

Thursday 21.9.2017

- 9:00 Morning coffee & registration
- 9:20 **Iiris Hovatta**: Opening words
- 9:30 Session 1: Psychedelic drugs
Robin Carhart-Harris (Imperial College London): Psychedelics: therapeutic potential.
Jordi Riba (Biomedical Research Institute of Sant Pau): Two decades of ayahuasca research in humans: what have we learned?
- 12:00 Lunch (2nd floor lobby)
- 13:00 Session 2: Perception
Biyu He (NYU School of Medicine): Large-scale brain dynamics underlying perceptual awareness
Gregor Thut (University of Glasgow): Network activity in the Brain: from correlation to causation.
- 15:30 Posters
wine and snacks
- 17:00-17:30 Arriving to Virgin Oil (Mannerheimintie 5)
- 17:45-18:30 Panel discussion
- 18:30-20:00 Dinner and round-table discussion
- 20:00 Band and DJ

Friday 22.9.2017

- 9:30 Morning coffee
- 10:00 Session 3: Acidity in the brain
John Wemmie (University of Iowa): Acid-sensing ion channels in synaptic transmission, plasticity, and addiction
- 11:20 Workshop: Scientific rigour
Katherine Button (University of Bath): Methods for reproducible science: career sense or suicide?
- 12:30 Lunch (2nd floor lobby)
- 13:30 Session 4: Neural networks
Thomas Euler (University of Tübingen): What the mouse's eye tells the mouse's brain
Jens Hjerling-Leffler (Karolinska Institute): One cell at a time: Single-cell transcriptomics in the study of the brain
- 16:00 Closing words & poster award
- 16:15 B&M students' meeting

INVITED SPEAKERS



Dr. Robin Carhart-Harris leads the Psychedelic Research Group within the Centre for Psychiatry at Imperial College London, where he has designed a number of functional brain imaging studies with psilocybin (magic mushrooms), LSD, MDMA (ecstasy) and DMT (ayahuasca), plus a clinical trial of psilocybin for treatment resistant depression. He has over 45 published papers in peer-reviewed scientific journals; two of which were ranked in the top 100 most impactful academic articles of 2016. Robin's research has featured in major national and international media and he has given a popular TEDx talk.



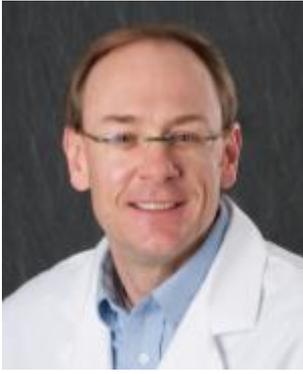
Dr. Jordi Riba holds a PhD in Pharmacology and a Master's Degree in Biomedical Engineering. He is the lead researcher of the Human Neuropsychopharmacology Research Group at Sant Pau Hospital in Barcelona. His research interests include the study of the neurochemical basis of perception, executive function and reward processing in health and in neuropsychiatric disorders. One of his main lines of research focuses on the study of psychoactive drug in humans using neurophysiological and neuroimaging techniques. He has been studying ayahuasca for twenty years and has published around forty journal articles and book chapters on the subject. His current research ranges from the cellular-level effects of ayahuasca alkaloids, to studies in humans assessing the neural and psychological bases of the therapeutic potential of ayahuasca.



Dr. Biyu He attained her B.S. in biology from Tsinghua University, Beijing, China. She received her Ph.D. in Neurosciences from Washington University in St. Louis, where she studied the functional significance and spatiotemporal organization of spontaneous brain activity, as well as the neural basis of the fMRI signal. She was an Early Independent Investigator at the National Institutes of Health before joining NYU. Her laboratory investigates three main research topics: 1) large-scale brain dynamics underlying conscious vs. unconscious processing; 2) interaction between spontaneous and evoked brain activity and nonlinear brain dynamics; 3) functional and generative mechanisms of scale-free brain activity.



Dr. Gregor Thut has an undergraduate and PhD-degree from the Swiss Institute of Technology-Zurich, a background in Neuropsychology, and is currently working at the Center for Cognitive Neuroimaging, University of Glasgow. His research interfaces human electrophysiology and non-invasive transcranial brain stimulation, with an emphasis on how dynamic network activity in the human brain, inferred from brain oscillations, relate to perception, attention and cognition. His goal is to develop the existing intervention techniques into more powerful neuroscience tools and clinically effective protocols, to manipulate and better understand the brain-behaviour relationship and the underlying neural processes.



Dr. John Wemmie MD PhD is the Roy J. Carver Chair of Psychiatry and Neuroscience, and the Associate Director of the Iowa Neuroscience Institute, at the University of Iowa, in Iowa City, Iowa, USA. Dr. Wemmie is also a practicing psychiatrist at the Veteran's Affairs Hospital in Iowa City. His research focuses on brain pH and Acid Sensing Ion Channels (ASICs) in brain function, behavior and disease. Through these studies, Dr. Wemmie has identified roles of ASICs in synaptic transmission and plasticity, and on fear and addiction-related behaviors. His recent efforts have included developing novel imaging approaches for monitoring pH dynamics in the human brain.



Dr. Kathrine Button is a Lecturer in Clinical Psychology in the Department of Psychology at the University of Bath. Her research focuses on understanding the cognitive mechanisms underlying anxiety and depression, and their treatment. She uses a range of research methods including techniques from cognitive psychology and neuroscience to explore these cognitive mechanisms, through to epidemiological investigations to understand how dysfunctional cognitions arise. She also works with clinical data from randomised controlled trials and national clinical databases to investigate factors associated with response to cognitive treatments. In addition to her primary research, she is an advocate for improving the transparency and rigor of psychological research. She uses meta-analytic techniques to explore systematic weakness in the evidence-base, and draws on best-practice across disciplines for solutions.



Dr. Thomas Euler is a professor at the Institute for Ophthalmic Research and the Center for Integrative Neuroscience (CIN) (University of Tübingen, Germany). After his PhD (University of Mainz, Max-Planck Institute for Brain Research, Frankfurt), he worked as a postdoc in the laboratory of Richard Masland (Massachusetts General Hospital/Harvard Medical School, Boston) and later at the University of Heidelberg with Winfried Denk – the inventor of two-photon microscopy. Currently Thomas Euler is one of the world leaders in studying the signal processing in the neural circuits of the retina. Retina's well-defined structure represents an outstanding system to study neural processing in the brain. Dr. Euler's work aims to unravel the function and organization of retinal microcircuits and to gain a better understanding of the underlying computational rules, by combining state-of-the-art imaging techniques and electrophysiology. The real cornerstone technique in the Euler lab is two-photon microscopy, which they use to image light-driven activity in retinal neurons - from the level of the individual synapses to the population level.



Dr. Jens Hjerling-Leffler is an associate professor and group leader at the Department of Medical Biochemistry and Biophysics of Karolinska Institute, Sweden. Being mathematician and biochemist in basic education, he completed two post-doctoral trainings in Martin Koltzenburg lab (Institute of Child Health, UCL, London, UK) and Gordon Fishel lab (NYU School of Medicine, New York, USA), and after that headed his own lab in Karolinska Institute. The research of his group is focused on genetic and cellular mechanisms of the maturation and function of the brain's inhibitory system. They apply advanced mouse genetics in combination with electrophysiology and modern molecular methods, including single-cell sequencing, patch-seq and RNA-scope, to probe the function of individual cell types as well as study the circuit basis of their function.

POSTERS

Presenting author	Poster title
Amr Abou Elezz	All filaments are equal, but some filaments are more equal than others
Eduard Daura Sarroca	Cystatin B-deficient mouse neural stem cells present epigenetic alterations in the context of neuronal differentiation.
Elena de Miguel	A role of the oval BNST CRF neurons in the reward-related neuroplasticity and the conditioned aversion
Hamed Haque	Neural correlates of conscious visual perception
Joonas Iivanainen	On-scalp MEG: Measurement of visually induced gamma-band responses with an optically-pumped magnetometer
Amit Kumar Jaiswal	Development of a standard beamforming pipeline for MEG source localization
Mikaela Laine	Glial cells in the transcriptomic response to chronic psychosocial stress exposure in two inbred mouse strains
Sakari Leino	Characterizing the role of the $\alpha 5$ nicotinic receptor subunit in a mouse model of Parkinson's disease and levodopa-induced dyskinesia
Arun Kumar Mahato	Neurorestorative effects of diol-epoxide in Parkinson disease
Marie Mennesson	NETO2 regulates fear memory expression in mice
Elina Nagaeva	Electrophysiological subtypes of somatostatin-positive GABA neurons in the mouse midbrain
Ester Orav	NETO1/Kainate receptor complex regulates the development of glutamatergic connectivity in the hippocampus
Sonja Paetau	Neurons give microglia a high five, microglia say Yes I CAM!
Ulla-Kaisa Peteri	Generation of human astrocyte cell lines to model fragile X syndrome
Sami Piirainen	Microglia undergo adaptive changes in association with a beneficial behavioral response to chronic restraint stress
Andrei Rodionov	Can long-term paired associative stimulation (PAS) return normal hand function after spinal cord injury
Jaana Simola	Critical dynamics in resting state oscillatory brain activity is associated with dopamine-related polymorphism
Reetta Sipilä	Anger expression and its relation to depression, anxiety, and pain in patients treated for breast Cancer
Lina Smeds	Vision at its sensitivity limit: linking retinal circuit function with behavior
Inkeri Spoljaric	KCC2 modulates spontaneous network activity in the perinatal mouse and rat hippocampus
Juulia Suvilehto	Cultural universalism in social touch
Anja Thiede	Atypical speech sound processing in newborns with familial risk for dyslexia
Ivan Zubarev	Automated single-trial analysis of evoked responses in electro- and magnetoencephalography