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DI TORINO



Department of Neurosciences "Rita Levi  
Montalcini"

Department of excellence

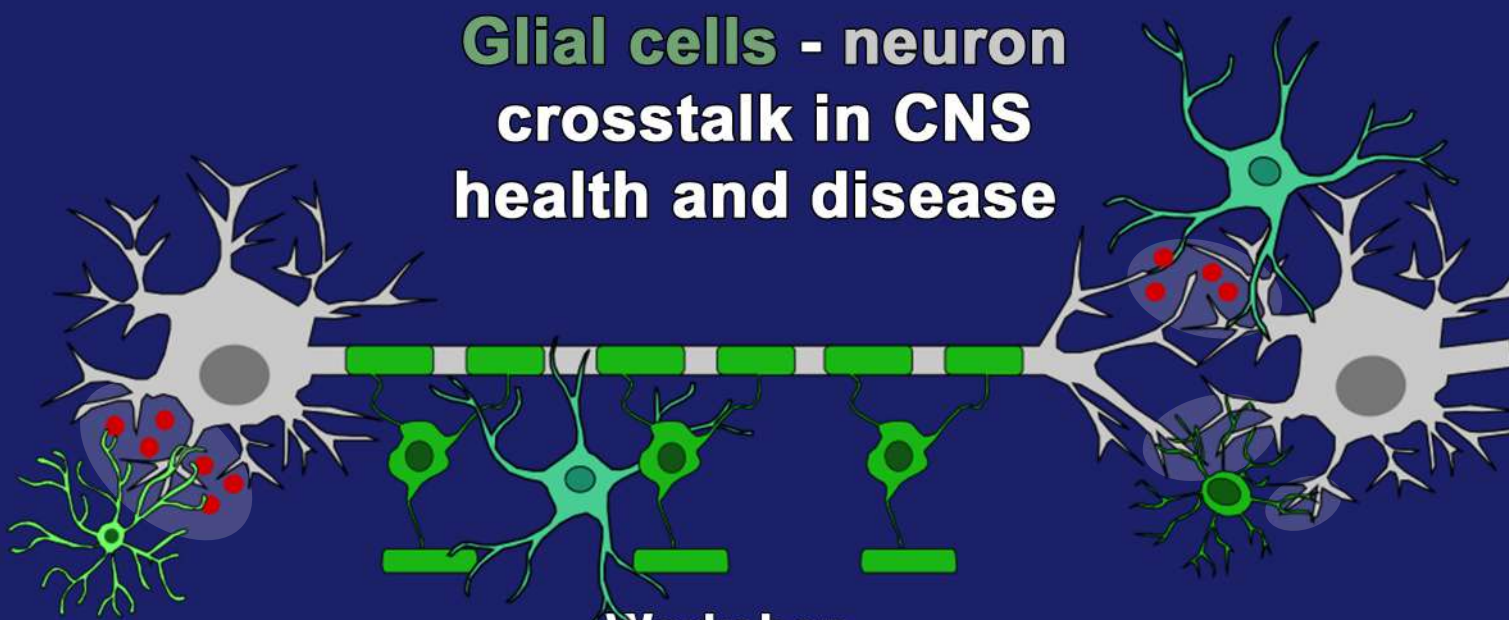


Dottorato di Ricerca in Neuroscienze  
Università degli Studi di Torino



NICO  
Neuroscience Institute Cavalieri Ottolenghi

# Glial cells - neuron crosstalk in CNS health and disease



Workshop  
February 27<sup>th</sup>-29<sup>th</sup>, 2020  
University of Turin, Italy

## Confirmed Speakers

**Maria Cecilia Angulo**, INSERM Paris  
**Bernadette Basilico**, IST Austria  
**Robert Beattie**, IST Austria  
**Enrica Boda**, Univ. of Turin  
**Francesca Boscia**, Univ. of Naples  
**Valentina Cerrato**, Univ. of Turin  
**Antonella Consiglio**, Univ. of Barcelona  
**Davide De Pietri Tonelli**, IIT Genova  
**Fabia Filipello**, Washington Univ. St. Louis  
**Christophe Galichet**, Francis Crick Inst. London

**Eriola Hoxha**, Univ. of Turin  
**Nunzio Iraci**, Univ. of Catania  
**Rosa Paolicelli**, Univ. of Lausanne  
**Marco Perugini**, Univ. of Milan Bicocca  
**Gertrudis Perea**, Cajal Inst. Madrid  
**Chiara Rolando**, Univ. of Basel  
**Ludovic Telley**, Univ. of Lausanne  
**Beatrice Vignoli**, Univ. of Trento  
**Chiara Zurzolo**, Inst. Pasteur Paris

## Venues

Institute of Anatomy, C.so Massimo D'Azeglio 52, Turin;  
Neuroscience Institute Cavalieri Ottolenghi,  
Regione Gonzole 10, Orbassano

## Contacts for information

valentina.cerrato@unito.it  
enrica.boda@unito.it

## Link for registration

<https://forms.gle/pMb9CTZAtMfp7V2p7>

## Organizers

Valentina Cerrato, Enrica Boda & Annalisa Buffo,  
Dept. of Neuroscience & NICO, UniTO

## Registration deadline:

December 23rd, 2019

## Abstract submission deadline:

January 15th, 2020

## Supported by



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Miltenyi Biotec



# Glial cells - neuron crosstalk in CNS health and disease

## COURSE ORGANIZERS

Valentina Cerrato	valentina.cerrato@unito.it
Enrica Boda	enrica.boda@unito.it
Annalisa Buffo	annalisa.buffo@unito.it

## PROGRAM in short

Since their discovery, glia were thought for a long time only to support neurons passively. In line with this view, neurological and psychiatric disorders have long been interpreted as the exclusive consequence of abnormalities in neurons. We now appreciate that glia operate as master regulators of numerous aspects of CNS development and plasticity. Further, dysregulations of the glial cells-neuron crosstalk can be primarily involved in initiation and progression of several neuropathologies.

The aim of this 3-day long workshop is to enable participants to get a thorough understanding of the functions of glial cells in health and disease. The program includes lectures on the newest conceptual advancements and methodological approaches in the study of glial cells in synaptic function, development and CNS disease. Participants will have the opportunity to present their own research projects and discuss ideas with leaders in the field. The program includes sessions devoted to research methodology and theoretical-practical training, that will allow participants to learn and practice state-of-the-art methods/techniques to study glia-neuron interactions.

**Credits: 3**

## SCHEDULE and LOCATION

The workshop will be held on **FEBRUARY 27-29, 2020.**

Lectures will take place at the Institute of Anatomy, C.so Massimo D'Azeglio 52, Turin; the theoretical-practical sessions (day 2) will be held at the Neuroscience Institute Cavalieri Ottolenghi, Regione Gonzole 10, Orbassano (Turin).

## REGISTRATION

**Deadline for registration:** December 23, 2019.

**Registration cost for participants:** 30 euro.

**Link to the registration form:** <https://forms.gle/pMb9CTZAtMfp7V2p7>

**Email addresses for information:** valentina.cerrato@unito.it, enrica.boda@unito.it

The total number of participants will be limited to 60 students, and registrations will be dealt with on a first come, first served basis.

## ABSTRACT SUBMISSION

**Deadline for abstracts submission:** January 15th, 2020.

A total of six abstracts will be selected for oral communications by the workshop organizers, while the others will be presented as posters.

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## SCIENTIFIC PROGRAM

### DAY 1 (h 9:30-12:00) - SESSION I - Glia-neuron crosstalk in CNS functions and memory

- **Beatrice Vignoli (University of Trento, Italy)** - *Glial microdomains confine a molecular memory enabling long-term information storage for memory consolidation*
- **Gertrudis Perea (Instituto Cajal, Madrid, Spain)** - *GABAergic control of Astrocyte-Neuron signaling in cortical circuits*
- **Bernadette Basilico (Institute of Science and Technology Austria)** - *Constitutive role of microglia in maintaining synaptic function in mouse hippocampus*
- **Christophe Galichet (Francis Crick Institute, London, UK)** - *Median Eminence Oligodendrocyte Precursor Cells is required for normal function of the hypothalamo-pituitary*

### DAY 1 (h 12:00-12:30) – SESSION II – Neuroscience Research Methodology

- **Marco Perugini (Univ. Milano Bicocca, Italy)** - *The signal and the noise: Some lessons learned from the replicability crisis in Psychology*

### DAY 1 (h 13:30-15:30) POSTER SESSION

### DAY 1 (h 16:00-18:00) Selected oral communications (n=6)

### DAY 2 (9:00-12:00) – SESSION III Glial cells in CNS aging and pathology

- **Chiara Rolando (Univ. of Basel, Switzerland)** - *Post-transcriptional regulation of astrocytes: a novel facet to counteract brain aging*
- **Rosa Paolicelli (Univ. of Lausanne, Switzerland)** - *Microglia-mediated synapse loss in neurodegeneration*
- **Fabia Filipello (Washington Univ. of St. Louis)** - *Microglia immune receptor TREM2 in neurodegenerative diseases*
- **Chiara Zurzolo (Institut Pasteur, Paris, France)** - *title to be defined*
- **Davide De Pietri Tonelli (IIT, Genova, Italy)** – *title to be defined*



## DAY 2 (h14:30-18:00) – THEORETICAL-PRACTICAL TRAINING (participants will be divided in 2 groups and will attend both trainings)

- **Light-sheet microscopy: principle and applications in Neurosciences**  
(Christian Feuillet, Miltenyi/LaVision)
- **Tools for neural cells research: mouse adult brain dissociation, cell isolation and analysis.** (Magnetic Activated Cell Sorting -MACS- and cytofluorimetric analyses of heterogeneous tissues: principles, simulations, instrument settings and data analysis -Elisa Zuffi, Miltenyi-)

## DAY 3 (9:00-11:30) – SESSION IV Glial cells in neurodegeneration

- **Eriola Hoxha (Univ. of Turin, Italy)** - *Disruption of myelin phospholipid composition impairs action potential conduction in a murine model of Spinocerebellar Ataxia type 38*
- **Francesca Boscia (Univ. of Naples, Italy)** - *Enhancing D-aspartate signaling to promote (re)myelination*
- **Nunzio Iraci (Univ. of Catania, Italy)** - *Exosomes as natural messengers of bioactive molecules in the glial-neuronal signaling in Parkinson's disease*
- **Antonella Consiglio (Univ. of Barcelona, Spain)** - *Patient-specific iPSC-derived astrocytes contribute to non-cell autonomous neurodegeneration in Parkinson's Disease*

## DAY 3 (11:30-12:00) – SESSION V Neuroscience Research Methodology

- **Ludovic Telley (University of Lausanne, Switzerland)** - *Single cell RNA sequencing (scRNAseq) approaches and data analysis*

## DAY 3 (12:00-14:00) – LUNCH AND POSTER SESSION

## DAY 3 (14:00-16:00) – SESSION VI Glial cells in CNS development and developmental disorders

- **Maria Cecilia Angulo (INSERM Paris)** - *Developmental cell death regulates lineage-related interneuron-oligodendroglia functional clusters and oligodendrocyte homeostasis*
- **Enrica Boda (University of Turin, Italy)** - *Inherent heterogeneity of postnatal oligodendrocyte progenitors: lessons from a microcephaly model*
- **Valentina Cerrato (Univ. of Turin, Italy)** - *The ontogenesis of astrocytes diversity: a remarkably orderly process necessary for the correct cerebellar development and functioning*
- **Robert Beattie (Institute of Science and Technology Austria)** - *Molecular Mechanisms Regulating Gliogenesis in the Neocortex*