



UNIVERSITÀ  
DI TORINO

# SEMINAR CYCLE

*of the PhD in Neuroscience of Turin*

2<sup>nd</sup> Appointment

**Prof. Silvia Cappello**

Ludwig Maximilian University, LMU, Munich, Germany

## “Cellular Crosstalk in Neurodevelopmental Disorders”

21<sup>th</sup> February, 2024 h 11:00 AM-1:00 PM

The lecture will last 1 hour and it will be followed by discussion

**Host: Prof. Maurizio Giustetto**



Great Hall A – Anatomy Institute  
C.so Massimo d'Azeglio 52  
Link: <https://bit.ly/3UeL43G>

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## PROF. SILVIA CAPPELLO

Prof. Cappello is Associate Professor at the Ludwig Maximilian University, LMU, Munich, Germany and Research Group Leader at the Max Planck Institute of Psychiatry, Munich, Germany.

Prof. Cappello obtained a PhD in Pharmacology and Toxicology at the University of Padua, Italy and a Master Degree in Biotechnology at the University of Bologna, Italy.

Prof. Cappello is author of numerous scientific publications in biology, biosciences, and neuroscience.

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## ABSTRACT

*Cellular crosstalk is an essential process during brain development and it is influenced by numerous factors, including the morphology of the cells, their adhesion molecules, the local extracellular matrix and the secreted vesicles. Inspired by mutations associated with neurodevelopmental disorders, we focus on understanding the role of extracellular mechanisms essential for the correct development of the human brain. Hence, we combine the *in vivo* mouse model and the *in vitro* human-derived neurons, cerebral organoids, and dorso-ventral assembloids in order to better comprehend the molecular and cellular mechanisms involved in ventral progenitors' proliferation and fate as well as migration and maturation of inhibitory neurons during human brain development and tackle the causes of neurodevelopmental disorders. We particularly focus on mutations in genes influencing cell-cell contacts, extracellular matrix, and secretion of vesicles and therefore study intrinsic and extrinsic mechanisms contributing to the formation of the brain. Our data reveal an important contribution of cell non-autonomous mechanisms in the development of neurodevelopmental disorders.*

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