Post-doctoral fellow – BRCA1 regulation of LINE-1 retrotransposon activity

A full-time Post-doctoral fellow position is available in the Institute for Systems Genetics at New York University Langone Medical Center. The candidate will be responsible for conducting independent research under the mentorship of Dr. Jef Boeke.

The successful candidate will work in an exciting and active research group led by Dr. Jef Boeke and will be part of the dynamic and diverse Institute for Systems Genetics. The fellow will work closely with a Research Instructor (Dr. Paolo Mita) in the Boeke lab as well as other members of the laboratory. The successful applicant must be highly motivated and passionate about research, have good verbal and written communication skills, demonstrate independent and critical thinking and work collaboratively as part of a team. We will prioritize candidates with experience in the field of DNA damage response and DNA replication stress as well as candidates with previous experience with human cell culture and molecular biology techniques. The fellow will be supported to present in national conferences and the resulting work will be expected to lead to publications. The successful candidate will have scientific and career development support, and access to all opportunities offered by NYU School of Medicine and the Institute for Systems Genetics. The position will be supported by a recently funded NIH NCI R21 grant.

Research topics
The post-doctoral fellow will lead a project aimed to characterize the functional interaction between LINE-1 retrotransposon and BRCA1 protein. The post-doctoral fellow will use biochemistry, genomic and imaging approaches to deepen our understanding of the mechanisms used by BRCA1 to inhibit LINE-1 activity in various cell lines including human ovarian and breast cancer cells. Medically relevant mutations of BRCA1 will be evaluated for their effect on LINE-1 repression. The project also aims to identify novel proteins that participate to LINE-1 retrotransposition specifically at the DNA replication fork that, according to our recent discoveries, is uses by LINE-1 for efficient re-insertion into the genome. The candidate is expected to be able to independently expand these initial characterizations, critically interpreting and exploring the obtained results to further the research.

Duties and Responsibilities
- Formulation of hypotheses and generation of appropriate and specific study design
- Design, development, execution and optimization of experiments and protocols essential for the research
- Application of molecular, biochemical and genomic techniques
- Detailed cataloguing of the experiments and their results
- As integral part of the Boeke lab, participate to the maintenance of “common use” reagents, procedures and machines as part of the general well-being of the lab
- Data analysis and periodic presentation of results to mentors and lab members
- Collaboration with other members of the Boeke lab, ISG and the NYU Langone Health community at large
- Writing/editing of manuscripts, preparation of figures and schematics for publication and presentations

Requirements
Highly motivated and productive individual with a PhD or MD/PhD, in Biomedical Sciences or a related field. The position requires a minimum 2 year commitment.

Excellent knowledge of molecular biology and cell biology; ability to think and work independently; experience in handling mammalian cell culture, and molecular cloning, experience in the fields of cellular biology, DNA damage and DNA replication stress (preferred); must be detail-oriented, highly organized, able to multi-task, take initiative, start and complete projects; must be able to work with a variety of people from different backgrounds.

Application materials
Please email (1) cover letter stating your specific interest in this position and relevant experience (max 2 pages), (2) your detailed CV, and (3) names and contact information of two references.
Please send complete application to Dr. Paolo Mita and Dr. Jef Boeke at paolo.mita@nyulangone.org, jef.boeke@nyulangone.org.