

## SPECIAL SESSION

### Fish in Behaviour Research: Unique Tools with a Great Promise!

Chair: Robert Gerlai

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#### Abstract

Zebrafish are becoming increasingly popular in behavioural brain research as this species offers good translational relevance and has several genetic and biological techniques developed for it. Other species of fish may also have utility in behavioural research as their analysis can not only shed light on interesting species-specific characteristics but also allow the investigator to examine complex behavioural phenomena in a simpler, evolutionarily older “design”, and thus make conclusions about how our own behaviour may have evolved. The current symposium will have five speakers. Dr. Gerlach will talk about olfactory imprinting in coral reef fish and zebrafish and will discuss both the ecological and neurobiological aspect of her research. Dr. Agrillo will review findings on numerical abilities in fish presenting data obtained with the use of behavioural paradigms developed for fish species. These paradigms include spontaneous choice tasks as well as operant conditioning methods. Ms. Buske will describe how social behavior develops in zebrafish and how dynamic changes in shoaling may be quantified using video-tracking systems. Dr. Cretton will present his novel hardware and software solutions as to how to quantify larval zebrafish behavior including anxiety-like responses. Dr. Merlin will present his research on modeling and analyzing attention deficit hyperactivity disorders using zebrafish. Last, Dr. Gerlai will examine social affiliation, and how one can induce group cohesion using computer animated stimuli. He will also present data on the neurobiological mechanisms of group cohesion in zebrafish.

#### SPECIAL SESSION CONTENTS (sorted by paper ID)

##### **Social Affiliation in Zebrafish: From Synthetic Images to Biological Mechanisms**

Robert Gerlai (University of Toronto Mississauga, Canada)

##### **Diving Deeper into Zebrafish Development of Social Behavior: Analyzing High Resolution Data**

Christine Buske and Robert Gerlai (University of Toronto, Canada)

##### **Zebrafish Assays to Measure ADHD Endophenotypes**

Merlin Lange, W.H.J. Norton, M. Chaminade, P. Vernier, L. Bally-Cuif (CNRS, Gif-Sur-Yvette, France), K.P. Lesch (University of Würzburg, Germany)

##### **Automated Analyses of Behavior in Zebrafish Larvae**

Robbert Creton, Sean D. Pelkowski, Holly A. Richendrfer, and Ruth M. Colwill (Brown University, USA)

##### **Fish as a Model to Study Non-Verbal Numerical Abilities**

Christian Agrillo, Maria Elena Miletto Petrazzini, Laura Piffer, Marco Dadda and Angelo Bisazza (University of Padova, Italy)

##### **Olfactory Signals Involved in Kin Recognition in Zebrafish**

Gabriele Gerlach and Cornelia Hinz (Carl von Ossietzky University, Germany)