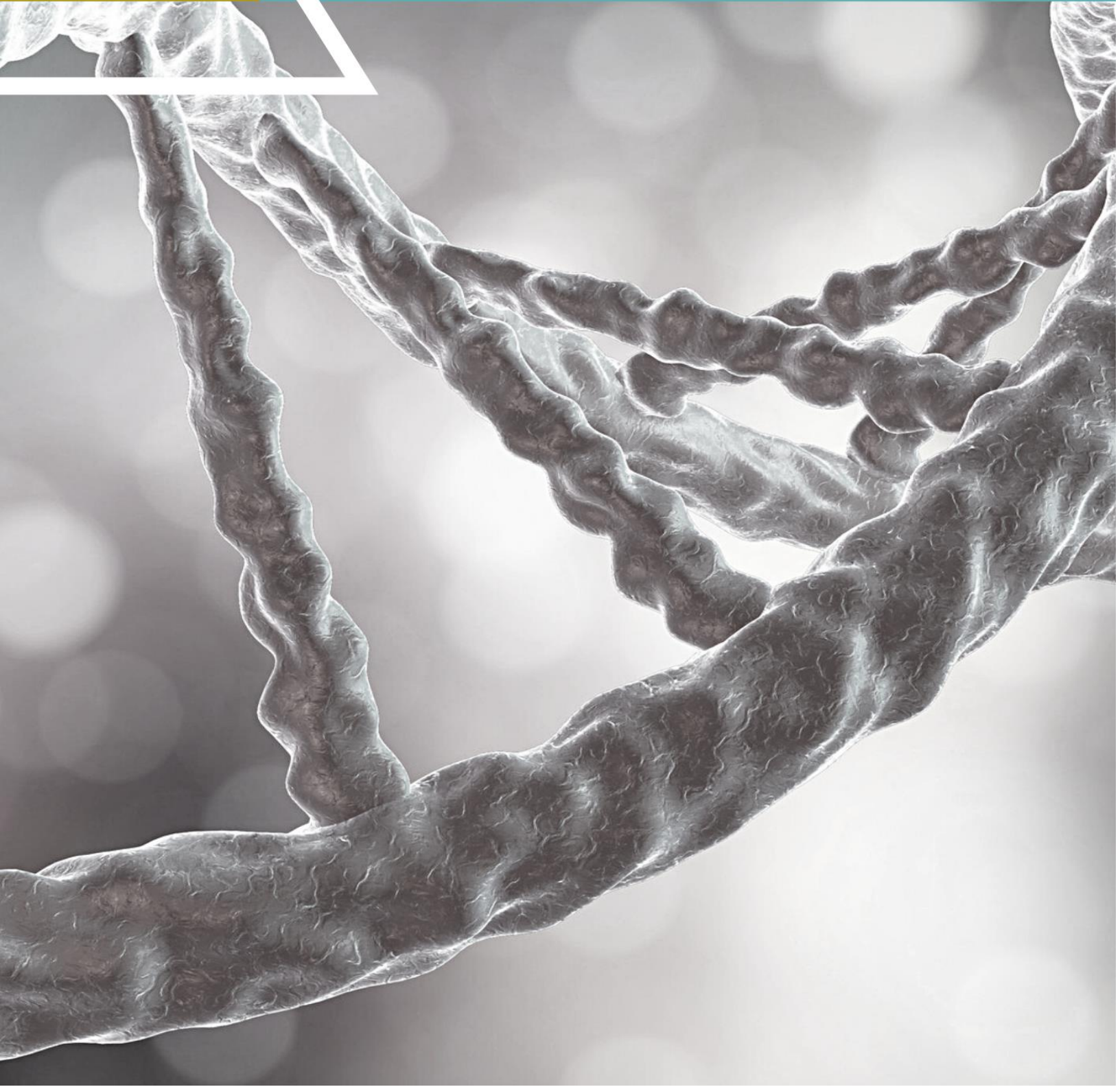


2022 MOLECULAR PSYCHIATRY MEETING YOUNG INVESTIGATORS





Abhishek Banerjee
Newcastle University

Abhi is a Senior Lecturer at Newcastle University in the UK working on flexibility of decision-making and its dysfunctions in neurological disorders. Abhi did his D.Phil. at the University of Oxford as a Felix Scholar studying spike-timing-dependent plasticity learning rules during cortical development. He was a Simons Fellow at MIT investigating the dynamics of inhibitory mechanisms in Rett syndrome, a neurodevelopmental disorder in the autism spectrum. During this time, he was also a Teaching Fellow in Neurobiology at Harvard University. He was also a Marie Skłodowska-Curie Fellow and NARSAD Young Investigator at the University of Zürich before taking up his current post.



Thibault P. Bittar
Université Laval

My interest in science and medicine spans as far back as I can remember. During my master, I performed advanced research in two different neuroscience fields. First, I focused my studies on the neuroendocrinology of stress in New Zealand before moving to Japan to study sleep mechanisms. These successful experiences in neuroscience research encouraged me to pursue doctoral studies in neuroscience at Université Laval in Canada, under the supervision of Dr. Benoit Labonté, Sentinel North Partnership Research Chair in molecular neurobiology of mood disorders. The goal of my project is to expand fundamental knowledge in chronic stress and major depressive disorder. My main research topic is how chronic stress can lead to a depressive state and in fine to major depression. I also focus on understanding possible sex differences leading to such a state. I apply complex intersectional viral approaches to target different neuronal populations of the medial prefrontal cortex. My research combines various techniques such as electrophysiology, morphological studies, transcriptional analyses, and chemogenetic manipulations to unravel the behavioral contributions and alterations of two neuronal pathways involved in depressive-like behaviors in males and females.



Jiayang Chen
Washington University in St. Louis

Jiayang Chen is a Molecular Cell Biology graduate student in the Division of Biology and Biomedical Sciences (DBBS) of Washington University in St. Louis. Long having been interested in nervous system development and human psychiatric disorders etiology, he now works with Dr. Joseph Dougherty's laboratory in the Department of Genetics, Washington University School of Medicine, to understand genetic and

cellular underpinnings of psychiatric disorders. Jiayang's current works focus on a neurodevelopmental disorders-related transcriptional factor, MYT1L, and how its mutation leads to human diseases like microcephaly, ASD, and ADHD. He utilizes the MYT1L knockout mouse model to investigate the molecular and cellular functions of MYT1L across brain development. Leveraging various genetic and behavioral techniques, he aims to define molecular mechanisms underlying human MYT1L Syndrome, and hopes to advance the pre-clinical studies of human psychiatric disorders. Jiayang earned his B.S. in Biological Sciences at Fudan University, China, with honors. During his college, he also worked as a research assistant in Dr. Lei Xue's laboratory, Fudan University, and Dr. Michael Crair's laboratory, Yale University, to investigate molecular mechanisms of various neurological diseases.



Katarzyna Anna Dudek
CERVO Brain Research Centre

The very mystery behind the phenomenon that is human brain has fascinated me from an early age. However, but for the lectures of the acclaimed Polish neuroscientist, Professor Jerzy Vetulani, I wouldn't have decided to pursue my first and foremost passion, that is Neuroscience. Professor Vetulani introduced subject of neuropharmacology in the Polish academic field. His work inspired my own research. I am a young, aspiring scientist with a strong investment in the research work. In my PhD project I aim to uncover underlying mechanisms of resilience in depression and thus identify novel treatment strategies whilst making a notable contribution in the field of mood disorders. 30-50% of depressed individuals are unresponsive to commonly prescribed antidepressant treatments, suggesting that biological mechanisms, such as stress-induced inflammation and blood vessel dysfunction, remain untreated. My research examines the protective role of endocannabinoid system on brain vasculature function, and neuroinflammatory response that contribute to depression pathology. I am pursuing my studies under the supervision of Dr. Caroline Menard Sentinel North Research Chair in the neurobiology of stress and resilience as well as Dr. Vincenzo Di Marzo, holder of the Canada Excellence Research Chair on the Microbiome-Endocannabinoidome Axis in Metabolic Health.



Victor Ekuta
MIT

Victor Ekuta is an MIT linQ Catalyst Healthcare Innovation Fellow, Black Men's Brain Health Fellow, and an MD Candidate. He is also an Instructor for the MIT Office of Engineering Outreach Programs, where he combines his passion for advancing brain health equity with his love of mentorship and diversifying STEM. Before joining MIT, Victor investigated Alzheimer's Disease as a 2017 Doris Duke

Clinical Research Fellow at Beth Israel Deaconess Medical Center/Harvard Medical School, researched transcranial magnetic stimulation as a 2018 Penn Memory Center Minority Scholar in Aging Research, and joined more than 100 global experts to contribute to a report on the future of healthcare and medicine, *Trust or Consequences 2040: Will innovations in health and medicine deliver?* as a 2019 Trust Colab Participant. For his work, Victor has received the 2021 AAIC Neuroscience Next 'One to Watch' Award, 2021 Tau Leadership Fellowship Award, 2020 American Academy of Neurology Future in Neurological Research Scholarship, 2019 Alzheimer's Disease Drug Discovery Foundation Young Investigator Award, and 2011 Gates Cambridge Scholarship Finalist, among others. In the future, Victor plans to specialize in academic neurology as a physician-scientist-advocate, employing novel approaches to treat human brain disease, combat health disparities, and boost diversity in STEM.



Lief Fenno
Stanford University

Lief Fenno grew up in Fairbanks, Alaska, completed his undergraduate training in neurobiology at Harvard University, and neuroscience PhD, MD, and Psychiatry Residency at Stanford University. He is currently an Instructor in the Stanford Department of Psychiatry and Behavioral Sciences and splits his time between clinical work, where he treats patients with substance use disorders as an Attending Physician at Stanford Hospital, and basic neuroscience research, where he leads multidisciplinary teams developing and applying novel molecular and viral neuroscience approaches as a member of Karl Deisseroth's laboratory in the Department of Bioengineering. Lief has developed and applied methods for controlling (via optogenetic tools with unique spectral, temporal, or signaling properties) highly defined (via novel, intersectional viral targeting approaches) populations of neurons in awake, behaving animals to understand brain function in health and disease. These tools and approaches have been widely and freely distributed to public research efforts around the world. Lief is starting his own research group in 2022, which will continue to develop and apply novel molecular and viral methods, with a goal of translating both findings and reagents to use in human patients suffering from a range of neurological and psychiatric illnesses.



Sarah Fitzpatrick
Yale School of Medicine

Sarah Fitzpatrick is a 4th year MD-PhD student at Yale School of Medicine, currently pursuing her PhD in Neuroscience in Dr. Ellen Hoffman's lab. Using zebrafish, she studies autism-associated chromatin modifier genes and their role in early brain development. She has been interested in brain development and developmental disorders for many years and graduated from Ohio State

University in 2016 with a BS in Neuroscience after spending her undergraduate years studying autism and fragile X syndrome with Dr. Craig Erickson at Cincinnati Children's Hospital, Dr. L. Eugene Arnold at the OSU Nisonger Center, and Dr. Randi Hagerman at the UC Davis MIND Institute. In addition to her graduate work, she serves as a primary care provider in a student clinic. In her spare time, she salsa dances, bikes, and gets her creative side out at New Haven's maker space, MakeHaven.



Marc Forrest
Northwestern University

Marc Forrest, Ph.D., is a Research Assistant Professor in the Department of Neuroscience and member of the Center for Autism and Neurodevelopment at Northwestern University, Chicago, Illinois. Dr. Forrest was born in Geneva, Switzerland, and moved to the UK to complete his Masters in Biochemistry at the University of Bath, and his PhD in Functional Genomics of Neuropsychiatric Disorders at Cardiff

University. He moved to the US for his postdoc, which was conducted in the Peter Penzes' laboratory at Northwestern University, specializing in synaptic biology. He was awarded a Swiss National Science Foundation Early Postdoc Fellowship for two years whilst in Chicago to support his work. Dr. Forrest's interests involve modeling the functional impact of common and rare variants associated to neuropsychiatric disorders such as schizophrenia, autism spectrum disorder and epilepsy to better understand their etiology. He uses stem cell-derived neurons and mouse models to characterize disease associated variants with an emphasis on using unbiased omic technologies to uncover novel dysfunctional pathways and therapeutic opportunities. Dr. Forrest current project examines proteomic, cellular and circuit mechanisms of disease in a mouse model of the 16p11.2 microduplication, one of the most highly replicable rare genetic variants associated to schizophrenia and autism.



Andrew Fukuda
Alpert Medical School, Brown University

Dr. Andrew M. Fukuda received his MD/PhD from Loma Linda University and is currently the Chief Resident of Psychiatry at Brown University and has been in the NIMH funded R25 Research Track Program since his intern year. He has numerous publications including 20 peer-reviewed journal articles and over 60 conference abstracts, won several awards during his first 3 years of residency including the NIMH Outstanding Resident Award Program, Society for Neuroscience Trainee Development Award, NIH

Extramural Research LRP Award, and the American College of Psychiatrists Laughlin Fellowship, and is involved in institutional and national committees and active in student education and mentorship. Dr. Fukuda is leading various studies examining the mechanisms of risk for depression as well as biomarkers

of treatment response, and recently submitted a K23 under the primary mentorship of Dr. Linda Carpenter at the beginning of his PGY4 examining the roles of non-neuronal systems in depression pathology and their involvement in the therapeutic mechanisms of action of transcranial magnetic stimulation. He will continue to pursue his research and clinical passion of treatment resistant pathologies as Assistant Professor of Psychiatry at Brown, working in both the Neuromodulation Research Facility and Neuromodulation Clinic, and in the Psychiatric Emergency Department.



Mark Gergues

University of California, San Francisco Department of Psychiatry

Mark Gergues (he/him) earned his B.A. in Cell Biology & Neuroscience, Psychology, and Cognitive Science at Rutgers University. Currently, he is a neuroscience graduate student in Dr. Mazen Kheirbek's Lab at UCSF where he works on research leveraging modern system neuroscience approaches, optogenetics and in vivo calcium imaging, to study neural circuit mechanisms of emotional behaviors. Specifically, how the extrahippocampal network process anxiety-related information for modulation of approach-avoidance behaviors. He hopes to one day run his own academic research program studying emotional behaviors in rodents and their translational applicability for treatment of neuropsychiatric diseases.



Dora Koller

Yale University School of Medicine Department of Psychiatry

Dr. Dora Koller is a first year postdoctoral fellow at the Department of Psychiatry of Yale School of Medicine. She received her Ph.D. in clinical pharmacology from the Autonomous University of Madrid, Spain. During her Ph.D., she investigated the metabolic effects of antipsychotic drugs to optimize treatment for patients with schizophrenia. Her interest to understand the genetic architecture of complex traits led her to psychiatric genomics. Combining her clinical knowledge and genomics, the area she is the most passionate about is developing precision medicine approaches for psychiatric disorders. She is also interested in understanding the relationship between physical and mental health. Her main project, which is funded by the European Commission, is investigating the genetic overlap among attention deficit hyperactivity disorder and substance use disorders. She is very excited to present her work at the MPA symposia about the probability of developing anxiety, depression and eating disorders in patients with endometriosis!



Vilma Lammi

Institute for Molecular Medicine Finland (FIMM), University of Helsinki

I joined Group Hanna M. Ollila, "Genetics of Sleep, Circadian Rhythms and Brain Autoimmunity" at the Institute for Molecular Medicine Finland (FIMM), as a Postdoctoral Researcher in 2021. My main interests are genetics and molecular mechanisms of sleep-related phenotypes and Long COVID. I am coordinating the international Long COVID Host Genetics Initiative collaboration, aiming to elucidate why some people suffer from lingering symptoms for months or years after the acute phase of COVID-19 infection. We think that chronic fatigue-related health problems like the Long COVID, ME/CFS, and post-viral fatigue, call for both hypothesis-free and hypothesis-driven research to bring understanding on the often intertwined psychiatric and somatic symptoms and disease mechanisms. I have always been interested in the bidirectional interplay of the brain and the peripheral systems. My background is in biochemistry, but during my master's studies and PhD project I started swimming from the wet lab towards data analyses and computational methods. My PhD research with Dr Tarja Porkka-Heiskanen (Stenberg) at the Sleep Team Helsinki focused on the effects of sleep loss on the immune system and metabolism. When I'm not tackling life science problems in silico, I'm tackling people on the rugby field, practicing acrobatics, or escaping from rooms.



Clara Liao

Yale Department of Psychiatry

Clara grew up in Los Angeles but left the warm weather and great tacos to graduate from Cornell University with a major in Biological Sciences. Now a third-year Ph.D. student in Yale's Interdepartmental Neuroscience Program, she works in Dr. Alex Kwan's lab, studying the neurobiological mechanisms underpinning the actions of the psilocybin on the brain. She is working to elucidate the specific serotonin receptor subtype(s) that are important for mediating psilocybin-induced neuroplasticity in mice, using two-photon microscopy, genetic models, and behavioral assays. She has a strong interest in science policy and science communication.



Zila Martinez-Lozada

The Children's Hospital of Philadelphia

I am interested in the study of astrocyte biology, with a special focus on astrocyte development, heterogeneity, astrocyte-endothelia interactions, glutamate transporters, and the role of astrocytes in pathologic conditions. The laboratory of Prof. Michael B. Robinson focuses on defining the mechanisms that regulate glutamate transporters in the mammalian CNS. There, I use glutamate transporters

to investigate different aspects of astrocyte biology within two research projects. In the first, I studied endothelial-dependent regulation of glutamate transporters expression in astrocytes. We learned that bilateral communication between astrocytes and endothelial cells is required to induce expression of the glutamate transporter 1 (GLT-1) in astrocytes. Currently, I am working on the continuation of this project, in collaboration with Prof. Keith Murai from McGill University, we are studying the differential and additive effects that endothelia and/or neurons produce on the transcriptome of astrocytes. In the second, I use different sizes of the promoter of GLT-1 to drive the expression of reporter proteins, this project aims to address an important gap of knowledge in the astrocyte field: What is the origin of astrocyte diversity? What are the signals that drive this specification? How does the environment contribute to astrocyte heterogeneity?



Nana Matoba

University of North Carolina at Chapel Hill

My research interests are in studying the genetic effects on complex human traits and diseases with particular emphasis on behavioral genetics. My research focuses on how genetic factors and/or environmental factors influence human traits.

Through my academic training and postdoc career, I have acquired knowledge and skills for analysis of big genetic data, such as genome-wide association studies (GWAS), gene-environment interactions studies, and next-generation sequencing functional genomics studies. I have studied genetic association on multiple traits including autism spectrum disorder, smoking behaviors, alcohol consumption, as well as family-based whole-exome sequencing study of malignant hyperthermia and bipolar disorder. Currently, as a postdoc at University Chapel Hill, I am applying my expertise in genetics and bioinformatics as well as experience with big data analysis to elucidate genetic mechanisms resulting in inter-individual differences in brain-related phenotypes including brain structures and psychiatric disorders. To further expand my skills in this field, especially to functional annotate GWAS findings, I am currently working on ATAC-seq and RNA-seq data of human neural progenitors treated with various stimuli including Wnt activators to identify stimulus-response specific genetic effects of regulatory elements and gene expression, that when integrated with GWAS loci, may help us better understand trait-associated SNPs.



BaDoi Phan

Carnegie Mellon University

I am an MD/PhD student at the University of Pittsburgh School of Medicine and Carnegie Mellon University School of Computer Science. I aim to understand neuropsychiatric disorders through the lens of molecular biology using computation, algorithms, and genomic analyses. In the post-genome era, the data and computational resources makes this possible to marry technical fields of engineering, computer science, and bioinformatics to address questions within neuroscience. My

work to present has explored the genomic processes underlying complex human traits including neuropsychiatric and substance use disorders.



April Pruitt

Yale University, Child Study Center

April Pruitt is a second-year PhD student in the Interdepartmental Neuroscience Program (INP), co-mentored by Ellen Hoffman and Kristen Brennand. She is interested in genetic risk of autism spectrum disorder, sex-specific differences in neurodevelopment, and rare copy number variant disorders that predispose individuals to developmental and psychiatric disorders. She is a Kavli Institute for Neuroscience Scholar, Neuroscience Scholars Program Associate for the Society for Neuroscience, and is in the Medical Research Scholars Program (MRSP). April obtained a Bachelor's of Science degree in Biology with minors in Chemistry and Psychology from the University of Louisiana at Lafayette.



Stephanie Santarriaga

Center for Genomic Medicine, Massachusetts General Hospital & Harvard Medical School

Dr. Stephanie Santarriaga is a research fellow at the Center for Genomic Medicine at Massachusetts General Hospital and Harvard Medical School. She received her Ph.D. in Biochemistry from the Medical College of Wisconsin, where she studied protein quality control pathways in the context of neurodegenerative diseases under the mentorship of Dr. Matthew Scaglione. With an interest in studying psychiatric disorders, she joined the lab of Dr. Rakesh Karmacharya, where she is currently investigating the molecular mechanisms underlying schizophrenia and bipolar disorder using patient-derived neurons. She is particularly interested in using complementary genetic and chemical biology approaches to study the cellular processes involved in modulating synaptic plasticity. Her current project investigates the role of Arc (Activity-regulated cytoskeleton-associated; Arg3.1) in regulating synaptic plasticity in human cortical neurons. For her future studies, she is interested in integrating her graduate and postdoctoral training to investigate the interplay between cellular stress, protein quality control pathways, and synaptic plasticity using stem cell models of psychiatric disorders.



Nancy Sey

University of North Carolina at Chapel Hill

After receiving my undergraduate degree in Psychology from Virginia Commonwealth University, I participated in an NIH funded Post-Baccalaureate Research Education Program at the University of North Carolina (UNC) where I investigated the neurobiological effects of adolescent alcohol exposure. I then matriculated in the Neuroscience graduate program at UNC where I am being mentored by Dr. Hyejung Won. I employ an integrative genomic analysis of the Genome Wide Association Studies (GWAS) to understand the underlying mechanisms of psychiatric illnesses and substance use disorders as part of my thesis project. Outside of the lab, I enjoy leading several outreach initiatives including teaching neurobiology to middle and elementary school children and serving as an ambassador where I share my experiences as a scientist. I hope to pursue an academic science career after completing my graduate training.



Ana Silva

Centre for Addiction and Mental Health

Ana Mendes-Silva is a postdoctoral research fellow in the Department of Molecular Brain Science at the Centre for Addiction and Mental Health (CAMH) under the supervision of Drs. Vanessa Goncalves and James Kennedy. Her research focusses on the understanding of the role of mitochondrial function in mental illness, especially in mood disorders. Currently, Dr Mendes-Silva is investigating the impact of circulating cell-free mitochondrial DNA and mitochondrial genetic variants in the system of psychiatric disorders such as depression, bipolar and schizophrenia.



Kritika Singh

Vanderbilt University Medical Center

I am Kritika Singh, a graduate student at Vanderbilt University Medical Center. My research in labs of Dr. Lea K Davis and Dr. Emily Hodges aims to elucidate the underlying biology driving the comorbidity between Coronary Artery Disease and Depression. My research interests aim to provide us with a better characterization and knowledge of the physiological consequences of psychiatric conditions.