

Qlife

Quantitative Biology Winter School Series

QUANTITATIVE APPROACHES TO DNA DAMAGE AND REPAIR

MARCH 23TH-27TH, 2026 - PARIS

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Recent technological developments in sequencing, imaging and image analysis have granted unprecedented access to the complex, dynamic, and sometimes even overlapping processes and pathways that nearly all organisms use to repair their DNA, thereby guaranteeing the integrity of their genome.

The Qlife program in Quantitative Biology of the PSL University organizes a winter school that will cover these emerging approaches through a series of lectures and digital workshops, using datasets from model organisms, both prokaryotic and eukaryotic. The dynamics of DNA repair processes will be explored using imaging approaches ranging from real-time single-molecule tracking of repair complexes to cellular-scale analysis. Quantitative analysis of the outcome of DNA repair pathways will be studied by overlaying sequence information with multiscale modelling of chromatin marks and contemporary understanding of the higher level physical organization of genomes into topologically-associated domains. These data will be integrated with the output of single-cell and spatial transcriptomic analyses to provide an unprecedented combined view of cell location, morphology, interactions, migration, expression pattern and fate.

Lunches and dinners with the speakers and instructors will foster informal discussions.

The winter school is limited to 25 participants. It is open to M2 students and PhD students, as well as postdocs, engineers and junior scientists, with backgrounds in life sciences, physics, computer science or mathematics.

Basic experience in file manipulation under Unix/Linux and in Python or R programming is required.

Additional information is available on: <https://www.edu.bio.ens.psl.eu/spip.php?article299>

APPLICATION DEADLINE JANUARY 19TH, 2026

REGISTRATION FEES: 150 €*

- Register through the following link: <https://forms.cloud.microsoft/e/h7Au5vMBmP>
- In addition, provide a CV, a motivation letter and a supporting letter from a supervisor as a simple pdf file with "Qlife DNA repair WS2026_LASTNAME" as subject header to Qlife.events@psl.eu

* Fees cover lunches from Monday to Friday and some dinners.

