a member of The American Psychiatric Nurses Association, The American Association of Nurse Practitioners, Strong 365, The STARR Coalition, CURESZ, The Stability Network, and Students with Schizophrenia. Carlos currently holds M.S.N., Family Nurse Practitioner from University of Miami, Miami, FL (2017), B.S.N. from Miami Dade College, Miami, FL (2016), and B.A., Humanities Concentration from New College of Florida, Sarasota, FL (2012).

Husseini K. Manji

Member

Husseini K. Manji, M.D., FRCPC, is Global Therapeutic Head for Neuroscience at Janssen Research & Development, LLC, one of the Johnson & Johnson pharmaceutical companies. He is also a Visiting Professor at Duke University. Dr. Manji was previously Chief of the Laboratory of Molecular Pathophysiology & Experimental Therapeutics at the National Institutes of Health (NIH) and Director of the NIH Mood and Anxiety Disorders Program, the largest program of its kind in the world.

The major focus of Dr. Manji's world-renowned research is the investigation of disease- and treatment-induced changes in gene and protein networks that regulate synaptic and neural plasticity in neuropsychiatric disorders. His work has helped conceptualize these illnesses as genetically-influenced disorders of synaptic and neural plasticity and has led to the investigation of novel therapeutics for refractory patients. Dr. Manji has also been actively involved in developing biomarkers to help refine these multifactorial diseases.

Dr. Manji has received a number of prestigious awards, including the NIMH Director's Career Award for Significant Scientific Achievement, the A. E. Bennett Award for Neuropsychiatric Research, the Ziskind-Somerfeld Award for Neuropsychiatric Research, the NARSAD Mood Disorders Prize, the Mogens Schou Distinguished Research Award, the ACNP's Joel Elkes Award for Distinguished Research, the DBSA Klerman Senior Distinguished Researcher Award, the American Federation for Aging Research Award of Distinction, and the Global Health & the Arts Award of Recognition. In 2017, he was recognized as one of 14 inaugural "Health Heroes" by Oprah Magazine.

Dr. Manji has been inducted into the National Academy of Sciences' Institute of Medicine (IOM) and has held numerous leadership positions within the IOM, the NIH Biomarkers Neuroscience Steering Committee, the ACNP, and the Society of Biological Psychiatry.

Throughout his career, Dr. Manji has also been committed to undertakings related to medical and neuroscience education and has worked with the National Board of Medical Examiners (NBME), the Howard Hughes Medical Institute Research Scholars Program numerous national curriculum committees. He founded and co-directed the NIH Foundation for the Advanced Education in the Sciences Graduate Course in the Neurobiology of Neuropsychiatric Illness and has received several teaching and mentoring awards. In addition to serving on the editorial board of numerous journals, Dr. Manji has been Editor of Neuropsychopharmacology Reviews, Deputy Editor of Biological Psychiatry, and Associate Editor of Bipolar Disorders.

Sharon Mates

Member

Sharon Mates, Ph.D., has been the Chairman of the board of directors, President and Chief Executive Officer of Intracellular Therapies Inc. (ITI) since June 2002. Dr. Mates co-founded ITI in May 2002. Before co-founding ITI, Dr. Mates was a co-founder of Functional Genetics and served as its Chairman and Chief Executive Officer from December 2000 until August 2003. From 1989-1998 Dr. Mates was the President and a board member of North American Vaccine Inc. and its predecessor companies. She has served on several boards and recently completed a board membership and a two-year chairmanship with the New York Biotechnology Association Board.

Dr. Mates has also served on the Advisory Council of the Center for Society and Health at the Harvard School of Public Health, the Board of Visitors of the Biotechnology Institute of the University of Maryland, and the board of directors Gilda's Club of New York.

Earlier in her career, Dr. Mates spent several years as a research analyst and investment banker and an advisor to the life sciences industry. Dr. Mates received her B.S. from Ohio State University and her Ph.D. from the University of Washington. She completed her postdoctoral fellowships at The Massachusetts General Hospital and Harvard Medical School.

Steven M. Paul

Member

Steven Marc Paul, M.D., is currently the President and CEO of Voyager Therapeutics, Inc. He was formerly the Founding Director of the Helen and Robert Appel Alzheimer's Disease Research Institute and the Burton P. and Judith B. Resnick Distinguished Professor in Neurodegenerative Diseases as well as a DeWitt Senior Scholar and Professor of Neuroscience (Brain and Mind Research Institute), Psychiatry and Pharmacology at Weill Cornell Medical College. Dr. Paul was also formerly the Executive Vice President of Science and Technology and President of the Lilly Research Laboratories (LRL) of Eli Lilly and Company, overseeing the discovery and development of several of Lilly's largest products. Before assuming his position at Lilly and Weill Cornell Medical College, Dr. Paul served as a Laboratory and Branch Chief and Scientific Director of the National Institute of Mental Health (NIMH/NIH) in Bethesda, Maryland.

Dr. Paul has authored or co-authored over 550 papers and invited book chapters and was listed as one of the most highly cited scientists in the world (top 50 in Neuroscience) (1980-2000) by the Institute for Scientific Information (I.S.I.), Philadelphia, Pennsylvania. He holds nine patents on inventions made both at NIH and Lilly. His current work has focused on a class of neuroactive steroids and oxysterols and the role of apoE in the pathogenesis of Alzheimer's disease and in developing gene therapies for a variety of neurological disorders. His earlier research describing a novel class of neuroactive steroids has resulted in several drug candidates currently in clinical development for depression and refractive seizure disorders.

Dr. Paul is a director of several publicly traded and private biopharmaceutical companies, including Alnylam Pharmaceuticals, SAGE Therapeutics, and formerly the Sigma Aldrich Company. He is a founder of SAGE Therapeutics and Voyager Therapeutics, dedicated to discovering and developing novel therapeutics for neurological and psychiatric disorders. Dr. Paul currently serves as the Chairman of the Foundation for the NIH (FNIH).

Morgan Sheng

Member

Morgan Sheng, MBBS, Ph.D., FRS is Core Institute Member and Co-Director of the Stanley Center for Psychiatric Research at the Broad Institute of MIT and Harvard; he is also Professor in the Department of Brain and Cognitive Science at MIT. Previously (2008-2019), Sheng spent a decade as Vice-President for Neuroscience at Genentech, a leading biotech company, where he was head of neuroscience research and drug discovery. Prior to joining Genentech, Dr. Sheng was the Menicon Professor of Neuroscience at MIT and Investigator of the Howard Hughes Medical Institute. Sheng received a BA from Oxford University (UK) and obtained his medical degree and internal medicine training at London University (UK). He also holds a Ph.D. in molecular genetics from Harvard University. Following his postdoctoral work in neuroscience at the University of California, San Francisco, Dr. Sheng served on the faculty at Massachusetts General Hospital and Harvard Medical School before joining MIT.

Dr. Sheng is a Fellow of the Royal Society (UK), Fellow of the Academy of Medical Sciences (UK), and Fellow of the American Association for the Advancement of Science. He has served on the editorial boards of *Neuron*, *Journal of Neuroscience*, and *Current Opinions in Neurobiology*. A past recipient of the Foundation Ipsen Prize in Neuronal Plasticity, and the Young Investigator Award of the Society for Neuroscience, Dr. Sheng is the author of more than 200 peer-reviewed publications focused on the molecular and cellular biology of synapses and synaptic plasticity, and pathogenic mechanisms of neurodegenerative diseases.

Gregory E. Simon

Member

Gregory Simon, M.D., M.P.H., is an investigator at Kaiser Permanente Washington Health Research Institute and a psychiatrist at Kaiser Permanente's Behavioral Health Service. Dr. Simon completed residency training in internal medicine at the University of Washington, residency training in psychiatry at the Massachusetts General Hospital, and fellowship training in the Robert Wood Johnson Clinical Scholars program at the University of Washington. Dr. Simon's research focuses on improving access to and quality of mental health care, especially for mood disorders. Specific areas of research include improving adherence to mental health treatments, personalized treatment for mood disorders, racial and ethnic disparities in mental health care, increasing the availability of effective psychotherapy, evaluating peer support by and for people with mood disorders, identifying and reducing the risk of suicidal behavior, the cost-effectiveness of mental health treatments, and comorbidity of mood disorders with chronic medical conditions. Dr. Simon currently leads the Mental Health Research Network, an NIMH-funded cooperative agreement supporting population-based mental health research across 14 large health systems.

Ilina Singh

Member

Ilina Singh, Ph.D. is a Professor of Neuroscience & Society at the University of Oxford, England, United Kingdom. She is also a co-director at the Wellcome Trust Centre for Ethics and the Humanities and a research fellow at the Oxford Research Centre. Singh obtained a Ph.D. from Harvard University.

Dr. Singh leads the Neuroscience Ethics and Society group, based at the University of Oxford's Department of Psychiatry (NeuroSec). There, she is involved in developing ethics research and guidance for a range of scientific and clinical studies in Oxford Psychiatry and Neuroscience, including projects in forensic psychiatry, bipolar disorder, psychosis, anorexia nervosa, and global child development. She also provides ethics advice and foresight analysis to projects involving 'big neuro' and personalized mental health. Her research focuses on the social and ethical dimensions of innovations in neuroscience, psychiatry, and related areas – and she is particularly interested in translational impacts for children and families.

She is an international policy-making board member with the Scattergood Foundation Program for Behavioral Ethics, University of Pennsylvania Medical School, USA, and the ELSA program of the Norwegian Research Council. Dr. Singh serves as a consultant to health policy groups –including the United Kingdom National Institute for Clinical Excellence and the National Institute of Health/Hastings Center Working Group on Drugs in Pediatric Psychiatry. She is a co-editor of the Biosocieties journal and an editorial board member of the American Journal of Bioethics-Neuroscience journal. She has contributed to various scientific and policy groups, including the US National Institutes of Mental Health and the Nuffield Council on Bioethics.

Before joining the University of Oxford, she was a Professor of Science, Ethics & Society at the Department of Global Health & Social Medicine at the King's College London (KCL), England, UK. Dr. Singh was a Reader at the London School of Economics and Political Science before joining KCL. Her current research focuses on the social and ethical side of neuroscience and psychiatry. She is interested in studying translational impacts for children and families and developing qualitative and quantitative data collection & presentation methods. According to Scopus, Dr. Singh has published more than 88 research documents with over 2000 citations and currently has an h-index of 23.