

Fully funded PhD position in Biophysics

Join the Nynke Dekker Lab at the University of Oxford to probe the dynamics of eukaryotic replication!

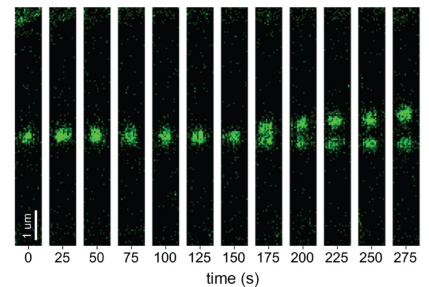


Attention all masters students - are you interested in understanding how the cell works at the molecular scale from a quantitative, mechanistic perspective? And are you trained in physics, biophysics, or quantitative biochemistry? Then consider applying to the [Nynke Dekker Lab](#), a renowned biophysics group in the [Department of Physics](#) at the [University of Oxford](#) that has a fully funded opening for a PhD student to probe the dynamics of eukaryotic replication using single-molecule biophysics and biochemistry.

About the project:

Understanding eukaryotic replication is important, because during our lifetimes we copy approximately a lightyear's worth of DNA, and how the different components of the molecular machinery (the replisome) work together to achieve this successfully is an area of highly active research. In our lab, we take on the exciting challenge of **understanding the dynamics of DNA replication** of this process by studying the activity of eukaryotic replisome at the single-molecule level on both bare DNA and chromatin.

In this PhD project, you will learn a diverse set of techniques (synthesizing DNA constructs, purifying proteins, state-of-the-art single-molecule microscopy and measurements, in-depth quantitative analysis) and work together with others in an interdisciplinary team comprised of biologists, (bio)physicists, biochemists, and data scientists. You will be taught how to perform high-quality experiments and then you will be invited to develop new ones of your own, making use of your training and insights! This research, carried



out together with collaborators at the University of Oxford, the Francis Crick Institute, the Hubrecht Institute, and elsewhere, should lead to new discoveries and insights that inform our quantitative understanding of DNA replication and advance this exciting field while contributing to the next generation of in vitro single-molecule methods.

About the lab:

The [Nynke Dekker Lab](#) is known for developing single-molecule techniques (McCluskey Optics Express 2021; Liu ACS Photonics 2024) and applying them to the study of DNA and RNA replication (Sánchez Nat Commun 2021; Janissen Mol Cell 2021; Ramírez Montero Nat Commun 2023; Sánchez Nat Commun 2023). The lab moved to Oxford a few months ago in order to take advantage of the outstanding environment that includes the interdisciplinary [Kavli Institute for Nanoscience Discovery](#) and a new state-of-the-art building. Lab members are encouraged to develop both their scientific and interpersonal communication skills to help establish a scientifically outstanding and warmly communicative interdisciplinary team that publishes exciting scientific results. As a PhD student in the group, you will have the opportunity to follow coursework, develop your teaching experience, and improve your leadership skills while guiding undergraduate members of the lab.

About the application process:

Applicants apply to the [D. Phil. in Condensed Matter Physics](#), deadline **8 Jan 2025** (alternatively, one can apply to the [D. Phil. in Biochemistry](#), deadline **3 Dec 2024**, please consult in advance). Admission into either program allows the student to start their Ph.D. research in the lab from the beginning of the course.

Any enquiries? Email Prof Nynke Dekker at nynke.dekker@physics.ox.ac.uk. We hope to hear from you!