

Job description



Dr Gideon Coster



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Funded by Wellcome

Higher Scientific Officer: Genome Replication Candidate Information

April 2024

Division:	Cell and Molecular Biology
Pay grade / staff group:	Higher Scientific Officer
Hours / duration:	Full time (35 hours per week), Monday to Friday. Contract initially fixed term for 2 years with potential to extend
Reports to:	Dr. Gideon Coster
Location:	237 Fulham Road, Chelsea, London

Join us!

We are seeking a motivated and ambitious candidate for a Higher Scientific Officer position.

What?

Our lab studies how DNA itself affects the process of genome replication. We have recently discovered that certain DNA sequences are sufficient to interfere with replication *in vitro* and have defined the mechanism of stalling and recovery^{1,2}. The lab has recently been awarded a prestigious 8-year Career Development Award (CDA) from the Wellcome Trust to further define the mechanism of DNA-induced replication stalling, both *in vitro* and in cells.

Why?

Sequences that are inherently difficult to replicate are highly abundant in the human genome and pose an endogenous challenge to the replication machinery, which can lead to mutations and breaks. These events are directly linked to various human disorders, including repeat expansion diseases, cancer, and genome instability syndromes.

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Understanding how these challenges are resolved is crucial for establishing disease aetiology and the development of novel treatments.

How?

We employ state-of-the-art biochemical and single molecule approaches, including reconstitution biochemistry, Nanopore and PacBio sequencing, AFM imaging, proteomics and more. Our recent work employed reconstituted budding yeast replisomes. We now aim to expand our work to cellular models. This will involve establishing knock-out and knock-in cell lines, the use of genetic reporters, techniques such as IF and CHIP-seq, as well as unbiased quantitative proteomics.

Who?

We are a young and energetic group of scientists, all excited about the research we do. We provide a supportive environment with emphasis on personal development and success. We are engaged in multiple collaborations which complement our work with cutting-edge technologies, such as single molecule nanopore sensing ([Prof. Ulrich Keyser](#), University of Cambridge), Atomic Force Microscopy (AFM) of DNA secondary structures ([Dr. Alice Pyne](#), University of Sheffield), and single molecule sequencing of repetitive DNA using PacBio SMRT technology ([Prof. Vincent Dion](#), University of Cardiff).

Contract details

This position is initially offered on a fixed term contract for 2 years, with potential for a long-term extension. The starting salary for this position is in the range of £41,900 - £43,000 per annum inclusive based on skills and experience.

In addition to annual performance related pay awards, the salary scales are reviewed annually to consider cost of living increases. The position is based at the ICR site in Chelsea.

Annual leave entitlement is 28 days per annum. There is an additional entitlement to 8 bank/public holidays and 3 ICR-set privilege days.

Our mission
is to make the
discoveries that
defeat cancer.

- 1 Casas-Delucchi, C. S., Daza-Martin, M., Williams, S. L. & Coster, G. The mechanism of replication stalling and recovery within repetitive DNA. *Nature Communications* **13**, 3953, doi:10.1038/s41467-022-31657-x (2022). ([Link to paper](#))
- 2 Williams, S. L. *et al.* Replication-induced DNA secondary structures drive fork uncoupling and breakage. *The EMBO Journal* **42**, e114334 (2023). ([Link to paper](#))

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Main purpose of the job

We are looking for an experienced cell biologist to head our cell-based studies. Work in the lab is currently focussed on *in vitro* biochemistry, but we are keen to expand our work to cell biology.

Further information

You may contact **Gideon Coster** for further information by emailing Gideon.Coster@icr.ac.uk. This job description reflects the current position and is subject to review and alteration in detail and emphasis in the light of future changes or development.

Duties and responsibilities

Key duties

Perform independent research, including culturing and maintenance of cell lines, establishing knock-out/knock-in cell lines, cell-based assays such as IF, ChIP-seq, proteomics and next-gen sequencing

Collaborate within the lab and externally as required

Produce high-quality work suitable for publication in high impact journals
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Maintain accurate records of experiments and reagents to allow reproducibility
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Present research findings in lab meetings and internal/external conferences and meetings
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Work in a flexible but organised manner

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General

All staff must ensure that they familiarise themselves with and adhere to any ICR policies that are relevant to their work and that all personal and sensitive personal data is treated with the utmost confidentiality and in line with the General Data Protection Regulations.
Any other duties that are consistent with the nature and grade of the post that may be required.
To work in accordance with the ICR's Values.
To promote a safe, healthy and fair environment for people to work, where bullying and harassment will not be tolerated.

Person specification

Education and Knowledge

PhD in genetics, biochemistry, cell biology, molecular biology or similar.	Essential
Broad knowledge in the fields of genome stability and cancer biology	Essential
Knowledge in the field of DNA replication and biochemistry	Desirable

Skills

Attention to details	Essential
Ability to plan, organise & prioritise a busy workload	Essential
Good verbal and written communication skills	Essential
Ability to work independently	Essential
Flexibility to work well within a team	Essential
Creative thinking	Essential

Experience

Cell culture techniques	Essential
CRISPR-Cas9-based targeting (knock-out / knock-in etc)	Desirable
Classic molecular biology techniques (e.g. cloning, PCR).	Essential
Gel electrophoresis (e.g. agarose / SDS-PAGE)	Essential

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About our organisation

The **Institute of Cancer Research**, London, is one of the world's most influential cancer research institutions with an outstanding track record of achievement dating back more than 100 years. Our mission is to make the discoveries that defeat cancer.

As well as being one of the UK's leading higher education institutions in research quality and impact, the ICR is consistently ranked as one of the world's most successful for industry collaboration. As a member institution of the University of London, we also provide postgraduate higher education of international distinction.

We are also a charity and rely on the support of partner organisations, funders, donors and the general public.

[Read more](#) to find out about our history, culture, and achievements, and how our funders, supporters and partnerships help drive our work.

Our values

The ICR has a highly skilled and committed workforce, with a wide variety of roles, each requiring different skills. But whether you work as a researcher, or work as part of our corporate team, your work and behaviour is underpinned by these six [values](#). They are what bring us together as one team - as 'One ICR'.



Our values set out how each of us at the ICR, works together to meet our mission – to make the discoveries that defeat cancer. They summarise our desired behaviours, attitudes and culture – how we value one another and how we take pride in the work we do, to deliver impact for people with cancer and their loved ones.”

Professor Kristian Helin
Chief Executive