

Biophysical Journal

Call for Papers

Special Issue: Single-Molecule Approaches to Reveal Structural and Mechanistic Properties of the Genome

Editors: *John van Noort, Leiden University*

Lars Nordenskiöld, Nanyang Technological University

The genome is an extraordinary reservoir of information crucial for protein production, characterized by efficient packaging and intricate regulatory mechanisms that govern transcription, replication, and other essential processes. The physical mechanisms involved—including the regulation of transcription factor accessibility, chromatin folding, an intricate set of post-translational modifications, chromatin remodeling, structural maintenance of chromosome (SMC)-organized extrusions, phase-separated compartments, and topologically associated domains—are vital, as well as the activity of a wide variety of other DNA-interacting proteins. Disruptions in these processes can result in severe health issues, underscoring the urgent need for actionable mechanistic insights into genome dynamics.

Innovative biophysical techniques, particularly in structural biology, physical modeling, sequencing, and single-molecule methods, have the potential to deepen our understanding of the genome and its numerous functions. In this special issue, we focus on studies that explore biophysical characterization of the genome, in particular using single-molecule methods to provide mechanistic insights at the (supra)molecular level. We encourage multidisciplinary contributions based on various single-molecule approaches, in particular combining and integrating with a wide range of methodologies, including epigenetics, statistical physics, biophysical modeling, the mathematical sciences, computer science, and chemistry, which together enhance our understanding of genome biophysics at the molecular level.

Articles may be of any type that BJ considers, but reviews and perspectives are typically by invitation. If you are interested in contributing a review or perspective, please contact the editors, John van Noort (noort@physics.leidenuniv.nl) and Lars Nordenskiöld (larsnor@ntu.edu.sg).

Deadline for submission: September 30, 2026

- Instructions for authors can be found at: <https://www.cell.com/biophysj/authors>.
- Please include a cover letter stating that you would like to contribute to the Single-Molecule Approaches to Reveal Structural and Mechanistic Properties of the Genome special issue and please describe why the work fits into the issue.
- All accepted articles will be reviewed upon receipt and will appear online as soon as accepted, even if submitted early.
- Normal publishing charges will apply.
- Questions can be addressed to the BJ Editorial Office at BJ@biophysics.org or to (240) 290-5600.



To submit, visit <https://www.editorialmanager.com/biophysical-journal/>