

Introductory Remarks to Symposium 19

Visual processing in social behaviors

Clara Ferreira, Johannes Larsch and Inês M.A. Ribeiro, Newcastle-upon-Tyne (UK), Lausanne (Switzerland) and Munich

Coordination among animals, ranging from dyadic interactions to collective motion in groups, relies on sensory detection of social signals. While olfactory communication has traditionally taken a centre stage in studies of intra-specific interactions, recent advances in experimental designs uncovered visual features as potent social cues in several animal species. Biological motion is a special class of visual cues emerging from stereotypic movements of animals that has been described as a universal life detector. Recent work implicates biological motion as a key driver of complex tasks such as recognition of conspecifics and inference of emotional states. This provides exciting entry points to investigate the underlying neural circuits that detect biological motion to guide social behaviors.

This symposium explores principles of visual processing of social motion signals across social behaviours and the animal kingdom from flies and fish to primates and humans, using diverse methodological approaches. We will examine visual cues that elicit social responses and discuss how such complex stimuli can be deconstructed experimentally to access to the neural circuits for sensory processing. Akhila Mudunuri will set the scene on social behavior, characterizing sensory information that underlies the decision to group or disperse. Clara Ferreira will report on how flies of both sexes use social motion cues in a predation context to infer safety/threat. Johannes Larsch will present how changes in the perception of visual cues in affiliative behaviours in zebrafish relate to individual differences in behavior. Winrich Freiwald will discuss the neural circuits and mechanisms underlying the perception of facial dynamics in macaques. Finally, Marina Pavlova will provide an overview of the roles for visual cues in reading face and body language in humans. By exploring visually-guided interactions across levels of complexity and species, this symposium will highlight widespread, if understudied, perceptual mechanisms underlying social behaviours.

Symposium 19

Friday, March 28, 2025
11:30 - 13:30, Lecture Hall 101

Chairs:

Clara Ferreira, Johannes Larsch and Inês M.A. Ribeiro, Newcastle-upon-Tyne (UK), Lausanne (Switzerland) and Munich

- 11:30 **Opening Remarks**
- 11:35 Akhila Mudunuri, Konstanz
SOCIAL DISTANCING: GROUP BEHAVIOR AND THE UNDERLYING NEURAL CIRCUITS IN *DROSOPHILA MELANOGASTER* LARVAE (S19-1)
- 11:50 Clara Ferreira, Newcastle upon Tyne, UK
SEX DIFFERENCES IN MODULATION OF DEFENSIVE BEHAVIOURS BY SOCIAL MOTION (S19-2)
- 12:15 Johannes Larsch, Lausanne, Switzerland
NEURAL CIRCUITS FOR SOCIAL AFFILIATION IN ZEBRAFISH (S19-3)
- 12:40 Winrich Freiwald, New York, USA
FROM FACE PERCEPTION TO SOCIAL COGNITION (S19-4)
- 13:05 Marina Pavlova, Tuebingen
SEX, TIME AND THE SOCIAL BRAIN (S19-5)