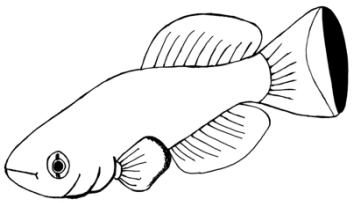
4th Nothobranchius Symposium, 3-4 June 2021



THURSDAY 3 June

9:00 - 9:15 Welcome and introduction (including technical introduction)

9:15 - 10:10 Plenary Lecture by **Jason Podrabsky**: Embryo development and diapause in annual killifish (and beyond) 40 min + 15 min discussion

*** Student talks are labelled in red ***Sponsor talks are in green

10:15 - 11:20 Ageing phenotype (3 talks for 15+5 min) Chair: CELLERINO

- Dissecting aging piece by piece: how proteasome inhibition contributes to the onset of brain aging phenotypes in the turquoise killifish. (Kelmer Sacramento E.)
- Analysis of methylation dynamics reveals a tissue-specific, age-dependent decline in 5 methylcytosine within the genome of the vertebrate aging model *Nothobranchius furzeri*. (Pusch O.)
- Sponsor talk - Tecniplast (5 min)
- Sustained AMPK-γ1 complex activity prevents age-related metabolic disorders and promotes longevity in killifish. (Ripa R.)

11:30 - 12:55 Brain aging and neuroscience (4 talks for 15+5 min) 3 student talks Chair: ENGLERT

- Aging is associated with a degeneration of locus coeruleus neurons, but not dopaminergic neurons, in the short-lived killifish *Nothobranchius furzeri*. (Bagnoli S.)
- The killifish visual system: an in vivo model to investigate age-related phenomena and rejuvenating strategies in the central nervous system. (Bergmans S.)
- Sponsor talk – VisualSonic (5 min)
- Improving neurorepair in the aged brain, what the killifish pallium can tell. (Van houcke J.)
- Single cell transcriptomics analyses unravel the heterogeneous progenitor and neuron landscape in the adult killifish (*N. furzeri*) brain. (Ayana R.)

12:55 - 14:00 LUNCH BREAK

14:00 - 15:25 Homeostasis and healthspan (4 talks for 15+5 min) 1 student talk Chair: ARCKENS

- Identification of protein aggregates with prion-like and phase separation properties in the aging vertebrate brain. (Harel I.)
- Anatomy and tissue homeostasis of the gut tube of the turquoise killifish. (Schöfer C.)
- Sponsor talk - Aquaneering (5 min)
- RNA-seq analysis of aging in *Nothobranchius furzeri*: effects of genetic background and captive vs. wild environment. (Mazzetto M.)
- Health span effects of metformin are potentially sex specific. (Martirosyan A.)

15:40 - 16:30 SPEED TALKS (for 16 posters, each 2 min) includes Microbiotest (5 min) and Loligo (5 min)
List of speed talks is provided on page 3 of this document, along with designated time plan for sponsor talks

16:35 - 18:00 POSTER SESSION (break-out rooms for 16 posters, and for 5 sponsors)

18:15 - 20:00 Break-out rooms (topical, personal)

FRIDAY 4 June

9:00 - 9:05 Introduction and technical issues

9:05 - 10:05 Biorhythms and regeneration Chair: VALENZANO

- A core circadian clock network in the turquoise killifish. (Lee S., Kim Y.)
- Enhancers and the uneven distribution of regenerative capacities in vertebrates. (Wang W.)
- Mechanisms of aging-induced decline in wound-healing. (Paatero I.)

10:15 - 10:45 Sex determination Chair: VALENZANO

- Cytogenomics of *Nothobranchius furzeri* and *N. kadleci*: sex chromosomes and repetitive DNA dynamics. (Sember A.)
- Beyond gdf6Y – elucidating the determination and development of sex in the annual turquoise killifish *Nothobranchius furzeri*. (Richter A.)

10:50 - 11:30 Tools and applications 1 student talk Chair: TERZIBASI

- Generating a transparent vertebrate model for in vivo applications in aging research. (Krug J.)
- In vitro fertilization, blood extraction from live animals and in-tank fish tracking in *N. furzeri*. (Dolfi L.)

11:40 - 12:20 Husbandry 1 student talk Chair: TERZIBASI

- Behind the scenes of successful aging research. (Hoppe B.)
- Are bloodworms optimal feed for laboratory *Nothobranchius furzeri*? (Žák J.)

12:20 - 13:30 LUNCH BREAK

13:30 - 14:50 Diapause and embryo development Chair: BEREZIKOV

- Natural course of embryo development in the wild populations of African *Nothobranchius* and American *Austrolebias* species. (Polačik M.).
- Plasticities within and across generations in *Austrolebias* annual killifish. (Van Dooren T.J.M.)
- Axis formation in annual killifish: Nodal coordinates morphogenesis in absence of Huluwa prepatterning. (Abitua P.B.)
- The genome of the bi-annual Rio Pearlfish (*Nematolebias whitei*) informs the genetic regulation of diapause and environmentally-cued hatching in extreme environments. (Thompson A.W.)

15:10 - 16:10 Behaviour 1 student talk Chair: PHILIPPE

- Body coloration, aggression and learning in *Nothobranchius guentheri.* (Demidova T.)
- Turquoise killifish on antidepressants: towards understanding the ecological risks of neurochemical pollution. (Thoré E.S.J.)
- *Nothobranchius furzeri* as an emerging model for mate choice: female choice revealed by animations. (Johnson B.D.)

16:10 - 16:40 Final remarks, Best student talk and poster – poll and results

16:50 - 19:00 General discussion, Break-out rooms available (topical, personal)

SPEED TALKS FOR POSTERS (10 student posters)

Starts 15:40. Each speed talk lasts 2 min, questions relegated to Poster session afterwards

Giannuzzi C. Multiomics longitudinal study of aging in *Nothobranchius furzeri*.

Ballhysa E. Deciphering the interplay between nucleic acid surveillance pathways, inflammation and vertebrate healthspan.

Borgonovo J. Organization of the catecholaminergic system in the short-lived fish *Nothobranchius furzeri*.

Reuter H. Analysis of the development and regeneration of the killifish heart.

Vrtílek M. Trade-off between the rate of embryonic development and adult growth plasticity in *N. furzeri*.

Hassan S. Differential expression of transcriptome and proteome in developing and diapause embryos of turquoise killifish.

Sponsor talk Microbiotest (5 min) Assumed 15:52 - 15:57

Sánchez W. N-Cadherin affects mitotic index and epithelial cell shape during early morphogenesis in killifish embryos.

Godinho Ferreira M. Lifespan and telomere length variation across wild-derived African killifish populations.

Součková K. Establishment of cell lines from embryos of *Nothobranchius* annual killifish.

Brogi L. *Nothobranchius furzeri* organotypic cultures: towards a model of ex vivo brain aging.

Wittorski A. An automated shuttle test for cognition evaluation in fishes.

Rivas N. Strength of reproductive isolation between *Austrolebias reicherti* and *A. charrua* varies depending on life expectancies.

Sponsor talk Loligo (5 min) Assumed 16:10 - 16:15

Blažek R. *Mycobacterium* infection and *N. furzeri* survival.

Vanhunsel S. The age factor in optic nerve regeneration: intrinsic and extrinsic barriers hinder successful functional recovery in killifish.

Zandecki C. Characterization of progenitor diversity in the aging brain with the use of a killifish transgenic toolbox.

Mariën V. A deep dive in the aged killifish brain: ameliorating functionality of newborn neurons.

Expected to finish at 16:30 (with approximately 10 min of extra reserved time)