

DIMET WORKSHOP COURSE

Interdisciplinary connections and perspectives on language development and disease

Organized by Silvia Nicolis and Silvia Brunelli Department of Biotechnology and Biosciences and Department of Medicine and Surgery, University of Milano-Bicocca

Venue: University of Milano-Bicocca, Building U18 - Ygeia, Room 06, via Podgora, 20854 Vedano al Lambro (MB)

PROGRAM

Thursday, January 18, 2024

13:00 - 13:20 (Central European Time) Welcome and Introduction

The perspective of linguistics and neurolinguistics

13:20 - 14:00 **Maria Teresa Guasti** (Department of Psychology, University of Milano-Bicocca) Language disorders from a (psycho)linguistic point of view

14:00 – 14:40 **Chiara Cantiani** (Child Psychopathology Unit, Scientific Institute IRCCS E. Medea, Bosisio Parini, Lecco) Early electrophysiological risk markers of language impairment: long-term follow-up from infancy to preschool age

14.40 - 15:20 **Marco Tettamanti** (Department of Psychology, University of Milano-Bicocca) Tracking prenatal brain development for the early prediction of postnatal language abilities

15:20 - 15:40 Questions and Discussion

15:40- 16:10 BREAK

The perspective of genetics

16:15 - 16.55 **Michelle Luciano** (Behavioural Genetics, School of Philosophy, Psychology and Language Sciences at the University of Edinburgh) The genetics of dyslexia and correlated traits

16.55 - 17.35 **Cedric Boeckx** (ICREA [Catalan Institute for Advanced Studies] and Universitat de Barcelona) Language, cognition, development



- 17:35 17:55 Questions and Discussion
- 17:55 18:30 Evening break meet the speakers

Friday, January 19, 2024

The perspective of brain imaging

9:00 – 9:40 **Eraldo Paulesu** (Department of Psychology, University of Milano-Bicocca) Developmental Dyslexia: lessons from 30 years of neuroimaging studies

<u>The perspective of neurodevelopmental disease in vitro models and their analysis</u> <u>1: Phenotyping and in vitro models of Angelman syndrome, a disease involving language</u> <u>impairment</u>

9:40 - 10:20 **Silvia Russo** (Istituto Auxologico Italiano, Cusano Milanino) Generation by cell reprogramming and study of in vitro human stem cell based models of Angelman syndrome and language-related neurodevelopmental disorders (final title to be confirmed)

10:20 - 10:50 **Serena Micheletti** (U.O. Neuropsichiatria dell'infanzia e adolescenza. ASST Spedali Civili di Brescia) Social cognition, communication and language skills in children and adolescents with Angelman syndrome

10:50 - 11:10 *Questions and Discussion* 11:10 - 11:30 BREAK

<u>2: Human cerebral organoids, novel models and genome-wide single-cell analyses of gene</u> <u>activity</u>

11:30 – 12:10 **Veronica Krenn** (Department of Biotechnology and Biosciences, University of Milano-Bicocca, Human Technopole Early Career Fellow) Employing in vitro human stem cell based models to address the molecular and biochemical abnormalities in neurodevelopmental disorders

12:10 - 12:50 **Emanuele Villa (Giuseppe Testa lab)** (Università di Milano Statale, Neurogenomics Center at Human Technopole Milano, Istituto Europeo di Oncologia) Single-cell genome-wide analyses of gene expression define disease-relevant cell types in human cerebral organoids (final title to be confirmed)

12:50 – 13:20 **Diego Muzzini** (10x Genomics and Euroclone Italy) Deciphering Neurobiology using single cell multiomics approaches



<u>3: Computational systems biology to understand the diversity and dynamic behavior of</u> <u>human brain cells in health and disease</u>

13:20 – 14:00 **José Davila-Velderrain** (Neurogenomics Center at Human Technopole Milano) Integrative developmental neurogenomics

14:00 - 14:20 Questions and Discussion

14:20 - 14:25 Conclusions - End of meeting

LINK TO JOIN:

18January: https://unimib.webex.com/unimib/j.php?MTID=mc633c0783ba5a623a567f583c71f7c86

19January: https://unimib.webex.com/unimib/j.php?MTID=m443bd7a76f849d84d0f6585aeec9f90b



Suggested reading:

https://doi.org/10.1016/j.neubiorev.2021.07.009

https://doi.org/10.1038/s41588-022-01192-y

https://doi.org/10.1016/j.dcn.2016.03.002 https://doi.org/10.3389/fnins.2023.1201997

https://www.frontiersin.org/articles/10.3389/fnins.2023.1080861/full https://langsci-press.org/catalog/book/142

<u>https://doi.org/10.1038/nrg1747</u> <u>https://doi.org/10.1146/annurev-genet-120213-092236</u> <u>https://doi.org/10.15252/embr.202152803</u>

https://doi.org/10.1038/s41576-023-00586-w

https://doi.org/10.1038/s41582-022-00723-9

https://doi.org/10.1038/s41586-023-06473-y

https://doi.org/ 10.1038/s41586-019-1195-2