Bio@SNS Symposium Series:

From bush to bench: 10 years of *Nothobranchius furzeri* as a model system in Biology

Scientific committee:

Alessandro CELLERINO, *Scuola Normale Superiore, Pisa, Italy*

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Martin REICHARD, *Institute of Vertebrate Biology, Czech Academy of Sciences, Cech Republic;*

Matthias PLATZER, *Fritz Lipmann Institute for Age Research, Jena, Germany*

Dario Riccardo VALENZANO, *Max Planck Institute for Biology of Ageing, Cologne, Germany*

Organization:

Eva TERZIBASI TOZZINI, *Scuola Normale Superiore, Pisa, Italy*

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Ten years ago, Nothobranchius furzeri was described as the shortest-lived vertebrate. In the last ten years, this species moved from zoological curiosity to a versatile model organism to study development and aging. This symposium is the first occasion when the growing international Nothobranchius research community will meet and discuss all recent developments in genetics, cell biology, transgenesis, physiology, regeneration, pathology and evolution of this fascinating organism.

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FREE REGISTRATION

http://laboratoriobiologia.sns.it/nothobranchius_registration/

From bush to bench:

10 years of *Nothobranchius furzeri* as a model system in Biology

General program

6th February

15:00 Registration
15:30 **Welcome & Official Opening of the Symposium: Prof. Luigi Ambrosio** (Dean of the Science Faculty, SNS) and Dr. **Alessandro Cellerino** (SNS)
16:00 **Plenary lecture: Fish models of human diseases** **M. Schartl** (Dept. Physiological Chemistry, University of Wuerzburg)
17:00 coffee-break
17:30 **Session I: *Nothobranchius* ecology and evolution** Chair: **M. Reichard** (Institute of Vertebrate Biology AS CR)
20:00 dinner (SNS Canteen)

7th February

08:30 **Session II: *Nothobranchius* genetics I** Chair: **M. Platzer** (Leibniz Institute for Age Research – FLI, Jena)
10:00 coffee-break
10:30 **Session III: *Nothobranchius* genetics II** Chair: **D. Valenzano** (Max Planck Institute for Biology of Ageing, Colonia)
13:00 lunch (SNS Canteen)
14:00 **poster session**
14:45 **Session IV: *Nothobranchius* development & trans-genesis** Chair: **C. Englert** (Leibniz Institute for Age Research – FLI, Jena)
17:00 coffee-break
17:30 **Session V: *Nothobranchius* anatomy, pathology & regeneration** Chair: **A. Cellerino** (SNS)
20:00 dinner (SNS Canteen)

8th February

09:00 **Session VI: *Nothobranchius* metabolism and physiology** - Chair: **C. LeFrançois** (LIENSs, CNRS/ Univ. of La Rochelle)
11:00 coffee-break
11:30 **poster session**
13:00 lunch (SNS Canteen)
14:00 **Technical session: fish housing systems** **Session VII:** Chair: **E.Terzibasi Tozzini**
15:00 Round Table
16:45 **Conclusions Prof. Antonino Cattaneo (Director of the Laboratory of Biology of the Scuola Normale Superiore)**
17:00 Tour and Social Dinner: Museo di Storia Naturale, Certosa di Calci

Sessions program

6th February

Session I: *Nothobranchius* ecology and evolution
Chair: **M. Reichard**

17:30-18:15 Martin Reichard, Institute of Vertebrate Biology, Czech Academy of Sciences - **Evolutionary ecology of *Nothobranchius furzeri* in Mozambique: an overview of field and laboratory research**
18:15-18:45 Alexander Dorn - **Phylogeny and biogeography of the genus *Nothobranchius***
18:45-19:00 Radim Blazek, Institute of Vertebrate Biology, Czech Academy of Sciences - **Life history evolution in *Nothobranchius spp.*: large scale common garden experiment**
19:00-19:15 Milan Vrtilek, Institute of Vertebrate Biology, Czech Academy of Sciences - **Reproductive allotment in *Nothobranchius furzeri*: field and experimental data**
19:15-19:45 Matej Polacik, Institute of Vertebrate Biology, Czech Academy of Sciences - **Alternative life history strategies in *Nothobranchius furzeri***
20:00 dinner (SNS Canteen)

7th February

Session II: *Nothobranchius* genetics I
Chair: **M. Platzer**

08:30-09:00 Bryan Downie, Leibniz-Institute for Age Research (FLI, Jena) - ***Nothobranchius furzeri* genome assembly**
09:00-09:45 Matthias Platzer, Leibniz-Institute for Age Research (FLI, Jena) - **Genome Analysis of *Nothobranchius furzeri***
09:45-10:15 Kathrin Reichwald, Leibniz-Institute for Age Research (FLI, Jena) –
10:15-10:45 coffee-break

Session III: *Nothobranchius* genetics II
Chair: **D. Valenzano**

10:45-11:30 Dario Riccardo Valenzano, Max-Planck Institute for Biology of Ageing, Cologne - **Investigating the genetic architecture of simple and complex phenotypic traits in the Turquoise Killifish**
11:30-12:00 Enoch Ng'oma, Leibniz-Institute for Age Research (FLI, Jena) **Genetic mapping of tail pigmentation and age-related phenotypes in *Nothobranchius spp.***
12:00-12:45 Alessandro Cellerino, Scuola Normale Superiore, Pisa - **Transcriptomic of *Nothobranchius furzeri***
12:45-13:15 Mario Baumgart, Leibniz Institute for Age Research (FLI), Jena **Small RNAs in Nothobranchius and regulation during ageing**
13:15– 14:15 lunch (SNS Canteen)
14:15-14:45 posterior session

Session IV: *Nothobranchius* development & transgenesis
Chair: **C. Englert**

14:45-15:15 Luca Dolfi, Scuola Normale Superiore, Pisa - **Early development of annual and non-annual fish: cell cycle and microRNAs**
15:15-15:45 Christoph Englert, Leibniz Institute for Age Research (FLI), Jena – **Diapause and Aging**
15:45-16:15 Roberto Ripa, Scuola Normale Superiore, Pisa - **Transgenic manipulation of microRNAs in *Nothobranchius furzeri*: mir-29 family in iron homeostasis**
16:15-16:45 Antonino Cattaneo, Scuola Normale Superiore, Pisa - **Intrabodies as a method for transgenic protein knock-down**
16:45-17:00 coffee-break

Session V: *Nothobranchius* anatomy, pathology & regeneration
Chair: **A. Cellerino**

17:00-17:30 Beate Hoppe, Leibniz Institute for Age Research (FLI), Jena **Kidney Regeneration in *Nothobranchius furzeri***
17:30-18:00 Eva Terzibasi, Scuola Normale Superiore, Pisa – **Neuronal stem cells in the *Nothobranchius furzeri* brain**
18:00-18:30 Livia D'Angelo, Dept. Veterinary Medicine and Animal Productions, University of Naples Federico II – **Neurotrophins and brain of *Nothobranchius furzeri*: anatomical and biomolecular studies**
18:30-19:00 Emiliano Di Cicco, School of Bioscience and Veterinary Medicine, University of Camerino - **Immune system modifications and immunohistological characterization of neoplastic lesions in *Nothobranchius spp.***
19:00-19:30 Giacomo Rossi, School of Bioscience and Veterinary Medicine, University of Camerino - **Histopathological evaluation of lesions found in *Nothobranchius spp.***

8th February

Session VI: *Nothobranchius* metabolisn and physiology
Chair: **C. LeFrançois**

09:00-09:15 Marie Durollet, LIENSs (CNRS/ Univ. of La Rochelle) - **The impact of temperature on the regulation of aerobic metabolic scope in aging *Nothobranchius furzeri***
09:15-09:30 Nathalie Imbert Auvray LIENSs (CNRS/ University of La Rochelle) - **Influence of acclimation temperature on heart in aging *Nothobranchius furzeri*: an integrative approach from genomic to cellular effects**
09:30-10:00 Alejandro Lucas Sánchez, University of Murcia - **Age - related changes in the circadian system of *Nothobranchius***
10:00-10:30 Chi-Kuo Hu, Stanford University, CA, USA - **A latest lifespan measurement of *Nothobranchius furzeri***
10:30-11:00 Mickie Powell, University of Alabama at Birmingham - **Husbandry and Nutrition of Early Development in *Nothobranchius furzeri***
11:00-11:30 coffee-break
11:30-12:30 poster session
12:30-14:00 lunch (SNS Canteen)

Session VII: Technical session
Chair: **E.Terzibasi Tozzini**

14:00-15:00 Fish housing systems presentations
15:00-16:45 Round Table
16:45-17:00 Conclusions Prof. Antonino Cattaneo, Laboratory of Biology of the Scuola Normale Superiore)
17:00 Tour and Social Dinner: Museo di Storia Naturale, Certosa di Calci