

Young Researchers' Symposium Neuronal Epigenetics & Transcription



Friday October 1, 2021

Please note talks are listed in London time (GMT+1)

8:45	Keynote Speaker and Welcome Erin Schuman - <i>Protein Synthesis in Neurons</i>
9:55	Monika Piweka - <i>Circular RNA in the brain: quest to decipher the enigmatic molecules</i>
10:20	Pierluigi Di Matteo (Fainzilber lab) - <i>The RNA binding protein PTBP1 in growth and regeneration of adult axons</i>
10:45	Warren Winick-Ng (Pombo lab) - <i>Cell-type specialization in the brain is encoded by specific chromatin topologies</i>
11:10-11:20	Break
11:20	Alexi Nott - <i>Brain cell-type regulatory landscapes and associations with Alzheimer's Disease</i>
11:45	Jose Sanchez-Mut - <i>PM20D1 epi-genomic and functional association with Alzheimer's disease</i>
12:10	Davide Martino Coda (Gräff lab) - <i>CRISPR-based epigenetic reprogramming of memory cells in fear memories</i>
12:35-13:20	Lunch
13:20	Sam Rodrigues - <i>Spatial and temporal RNA sequencing</i>
13:45	Sulagna Das - <i>Beyond immediate early: visualizing long-term regulation of transcription dynamics in hippocampal neurons</i>
14:10	Liz Pollina (Greenberg lab) - <i>A neuronal activity-dependent protein complex protects the aging genome</i>
14:35	Gilda Stefanelli (Zovkic lab) - <i>The histone chaperone Anp32e regulates memory formation, transcription, and dendritic morphology by regulating steady-state H2A.Z binding in neurons</i>
15:00-15:10	Break
15:10	Hyejung Won - <i>Chromatin architecture across addiction circuitry and substance use disorder</i>
15:45	Keynote Speaker Azad Bonni - <i>Epigenetic regulation of neuronal connectivity and plasticity in the brain</i>
16:45	Closing remarks

Symposium organisers:

Catia Andreassi, Emily Brookes, Ernest Palomer

MRC Laboratory for Molecular Cell Biology and Department of Cell and Developmental Biology

Keynote Speakers

Erin Schuman

Director at the Max Planck Institute for Brain Research, Germany

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Erin Schuman is Director at the Max Planck Institute for Brain Research in Frankfurt am Main, Germany. Before moving to her current position, Erin was Full Professor in the Division of Biology at the California Institute of Technology. During this time, she was also appointed investigator at the Howard Hughes Medical Institute. Erin is a pioneer in the field of local translation in dendrites. Her work initially established that local protein synthesis is required for neurotrophins-induced synaptic plasticity and she has then continued by investigating the impact of the local transcriptome and proteome on the structure and function of neurons. She has also contributed to the development of a wide array of techniques, like FUNCAT and BONCAT, that have become mainstream in the field. She has received several awards and grants, including the Pew Scholars Award, the Beckman Young Investigator Award, and an Alfred P. Sloan Fellowship. She is also an indefatigable promoter of the professional advancement of women in the field of neuroscience. In 2018, she received the Society for Neuroscience Mika Salpeter Lifetime Achievement Award for her teaching, mentoring, and advocacy.

Azad Bonni

Senior Vice President

Global Head of Neuroscience & Rare Diseases

Roche Pharma Research & Early Development

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Azad Bonni is Senior Vice President and Global Head of Neuroscience & Rare Diseases at Roche in Pharma Research & Early Development. Before joining Roche, Azad was Edison Professor of Neuroscience and Head of Neuroscience at Washington University in St Louis, and prior to that

Professor of Neurobiology at Harvard Medical School. Azad is an international leader in neuroscience, and his laboratory has discovered fundamental epigenetic, transcriptional, and ubiquitin signaling networks that control neuronal connectivity in the brain. He received his MD at Queen's University in Kingston, Ontario, Canada, neurology residency at McGill University in Montreal, and PhD and postdoctoral training at Harvard University in Boston. He has received numerous honors and awards including election to the American Association for the Advancement of Science, Royal Society of Canada, and National Academy of Medicine in the United States.



Sulagna Das

Research Assistant Professor

Albert Einstein College of Medicine, New York, USA

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Sulagna Das is a Research Assistant Professor at Albert Einstein College of Medicine in New York. Her research interests include studying the spatio-temporal control of gene expression and RNA dynamics in neurons using single molecule imaging approaches. Sulagna obtained her PhD at the National Brain Research Center in India, focused on studying how the CNS responds to Japanese Encephalitis virus infection. Following her PhD, she delved into the dynamics of actin remodeling in cells using single molecule imaging as a post doc in Dr. Ji Yu's lab at the University of Connecticut before joining Dr. Robert Singer's group at Albert Einstein. Here, she developed tools and mouse models to image memory-associated genes from transcription to translation.

Pierluigi Di Matteo

PhD student, Molecular Neurobiology (Fainzilber) Lab

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Pierluigi Di Matteo did his Masters degree in Pisa, working with Prof. Antonino Cattaneo on the endocytic pathways of NGF and proNGF neurotrophins. Currently Pierluigi is doing his PhD studies at the Weizmann Institute of Science under the supervision of Prof. Michael Fainzilber. He is working on the role of PTBP1 in the injury response and regeneration of DRG sensory neurons.



Davide Martino Coda

Postdoctoral Fellow, Neuroepigenetics (Gräff) lab

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Davide Martino Coda earned his PhD in Cell Signalling at the Francis Crick Institute, UK, under the supervision of Dr. Caroline Hill. Since 2019, Davide is working as postdoc at the Ecole Polytechnique Federal de Lausanne, Switzerland, in the lab of Prof. Johannes Gräff. In 2020, he was awarded a long-term postdoctoral fellowship from the Human Frontier Science Program. Davide has a long-standing interest in epigenetics and transcription regulation in the context of cell fate specification and development. More recently, his research focus has switched towards molecular neuroscience to study the epigenetic mechanisms underpinning learning and memory.



Early Career Researcher Speakers



Alexi Nott

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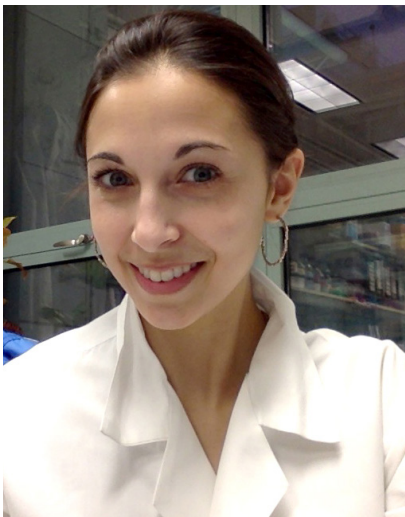
Alexi Nott completed his PhD at University College London investigating the function of epigenetic regulators during brain development. During his postdoctoral fellowship at MIT he investigated the role of epigenetics in postnatal development and autism-related behaviours. His research at the University of California, San Diego examined epigenetic mechanisms underlying age-related brain disorders and he identified microglia as associated with the genetic risk of Alzheimer's disease. Alexi's research uses cell type-specific epigenomic approaches of the human brain to reveal gene networks and chromatin regulators that are impacted by disease-risk variants for neurodegeneration.

Monika Piweka

Principal Investigator

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Elizabeth Pollina

Postdoctoral fellow, Greenberg lab

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Elizabeth Pollina is a postdoctoral fellow in the lab of Dr. Michael Greenberg at Harvard Medical School. Dr. Pollina performed her graduate studies in the lab of Dr. Anne Brunet at Stanford University, where she studied new chromatin signatures associated with cellular identity and aging. As a postdoc, Liz has been identifying novel, neuronal-specific chromatin modifiers and studying their roles in neuronal activity-dependent transcription and DNA repair. Her future work will explore the molecular mechanisms of nervous system longevity and rejuvenation, including pathways that preserve neuronal (epi)-genome integrity during aging.



Sam Rodriques

Group Leader

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Sam Rodriques is an entrepreneur, technologist, and inventor in the biotechnology space. He has invented a new nanofabrication method, a new approach to sensing neural activity with probes in the bloodstream, and new ways to extract spatial and temporal information from RNA sequencing. He founded the Applied Biotechnology Laboratory at the Francis Crick Institute in January 2021 with the goal of combining bioengineering and entrepreneurship to develop and deploy new biotechnologies that address major unmet needs for biology and medicine. Prior to starting his lab, he was an entrepreneur in residence at Petri, a biotech accelerator in Boston, Massachusetts, and a total of four companies have been spun out based on technologies he has invented. In the spring of 2019, he graduated with a PhD in Physics at the Massachusetts Institute of Technology, having worked between the MIT Media Lab, the MIT Department of Brain and Cognitive Sciences and the Broad Institute of Harvard and MIT. He has received numerous national awards and fellowships to support his studies and recognize his research, including the 2019 Stat Wunderkind award, the Hertz Foundation Thesis Prize, the Myhrvold and Havranek Family Charitable Fund Hertz Graduate Fellowship, an NSF Graduate Research Fellowship and a Churchill Scholarship. His lab is developing a broad range of technologies, including new AAV viral vectors, new diagnostic technologies for cancer and Alzheimer's disease, and new ways to map connections between neurons in the brain.

Jose Vincent Sanchez-Mut

Principal Investigator

Neuroscience Institute of Alicante, Spain

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Jose V. Sanchez-Mut received a B.S. in Biology from the University of Valencia (Spain) in 2005 and a PhD in Neurosciences from the Autonomous University of Barcelona (Spain) in 2014. He conducted his postdoctoral studies in the Brain Mind Institute, École Polytechnique Fédérale de Lausanne (Switzerland, from 2014 to 2020) and recently opened his own lab at the Neuroscience Institute of Alicante, Spain. His research focuses on the epigenetic mechanisms implicated in the development and progression of Alzheimer's disease. His lab's ultimate goal is to better understand age-related brain malfunctioning and to identify new biomarkers and targets to further develop current dementia-related therapies.

Early Career Researcher Speakers



Gilda Stefanelli

Postdoctoral Fellow, Zovkic lab

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Gilda Stefanelli got her PhD in Neurobiology at the University of Insubria (Italy) and then moved to Toronto for her postdoc in 2016. Gilda currently studies how regulation of histone variants turn-over regulates transcription and memory formation. In addition to focusing on adult memory formation, she has a deep interest in the events that lead to neuronal development during the early postnatal stages and neurodevelopmental disorders.

Warren Winick-Ng

Postdoctoral Research Associate, Epigenetic Regulation and Chromatin Architecture (Pombo) Group
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Warren Winick-Ng completed his Bachelor and Master of Science degrees at the University of Guelph, Canada. During his PhD training he worked with Dr. Jane Rylett at Western University, Canada, where he identified a human specific protein involved in the chromatin organization of regulatory pathways disrupted in Alzheimer's disease. For Warren's postdoctoral work, he joined Prof. Ana Pombo at the Berlin Institute for Medical Systems Biology, MDC, in Berlin. His research focuses on understanding how specialized genome structures regulate gene expression in complex tissues, such as the brain.



Hyejung Won

Assistant Professor

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Hyejung Won is an Assistant Professor in the Department of Genetics and Neuroscience Center at the University of North Carolina at Chapel Hill. She received her B.S. and Ph.D. in Biology from Korea Advanced Institute of Science and Technology (KAIST), where she conducted research revealing the underlying mechanism of neurodevelopmental conditions using genetically modified mice under the supervision of Dr. Eunjoon Kim. She then joined Dr. Dan Geschwind's group at UCLA, where she established Hi-C, a genome-wide chromosome conformation capture technology, and generated chromatin interaction profiles from the developing and adult human brain. Her lab leverages the genomics approach to bridge the gap between genetic risk factors and neurobiological mechanisms by mapping genetic variants of unknown function to the genes that they regulate, and identifying how dysfunctional gene regulation contributes to disease pathogenesis. Hyejung is the recipient of the NIH Director's New Innovator Award, HHMI Gilliam Fellowship, NIH Pathway to Independence Award, and a NARSAD Young Investigator Award.