

#1 JUNIOR RESEARCH FELLOW IN STEM CELL BIOLOGY AND SINGLE CELL SEQUENCING

Context

Synergy ERC Grant (november 2025 – october 2031) “Custom-made neurons for cell therapy in Parkinson’s and Huntington’s disease” <https://cordis.europa.eu/project/id/101167102>

Working Group at the University of Milano

Elena Cattaneo (Full Professor), Dario Besusso (RTT), Simone Maestri (senior scientist, bioinformatician), Linda Scaramuzza (senior scientist, neurobiologist)

Department of Bioscience, University of Milan & National Institute of Molecular Genetics (INGM) – Via Francesco Sforza 35, Milano

Research Environment

The laboratory investigates the pathophysiology of Huntington’s Disease (HD) and develops stem cell-based models to investigate molecular mechanisms of the disease and cellular strategies to slow disease progression or prevent its onset. HD is caused by a CAG repeat expansion in the *Huntingtin* gene, leading to the degeneration of striatal and cortical neurons.

One research line, supported by a Synergy ERC grant (Grant agreement 101167102), focuses on cell replacement strategies for HD. A key component of this project centers on stem cell engineering combined with single-cell RNA sequencing and genetic barcoding approaches, enabling precise tracing of donor-derived cells and their connectivity with host neuronal targets *in vivo*. Human embryonic stem cells will be genetically engineered, differentiated into neuronal progenitors, barcoded, and transplanted into HD rodent models (also in collaboration with the University of Torino). Single-cell transcriptomic and lineage-tracing technologies will then be employed to assess donor cell fate, maturation, and functional integration within host neural circuits. The project will be supported by already established *in vitro*, *in vivo* and bioinformatic expertise.

We are seeking a motivated and enthusiastic Junior Research Fellow (post-Laurea degree) with a strong interest in strengthening their expertise in single-cell omics (with focus on 10X Genomics library preparation), lineage tracing, and stem cell manipulation .

Required Expertise

- master’s degree in Biology, Biotechnology, or a related field
- at least one year of hands-on molecular biology experience
- preferably some experience with library preparations and single cell omics
- knowledge of neurobiology and (stem) cell culture is a plus
- ability to work in a highly collaborative research environment
- proficiency in spoken and written English is mandatory
- salary level will be commensurate with years of experience

For further information about the research project: cattaneooffice@unimi.it

Candidate selection will take place through a public competition, with the call for candidates published on the University of Milan website by february-march 2026