



Centre for Integrative Biology - CIBIO

Post-doc fellowship: Solving 3D chromatin organization and its mechanical properties in health and diseases

A three years post-doc fellowship is now opening at the Department of Cellular, Computational and Integrative Biology CIBIO, University of Trento and the project will be carried out at the laboratory of Chromatin Biology & Epigenetics, headed by Dr. Alessio Zippo.

The project

Mutations in chromatin regulators can lead to multiple pathological conditions which are commonly referred as chromatinopathies (CPs). The project for the post-doc activity is centered on determining the mechanisms and functional implications of mutations in chromatin regulators observed in CPs.

Chromatin is organized in biomolecular condensates that compartmentalized the genome function and control gene expression. The herein program aims to solve chromatin domains by super-resolution imaging and 3C-based approaches, to determine the contribution of 3D chromatin organization and nuclear architecture to the onset and progression of diseases. The PhD student will gain skills in quantitative biology and epigenetics by using cutting edge technologies in chromatin biology and super-resolution imaging. By using cutting-edge technologies, the post-doc will develop new approaches to define and solve chromatin domains to investigate their function in promoting cell plasticity. His/her project will benefit from working within an interdisciplinary framework, favoring cross-contamination of ideas and research discussions.

The candidate

We are seeking highly motivated and enthusiastic candidates, willing to challenge an innovative project by adopting a pro-active attitude and an analytical approach. The candidate is requested to have experience on NGS techniques and/or advanced imaging approaches to investigate alteration in 3D chromatin organization and compartmentalization. The candidate should have a strong interest in interdisciplinary collaboration. The post-doc will experience both wet-lab and computational work, supporting candidates in establishing a unique skill set that it would be required for future quantitative biology studies. Given the international framework, the candidate should also have good communication skills, and a team-oriented working attitude.

Qualifications:

- A high level of motivation and interest.
- PhD in Biology, Biotechnology, Bioinformatics, Computational Biology, Physics or in a related field
- Prior research experience in chromatin biology, molecular biology, or advanced imaging (including a track record of peer-reviewed publications)
- Experience in 3C-based methodologies and NGS data analysis and/or
- Experience in super-resolution microscopy and imaging data analysis
- Proficiency in scripting environments for statistics and data analysis, and/or able to quickly acquire Bioinformatics computational skills
- Excellent communication skills and good team spirit with the ability to solve problems independently
- International mobility will be considered a major plus.

The environment

The lab of Chromatin Biology and Epigenetics is interested in determining the contribution of epigenetic changes to stem cell function, both in physiological and pathological settings. In particular, we are investigating the contribution and the consequence of epigenetic perturbations to the maintenance of cell identity and tissue homeostasis. Within the international and vibrant context of the Department of Cellular, Computational and Integrative Biology (CIBIO) in Trento, Italy. Postdoctoral researchers joining the lab will gain access to the advanced research training and career development program. CIBIO offers the possibility to work in a young, highly dynamic and stimulating research environment thanks to a streamlined organization, which can support researchers to readily adapt to new scientific challenges through cutting-edge research infrastructures. At CIBIO, research goals are pursued in the frame of an integrative view of basic biological processes and of their derangement in disease, whereby basic science co-exists with biomedical oriented translational approaches.

Qualified and interested candidates should submit their application including CV, a motivation letter describing how her/his background would best fit this position, and the contact information of at least two referees. Please send all documents to Dr. Alessio Zippo (alessio.zippo@unitn.it). This position is available starting from January 2020.