

**Bioinformatician/Computational biologist Postdoc Position at the European Institute of Oncology and University of Milan, IFOM-IEO-Campus, Milan - Italy**

**COMPUTATIONAL APPROACHES TO NEURODEVELOPMENTAL EPIGENOMICS**

The Laboratory of Stem Cell Epigenetics, headed by ERC Investigator Giuseppe Testa, invites applications for a postdoctoral position in computational biology on a highly innovative project that investigates the epigenetic basis of environmentally-induced neurodevelopmental disorders, including autism spectrum disorders (ASD).

A major focus of our lab is on the modelling of neurodevelopmental diseases by cell reprogramming. We recently described the thus far largest cohort of disease-specific, transgene-free iPSC, focusing on two disorders caused by symmetrical copy number variations of 7q11.23 that display a striking combination of shared and symmetrically opposite phenotypes (Adamo et al. *Nature Genetics*, 2015; *News and Views* by Urban and Purmann in the same issue). We discovered that iPSC and early developmental lineages already harbor major transcriptional dysregulation in disease-relevant pathways, and established *ad hoc* computational pipelines to define epigenetically vulnerable neurodevelopmental pathways. This project is part of a major EU-funded Horizon2020 network (EDCMixRisk) that combines three key innovations: i) uniquely large epidemiological studies to link prenatal exposures to environmental toxins with neurodevelopmental disabilities; ii) chemical synthesis of defined mixtures of environmental toxins for a first-time characterization of their compound impact on neural development; iii) cell reprogramming and cortical organoids for the experimental study of toxin mixtures at defining stages of human corticogenesis *in vitro*. The candidate will be part of an already highly active core of bioinformaticians in the lab and is expected to apply a broad range of methods (including reverse engineering and machine learning) to pioneer new approaches for the integrated analysis of these unique human datasets. The candidate is also welcome to propose and conduct new lines of research in computational biology that align with the general interests of the lab.

**Place of employment and work:**

The European Institute of Oncology is one of Europe's leading research institutes in biomedical research. It offers attractive salaries and benefits, an exceptional English-speaking research environment and cutting-edge technological platforms. It is located in the heart of Milan, a vibrant cosmopolitan city.

**Requirements:**

Graduate degree in Bioinformatics/Computational biology/Informatics or PhD in Molecular Biology or Neurobiology with a proven track record in bioinformatics/computational biology, ideally with experience in the analysis of Next Generation Sequencing experiments. We are looking for a highly motivated scientist to join an interactive, multi-national team at the cutting edge of cell reprogramming, neurobiology and computational biology (Signaroldi, Laise et al., *Nature Communications* 2016; Germain et al., *Nucleic Acids Research* 2016; Röst et al., *Nature Methods* 2106; Adamo et al. *Nature Genetics* 2015; *News and Views* by Urban and Purmann in the same issue; Fragola et al. *PLoS Genetics* 2013; Burgold et al. *Cell Reports* 2012; Testa *Bioessays*, 2011; Campaner et al., *Molecular Cell* 2011). Operating language of the lab is English.

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<http://www.ieo.it/it/RESEARCH/Basic-research/Department-of-Experimental-Oncology11/Stem-cell-epigenetics-Unit/>