

Postdoctoral Fellowship in Genomic Instability and Cancer Genetics

A postdoctoral training position is available in the laboratory of [Dr. Peter Ly, Ph.D.](#) in the Department of Pathology at UT Southwestern Medical Center to study the mechanistic causes and consequences of genomic instability in cancer. [Our laboratory](#) is pursuing several exciting projects related to how cell cycle errors and mitotic chromosome segregation defects are linked to a diverse spectrum of genomic rearrangements and chromosomal alterations. These range from simple translocations and deletions to catastrophic forms of chromothripsis that ultimately shapes the complex mutational landscape of cancer genomes. We are also investigating how diverse DNA damage repair pathways respond to DNA double-strand breaks induced by mitotic errors, as well as their contribution to the maintenance of genome integrity. Our research program employs a number of state-of-the-art approaches, including CRISPR-based engineering/screening, live-cell microscopy, cytogenetics, and genomics.

Key publications:

1. Lin, YF et al. **Mitotic clustering of pulverized chromosomes from micronuclei.** *bioRxiv* (2022).
2. Ly P, et al. **Chromosome segregation errors generate a diverse spectrum of simple and complex genomic rearrangements.** *Nature Genetics* 51: 705-715 (2019).
3. Ly P and Cleveland DW. **Rebuilding chromosomes after catastrophe: emerging mechanisms of chromothripsis.** *Trends in Cell Biology* 27: 917-930 (2017).
4. Ly P, et al. **Selective Y centromere inactivation triggers chromosome shattering in micronuclei and repair by non-homologous end joining.** *Nature Cell Biology* 19: 68-75 (2017).

Candidates must hold a Ph.D. and/or M.D. degree prior to starting. Experience in cell and molecular biology, genetics, biochemistry, microscopy, and/or computational biology leading to publication(s) in peer-reviewed journals and/or pre-prints is recommended. The successful applicant is expected to develop and lead an independent research project within the broad themes of the laboratory.

Information on our postdoctoral training program, benefits, and a virtual tour can be found at <http://www.utsouthwestern.edu/postdocs>.

Interested individuals should send a CV, statement of interest, and a list of three references to:

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