

ENB Elite Master Program Neuroengineering (MSNE)

Invited Presentation

Prof. Dr. Marc Spehr

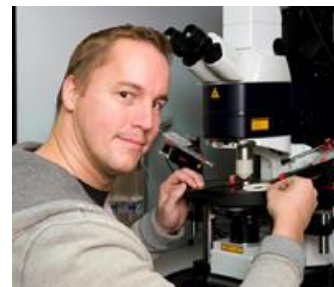
Chemosensory Mechanisms of Conspecific Communication

Abstract

In most mammals, conspecific chemical communication controls complex behaviors. Information about individuality, social and reproductive status is conveyed by an elusive class of chemical cues – pheromones. The highly reproducible character of pheromone responses offers a unique opportunity to uncover the neuronal basis of genetically programmed behavior. Despite its fundamental significance, however, the basic chemosensory mechanisms of social communication remain largely unknown. To address these issues, my laboratory has developed a multi-faceted approach to uncover the mechanisms underlying mammalian pheromone sensing. My research, therefore, focuses on the molecular and cellular architecture of chemosensory communication in conspecific mammals – an innovative and interdisciplinary field of neurobiology. Combining molecular, biochemical, (electro)physiological, and live-cell imaging methods, as well as behavioral techniques in wildtype and mutant mouse models, my research challenges existing models of signal transduction in the olfactory system, analyzes the principle coding logic of pheromone detection, and, thus, sheds light on the neurophysiological basis of social behavior.

Biography

Marc Spehr is a Lichtenberg-Professor and head of the Chemosensation Laboratory at RWTH Aachen University in Aachen, Germany. He received his Diploma in biology as well as his Ph.D. (summa cum laude) from Ruhr-University Bochum, Germany. As a graduate student, Marc Spehr analyzed chemosensory signaling pathways in the mouse main and accessory olfactory systems. For his postdoctoral training he joined the group of Frank Zufall at University of Maryland School of Medicine in Baltimore, USA, where he investigated the role of the olfactory system in social recognition. In 2006, he was awarded an Emmy Noether grant by the German Research Council and returned to Ruhr-University Bochum as a principal investigator. As PI, his interests focused on the largely enigmatic function of pheromones in conspecific chemical communication. In wildtype and mutant mouse models, Marc Spehr addressed questions of both pheromone detection in the periphery and pheromone processing in the brain. In 2009, he was appointed a Lichtenberg-Professor of the Volkswagen Foundation at RWTH Aachen University where his laboratory continues to study the coding logic of pheromone detection and neurophysiological basis of social behavior.



Time and Venue

Talk is hosted by the Neuroelectronics group (Prof. Wolfrum).

Wednesday, January 10th 2018, 17h00

Theresienstr. 90, 80333 Munich, room N1135

All talks in the MSNE Invited Speaker Series are open to students, staff, and members of the public. Attendance is free.

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