Introductory Remarks to Symposium 1

Olfactory processing and behavior across the vertebrate/insect divide: communalities and differences

Giovanni C. Galizia and Sigrun Korsching, Kostanz and Cologne

Recent years have seen huge advances in our knowledge how odors are encoded in the nervous system, from olfactory receptors via neural networks coding odor identity, mixture components, and concentration, to odor-elicited behavior and memory. One driving force for this remarkable progress comes from comparing different species and different olfactory receptor gene families both within and between species. Processing in olfactory neural networks uses common themes, e.g. olfactory glomeruli as structural and functional units across phyla as distant as insects and vertebrates. In both phyla, olfactory behavior can rely on innate circuitry (such as host finding in mosquitoes, or pheromone communication) or be learned. The underlying theme of this symposium will be how odors control behavior in both vertebrates and invertebrates: Lisa Stowers from Scripps and Stephen Liberles from Harvard will explain how pheromones control mice behavior, from receptors and neural networks all the way to behavior. Ilona Kadow and Matthew DeGennaro will report about a conundrum of odor coding in insects - how can odors that have an innate meaning nevertheless elicit flexible behavior? This question will be investigated in fruit flies and mosquitoes.

This symposium is thematically linked to a satellite symposium about integrative analysis of olfactory coding on 21.03.2017, reporting from research in seven years of a DFG-funded priority research program: a satellite open to everybody interested.

Symposium 1

Wednesday, March 21, 2017
14:30 – 16:30, Lecture Hall 105

Chairs: *Giovanni Galizia and Sigrun Korsching, Kostanz and Cologne*

14:30 **Opening Remarks**

14.35 Lisa Stowers, San Diego, USA
LEVERAGING OLFACTION TO STUDY SOCIAL BEHAVIOR IN THE MOUSE (S1-1)

15:00 Stephen Liberles, Boston, USA
OLFACTORY CONTROL OF BEHAVIOR (S1-2)

15:25 Lutz Wallhorn, Aachen
FUNCTIONAL PROPERTIES OF FEEDBACK PROJECTIONS FROM THE ANTERIOR OLFACTORY NUCLEUS TO THE MOUSE OLFACTORY BULB (S1-3)

15:35 Ilona Grunwald Kadow, Martinsried
MAPPING CIRCUITS FOR FLEXIBLE BEHAVIOR USING DROSOPHILA CHEMOSENSATION (S1-4)

16:00 Matthew DeGennaro, Miami, USA
GENETIC ANALYSIS OF AEDES AEGYPTI'S ATTRACTION TO PLANT AND HUMAN HOSTS (S1-5)

16:25 **Concluding Remarks**