EVIDENCE-BASED MEDICINE: ROLE OF SYSTEMATIC REVIEWS AND META-ANALYSES

Date: February 10-12, 2026

Location: Cittadella Universitaria di Monserrato, University of Cagliari (UniCA), Italy

Organizers: Paola Fadda, Department of Biomedical Sciences, UniCA; Liana Fattore, CNR Institute of Neuroscience (IN-CNR), Cagliari.

UNIVERSITÀ DEGLI STUDI DI CAGLIARI

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10-12 Febbraio 2026

Ore 9:30-17:00

In presenza

Contatti:

Overview of the School

This School will provide students and the general audience with a comprehensive overview of current research in the emerging field of environmental pollution and brain functions. Most speakers are currently working on the European MSCA-SE Project PsyCoMed (Psychiatric disorders and Comorbidities caused by pollution in the Mediterranean area) and will present new evidence of how pollutants can

(i) enter the brain blood barrier during development and adulthood,
(ii) cross the placenta barrier to severely impact neurodevelopment in offspring,
(iii) alter behavior and emotional states,
(iv) induce neuroinflammation and oxidative damage,
(v) cause epigenetic changes and microbiota imbalance.

Academic experts from prestigious universities and research institutes from Europe (University of Bordeaux, CNRS-Nice, Universitat Jaume I-Castellòn), North Africa (University of Tunis, University of Alexandria) and Australia (Florey Department of Neuroscience and Mental Health) will work with Italian (University of Florence) and local (UniCA, CNR-Cagliari, CRS4-Pula) experts to illustrate and discuss how different animal models (i.e., mice, rats, drosophila, zebrafish, bees) can be used to study the effects of pollutants on brain and behavior. The program also includes two advanced workshops with both theoretical and practical training sessions, one focused on AI-based tools (i.e., Deep-Lab-Cut and SIMBA) to study the impact of pollutants on behavior, and a second one focused on molecular docking techniques and their applications in the field.

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WINTER SCHOOL ON POLLUTION AND MENTAL HEALTH

February 10, Tuesday	
9.30–9.45	**Introduction to the NeuroBridge School** Paola Fadda (UniCA)
9.45–10.15	**The PsyCoMed project – Psychiatric disorders and comorbidities caused by pollution** Marc Landry, University of Bordeaux
10.15–11.00	**How pollutants can get the brain during development and adulthood** Francisco Eliseo Olucha Bordoneau, Universitat Jaume
11.00–11.30	**Coffee Break**
11.30–12.15	**Pollutant chemicals and neurodevelopment** Wah Chin Boon, Florey Institute, Melbourne
12.15–13.00	**How PACAP Protects the Brain from Glyphosate and Nanoplastic Toxicity: Effects Neural Cell Differentiation, Neuroinflammation, Oxidative Damage, Epigenetic Changes, and Microbiota Balance** Olfa Masmoudi-Kouki, University of Tunis
13.30–15.00	**Lunch Break**
15.00–15.30	**Chemical and behavioral impact of nanoplastics after maternal exposure** Mónica Navarro-Sánchez, Universitat Jaume I
15.30–16.00	**Exploring neuroinflammation and peripheral oxidative stress in adult rats prenatally and/or perinatally exposed to nanoplastics** Ankit Siwach, UniCA, Cagliari
16.00–16.30	**Effects of prenatal exposure to nanoplastic on metabolism and neuroendocrine regulation: potential protective action of the neuropeptide ODN** Mariem Sallemi, University of Tunis
16.30–17.00	**Synthetic food dyes and neurobehavioral effects in children: a focus on autism spectrum disorder** Petra Amchova, Masaryk University (CZ)

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February 11, Wednesday	
9.30–10.15	**Effects of nanoplastic exposure on brain function and behavior in Drosophila melanogaster, with a focus on a Drosophila model of Parkinson's disease** Maria Antonietta Casu, IFT-CNR, Cagliari (IT)
10.15–11.00	**What zebrafish can tell us about the central effects of exposure to microplastics** Stefano Morara, IN-CNR, Milan (IT)
11.00–11.30	**Coffee Break**
11.30–12.15	**Emerging methods and imaging techniques to explore the neurotoxic effects of microplastics in honeybee brain** Irene Costantini, University of Florence (IT)
12.15–13.00	**The impact of a combination of nano-plastics and DEHP on health and pain sensitivity** Jacques Noel, CNRS, Nice (FR)
13.30–15.00	**Lunch Break**
15.00–15.45	**Neuroinflammation as a mechanistic link between ADHD and pain sensitization: evidence from anterior cingulate cortex dysfunction** Sandra Sanchez, University of Bordeaux (FR)
15.45–16.40	**Environmental pollutants-induced neuronal injury mediated by cellular inflammasome** Amira Zaky, University of Alexandria (EG)
16.30–17.00	**Round table: Environmental contaminants: which are the real risks for our brain?** Marc Landry (FR), Wah Chin Boon (AU), Kateřina Horská (CZ), Olfa Masmoudi-Kouki (TN), Francisco Olucha Bordoneau (E)

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February 11, Wednesday	
9.30–10.30	**Workshop #1. AI tools with Deep-Lab-Cut and SIMBA to study the impact of pollutants on behavior** Monica Navarro-Sánchez & Mohamed Zahran, Universitat Jaume I
10.30–11.00	**Organization of the working groups and instruction for the practical session**
11.00–11.30	**COFFEE BREAK**
11.30–12.45	**Working groups in action** How to use Deep-Lab-Cut and SIMBA: practical simulation of their application to different behavioral tests
12.45–14.00	**LUNCH**
14.00–15.00	**Workshop #2. Molecular docking: predicting how a pollutant molecule (ligand) will fit and bind to a biological target** Ibtihel Dhaya, University of Tunis, & Antonio Laus, CRS4, Pula (CA)
15.00–15.30	**Organization of the working groups and instruction for the practical session**
15.30–16.00	**COFFE BREAK**
16.00–17.00	**Working groups in action** Molecular docking: practical simulation of their application to different case studies

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