

Spotlight on Neuroscience | Intracellular trafficking

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Dr. David Rubinsztein

University of Cambridge

Prof. David Rubinsztein is the Professor of Molecular Neurogenetics and a UK Dementia Research Institute Professor at the University of Cambridge. He is Deputy Director of the Cambridge Institute for Medical Research. Prof. Rubinsztein earned his MB ChB, BSc(Med)Hons, and PhD degrees from University of Cape Town. He came to Cambridge in 1993 as a Senior Registrar in genetic pathology and was the first person to complete formal training in this field in the UK. His research is focused on the field of autophagy, particularly in the context of neurodegenerative diseases. His laboratory pioneered the strategy of autophagy upregulation as a possible therapeutic approach in various neurodegenerative diseases and has identified drugs and novel pathways that may be exploited for this objective. He has made contributions that reveal the relevance of autophagy defects as a disease mechanism and to the basic cell biology of this important catabolic process. David Rubinsztein was elected Fellow of the Academy of Medical Sciences (2004), EMBO member (2011) and Fellow of the Royal Society (2017). He was awarded the Graham Bull Prize (2007), Thudichum Medal (2017), Roger de Spoelberch prize (2017) and the Goudie Medal (2020).



Dr. Thierry Galli

Université Paris

Thierry Galli is a former student of Ecole Normale Supérieure of Saint-Cloud/Lyon. He received his BSc in Biochemistry at the University Pierre and Marie Curie, Paris, in 1988, and his PhD under the supervision of Prof. Jacques Glowinski at the Collège de France and the University Pierre and Marie Curie, Paris, in 1992. He then moved to the USA to carry out postdoctoral research in Prof. Pietro De Camilli's laboratory at Yale University School of Medicine. There he worked on the molecular mechanism of regulated and constitutive exocytosis. In 1995, he took his first research appointment at the French National Institute of Health (INSERM) and the Curie Institute in the laboratory of Prof. Daniel Louvard, and in 2001 he was recruited as Research Director of the French National Institute of Health at the Fer-à-Moulin Institute, Paris. In 2005, he was appointed as a Group Leader at the Jacques Monod Institute, Paris. Since 2018, his team is at the Institute of Psychiatry & Neurosciences of Paris.

His research focuses on the role of SNARE proteins in neuronal cell differentiation, with particular emphasis on the tetanus neurotoxin-sensitive routes, mediated by cellubrevin/VAMP3 and synaptobrevin/VAMP1,2, the tetanus neurotoxin-insensitive routes mediated by TI-VAMP/VAMP7 and ER-plasma membrane contact sites regulated by Sec22b. He carried out seminal work on the secretory pathway mediated by VAMP7 leading particularly to the discovery of its role in the brain and immune system. He recently proposed a new mechanisms of membrane expansion in neurite growth based on non-vesicular transport of lipids at ER-plasma membrane contact sites and secretory reticulophagy.



Dr. Ira Milosevic

Wellcome Centre for Human Genetics,
Nuffield Department of Medicine, University
of Oxford, Oxford UK

Ira Milosevic is a cell biologist and physiologist who studies organelle acidification and trafficking in neuronal cells to comprehend the molecular underpinnings of synaptic function and of processes that fail in the brain during ageing and neurodegeneration. She graduated from the University of Zagreb (Croatia) in 2001 and did her PhD on the role of phospholipids in exocytosis at the Max Planck Institute (Göttingen, Germany). Subsequently, she worked on the role of membrane-curvature sensors/generators in endocytosis and contributed to ER-plasma membrane tethering principles as an EMBO postdoctoral fellow at Yale University School of Medicine (New Haven, CT, USA).

In 2013, Ira was awarded the E. Noether Young Investigator Award from the German Research Council to establish an independent laboratory at the European Neuroscience Institute in Germany. Her group relocated to the University of Oxford, Wellcome Center for Human Genetics (Oxford, UK) in 2020, where Ira was appointed Associate Professor and works as John Black Senior Research Fellow. The present focus of her group is to understand the mechanisms of synaptic vesicle acidification and recycling using physiology and cell biology-based approaches. The group is also working on how selected synaptic functions (e.g. plasticity) can be improved, e.g., by lifting negative regulation of neurotransmission.



Dr. Ana Maria Cuervo

Albert Einstein College of Medicine

Dr. Ana María Cuervo obtained her M.D. and Ph.D. in Biochemistry and Molecular biology from the University of Valencia (Spain) and received postdoctoral training at Tufts University in Boston. In 2002, she started her laboratory at Albert Einstein College of Medicine, where she is now co-director of the Institute for Aging Research.

She is a recognized leader in the field of protein degradation and the biology of aging for her work on the impact of autophagy on aging and age-related disorders, with emphasis in neurodegeneration.

Dr. Cuervo has been the recipient of prestigious awards, including the P. Benson Award in Cell Biology, the Keith Porter, the Nathan Shock, the Vincent Cristofalo, the Bennett J. Cohen in Aging Biology, the Marshall Horwitz Prize, and the Saul Korey Prize in Translational Medicine. Dr. Cuervo has delivered prominent lectures such as the Robert R. Konh, the NIH Director's, the Roy Walford, the Feodor Lynen, the Margaret Pittman, the SEBBM L'Oreal-UNESCO for Women in Science or the Harvey Lecture.

Dr. Cuervo is elected member of the Valencian Royal Academy of Medicine, the Spanish Royal Academy of Sciences, the American Academy of Arts and Sciences and the National Academy of Sciences.