

POSTDOCTORAL POSITION AVAILABLE
in telomere, DNA damage response and genome stability

“Telomere & Genome Stability” group
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Project overview:

Telomeres, the extremities of eukaryotic linear chromosomes, are structurally similar to one side of a double-strand break (DSB). Our lab investigates the cellular responses to telomere shortening or dysfunction and to DSBs, including repair and adaptation to DNA damage. We are interested in the molecular mechanisms of these responses, in their consequences for genome instability, and in how they are similar or different between telomeres and DSBs. The lab uses *Saccharomyces cerevisiae* as a model organism and combines molecular biology and genetics with microscopy, microfluidics, genomics and mathematical modelling.

Context and funding:

The postdoc will join a young group headed by Zhou Xu (<http://www.lcqb.upmc.fr/telomere-and-genome-stability>), which is part of the multidisciplinary environment of the Laboratory of Computational and Quantitative Biology (LCQB; <http://www.lcqb.upmc.fr/>), at the Institut de Biologie Paris-Seine (IBPS; <https://www.ibps.sorbonne-universite.fr/fr/>), at Sorbonne Université (Paris, France) and jointly supported by the University and the National Center for Scientific Research (CNRS). The group has broad multidisciplinary scientific interests in telomere biology and DNA damage response both in *S. cerevisiae* and in *C. reinhardtii*, using single-cell approaches, molecular biology, genetics and mathematical modeling.

The postdoc position is funded for 2 years by Mairie de Paris (Programme Émergence(s)) and by Sorbonne Université, and will start as soon as possible.

Application:

The candidate must have a PhD degree in life sciences and have experience in genetics, biochemistry or molecular biology. Expertise in the field of DNA damage, telomere, chromosome organization or cell cycle, and work experience with *S. cerevisiae* will be appreciated. The candidate must be proficient in English. To apply, please send your CV, a cover letter describing your interests and previous work, and contact information of 2 references to zhou.xu@sorbonne-universite.fr or zhou.xu@polytechnique.org

Selected publications:

- Roux P., Salort D. & Xu Z.¹. (2021) Adaptation to DNA damage as a bet-hedging mechanism in a fluctuating environment. *R Soc Open Sci.* Aug 25;8(8):210460. doi: 10.1098/rsos.210460.
- Chaux-Jukic F.*, O'Donnell S.*, Craig R.J., Eberhard S., Vallon O.¹ & Xu Z.¹ (2021) Architecture and evolution of subtelomeres in the unicellular green alga *Chlamydomonas reinhardtii*. *Nucleic Acids Research.* Jun24;gkab534, doi: <https://doi.org/10.1093/nar/gkab534>.
- Xu Z.¹ & Teixeira M.T.¹ (2019) The many types of heterogeneity in replicative senescence. *Yeast.* doi: 10.1002/yea.3433. (Review)
- Coutelier H., Xu Z.¹. (2019) Adaptation in replicative senescence: a risky business. *Curr Genet.* Jun;65(3):711-716. doi: 10.1007/s00294-019-00933-7. (Review)
- Coutelier H.*, Xu Z.*¹ et al. (2018) Adaptation to DNA damage checkpoint in senescent telomerase-negative cells promotes genome instability. *Genes Dev.* 32(23-24):1499-1513 (2018).
- Xu, Z. et al. (2015) Two routes to senescence revealed by real-time analysis of telomerase-negative single lineages. *Nat Commun.* 6, 7680.

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