

SEEWIESEN

LECTURE SERIES

FALL/WINTER 2019/2020



THURSDAY | February 20th, 2020 | 13.00 | HOUSE 4 LECTURE ROOM

ILONA GRUNWALD KADOW

TUM Munich | Host: Baldwin Research Group

How internal states and needs shape perception and behaviour

When interacting with their environment animals constantly make decisions. These decisions frequently aim at maximizing reward while avoiding negative consequences such as energy costs, pain, or long-term disadvantages. Faced with a choice, animals consider and integrate several parameters such as their internal and behavioral state as well as external stimuli. Often decisions are shaped by prior experiences such as exposure to a given stimulus in a certain condition. But preferences and aversions can be innate, and an instinctive reaction can be essential to secure survival. Nevertheless, even these innate preferences need to be evaluated in a context-dependent manner and hence, context strongly impinges on behavior. While it is generally accepted that context influences behavior, our knowledge of the neural mechanisms of how internal state and external conditions alter ongoing behavior is scarce. The goal of my research is to provide a comprehensive understanding of the neural and molecular basis of context-specific behavior. To this end, my group studies how internal states shape chemosensory processing and behavior of the fly.

WHO IS ILONA GRUNWALD KADOW?

CURRICULUM VITAE

Studies of Biology, University of Göttingen, Germany, and University of California, San Diego, U.S.A. Diploma in 1999.

Ph.D. work at the EMBL and MPI of Neurobiology in the lab of Prof. R. Klein.

Ph.D. degree, University of Heidelberg in 2002.

Postdoct. fellow in the lab of Prof. L. Zipursky, Univ. of California, Los Angeles, U.S.A. and at the MPI of Neurobiology (2003-2008).

Emmy-Noether- and later Max Planck Research Group leader at the MPI of Neurobiology (2008-2016)

Since 2017 Professor at the Technical University of Munich, TUM School of Life Sciences

HONORS AND AWARDS

2002 Otto-Hahn-Medal of the Max-Planck-Society

2008 Emmy Noether grant of the German research foundation

2008 Human frontiers science organization career development award

2012 EMBO Young Investigator

2014 ERC Starting Grant

SELECTED PUBLICATIONS

- Sayin S, De Backer JF, Wosniack ME, Lewis L, Siju KP, Frisch LM, Schlegel P, Edmondson-Stait A, Sharifi N, Fisher CB, Calle-Schuler S, Lauritzen S, Bock D, Costa M, Jefferis GSXE, Gjorgjieva J, Grunwald Kadow IC. A neural circuit arbitrates between perseverance and withdrawal in hungry *Drosophila*. *Neuron*, online Aug 27 2019.
- Grunwald Kadow IC (2018). State-dependent plasticity of innate behavior in fruit flies. *Current Opinion in Neurobiology*, 2018 Sep 13;54:60-65.
- Hussain A*, Zhang M*, Üçpunar HK, Svensson T, Quillery E, Gompel N, Ignell R, Grunwald Kadow IC (2016). Ionotropic chemosensory receptors mediate the taste and smell of polyamines. *PLoS Biology* 14:e1002454. doi:10.1371
- Hussain A*, Üçpunar HK*, Zhang M, Loschek LF, Grunwald Kadow IC (2016). Neuropeptides modulate female chemosensory processing upon mating in *Drosophila*. *PLoS Biology* 14:e1002455. doi: 10.1371.* equal contribution
- Lewis L, Siju KP, Aso Y, Friedrich AB, Bulteel AJB, Rubin GM, Grunwald Kadow IC (2015). A higher brain circuit for immediate integration of conflicting sensory information in *Drosophila*. *Current Biology* PMID: 26299514, doi: 10.1016/j.cub.2015.07.015

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