ICR The Institute of Cancer Research

Post Doctoral Training Fellow *BRCA1/2* Functional Genomics (PI Chris Lord)

Candidate Information

August 2022

The Institute of Cancer Research

Description of the role

This position is based in the Gene Function Team (PI Prof. Chris Lord) at the ICR in Chelsea, Central London.

We are seeking a creative and motivated Postdoctoral Training Fellow to study the emergence, prevention and treatment of PARP inhibitor resistance in breast and ovarian cancer. PARP inhibitor resistance can emerge via a number of routes, but the most well-described clinical mechanism is via reversion mutations that restore the function of *BRCA1/2* (Pettitt *et al.*, *Cancer Discovery 2020*; reversions.icr.ac.uk).

The proposed project aims to experimentally characterise *BRCA* reversion mutations, to determine whether certain pathogenic mutations confer different risks of reversion, and whether genetic background, treatment regime or other interventions can modify reversion risk. This will entail the use of high throughput "tiling" CRISPR mutagenesis (Pettitt *et al. Nat Comms* 2018), insights from computational analysis of reversions (Pettitt *et al. Cancer Discovery* 2021) and small molecule DDR inhibitors which may modulate reversion development (Zatreanu *et al. Nat Comms* 2021). Models used will include cell lines, PDX, PDO and syngeneic mouse models, as well as analysis of sequencing data from human biopsies and ctDNA. The post would suit a candidate with strong CRISPR functional genomics, high throughput cell culture and/or DDR experience.

Post Doctoral Training Fellow
BRCA1/2 Functional Genomics (PI Chris Lord)
Candidate Information

This position is offered on a fixed term 3 year contract. Starting salary is in the range of £38,607* to £41,718 per annum inclusive based on previous postdoctoral experience .

**£32,844 for thesis submitted, awaiting PhD award*

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.

The ICR is committed to recruiting the best candidates and full support is offered to all successful candidates who are required to relocate from either within the UK or from overseas.

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

The ICR has a workforce agreement stating that the maximum period of employment for a Postdoctoral Training Fellow at The ICR is 7 years in total, and the maximum length of post doctoral experience (at the ICR and elsewhere) should be no more than 10 years.

About the team

The Gene Function Laboratory, led by Prof. Chris Lord, focuses upon identifying and understanding tumour specific dependencies, such as synthetic lethal effects, as a means to design novel approaches to treating cancer. We have made major advances in identifying synthetic lethal interactions involving, for example, PARP inhibitors (Farmer et al Nature (2005), Edwards et al Nature (2008), Bajrami et al, Cancer Research (2014)), ATR inhibitors (Williamson et al, Nature Communications (2016)) and ROS1 inhibitors (Bajrami et al, Cancer Discovery (2018)). We aim to generate pre-clinical information that can inform the design of clinical trials and the identification of novel targets for drug discovery programmes.

The Breast Cancer Now Toby Robins Research Centre at the ICR is the first centre in the UK entirely devoted to breast cancer research. Our goal is to advance research into the causes, diagnosis and treatment of breast cancer. It is located in state-of-the-art laboratory space, with excellent core facilities and is funded through a long term renewable programme grant from Breast Cancer Now. The Centre is directed by Clinician Scientist Professor Andrew Tutt. Professor Chris Lord is Deputy Director of the Centre. Our Breast Cancer Research Centre was recently awarded the 2022 AACR Team Science award with our breast cancer clinical research partners in the ICR's CTSU clinical trial unit and Royal Marsden Hospital.

Post Doctoral Training Fellow
BRCA1/2 Functional Genomics (PI Chris Lord)
Candidate Information

About our organisation

We are one of the world's most influential cancer research institutes with an outstanding record of achievement dating back more than 100 years. We are world leaders in identifying cancer genes, discovering cancer drugs and developing precision radiotherapy. Together with our hospital partner The Royal Marsden, we are rated in the top four centres for cancer research and treatment worldwide.

The Institute of Cancer Research, London, is one of the world's most influential cancer research institutes 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 institutes in research quality and impact, the ICR is consistently ranked as one of the world's most successful higher education institutions for industry collaboration. We are also a charity and rely on the support of partner organisations, funders, donors and the general public.

We have charitable status and rely on support from partner organisations, charities, donors and the general public.

We have more than 1000 staff and postgraduate students across three sites – in Chelsea and Sutton.

Our mission is to make the discoveries that defeat cancer.

Post Doctoral Training Fellow
BRCA1/2 Functional Genomics (PI Chris Lord)
Candidate Information

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'.

Pursuing excellence

We aspire to excellence in everything we do, and aim to be leaders in our field.

Acting with Integrity

We promote an open and honest environment that gives credit and acknowledges mistakes, so that our actions stand up to scrutiny.

Valuing all our people

We value the contribution of all our people, help them reach their full potential, and treat everyone with kindness and respect.

Working together

We collaborate with colleagues and partners to bring together different skills, resources and perspectives.

Leading innovation

We do things differently in ways that no one else has done before, and share the expertise and learning we gain.

Making a difference

We all play our part, doing a little bit more, a little bit better, to help improve the lives of people with cancer.

> ***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."*
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> **Professor Kristian Helin**
> **Chief Executive**

Post Doctoral Training Fellow
BRCA1/2 Functional Genomics (PI Chris Lord)
Candidate Information

Job description

Department / division:	Breast Cancer Research
Pay grade / staff group:	Post Doctoral Training Fellow
Hours / duration:	Full time 35 hours per week, Monday to Friday. Fixed term contract for 3 years
Reports to:	Dr Stephen Pettitt
Accountable to:	Professor Chris Lord
Main purpose of the job:	We are seeking a highly motivated Postdoctoral Training Fellow to study synthetic lethal effects that operate in cancer, with the express aim of developing better ways to treat the disease. This project will concentrate on characterising PARP inhibitor resistance emerging via reversion mutations.

Duties and responsibilities:

Specific duties:

To design and perform a project aimed at understanding how reversion mutations arise in cancer.
To analyse relevant profiling and experimental data relating to reversion mutation.
To identify, develop and use new functional genomics approaches as appropriate to the project.
To work under the supervision of the line manager and to consult where appropriate.
To take an interest in the relevant scientific literature.
To produce work suitable for high-quality, high-impact publications.
To maintain accurate records of experiments and reagent descriptions in laboratory notebooks
To prepare reports of results for oral and written presentations.
To keep up to date with the relevant literature.
To work in a flexible but organised manner.
To meet objectives within pre-determined timescales.
To familiarise yourself with the ICR's approach towards risk management including its policies and procedures, which require all staff to play an active part in identifying and managing risk.

Post Doctoral Training Fellow
BRCA1/2 Functional Genomics (PI Chris Lord)
Candidate Information

Post Doctoral Training Fellow workforce agreement

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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.

Post Doctoral Training Fellow
BRCA1/2 Functional Genomics (PI Chris Lord)
Candidate Information

Person specification

Education and Knowledge

Ph.D. in biology, genetics or other associated subjects**	Essential
Knowledge of cancer biology	Essential
Knowledge of high-throughput experimental genetics	Essential
Knowledge of DNA damage response biology	Essential
Knowledge of mouse models of cancer	Desirable
Knowledge of statistics	Essential
Understanding of the clinical management of cancers	Desirable
Strong track record in biomedical research as demonstrated by high-impact, first author publications in relevant areas	Essential

***** as a minimum requirement candidates must have submitted their thesis by the start date of their employment and been awarded their PhD within the six month probationary period.***

Experience

Considerable experience in cell and molecular biology	Essential
Considerable experience in tissue culture	Essential
Considerable experience with genome editing technologies (e.g. CRISPR-Cas9)	Essential
Experience with *in vivo* models of cancer	Desirable
Experience with analysis of next-generation sequencing data from experiments or clinical samples	Desirable
Experience in statistics and bioinformatics	Desirable
Experience in DNA repair assays	Desirable
Experience with patient-derived xenograft models	Desirable

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Candidate Information

Skills

Proven ability to work to deadlines	Essential
Proven ability to design and implement experiments	Essential
High degree of technical expertise	Essential
Good organisational skills	Essential
Ability to plan, organise & prioritise a busy workload	Essential
Ability to write scientific manuscripts	Essential

General

Flexibility to work as an individual or as a member of a team	Essential
Computer literate	Essential
Proven ability to work with limited supervision	Essential
To take interest in the relevant scientific literature	Essential
To work well under pressure whilst maintaining accuracy	Essential

Post Doctoral Training Fellow
BRCA1/2 Functional Genomics (PI Chris Lord)
Candidate Information

Benefits

We offer a fantastic working environment, great opportunities for career development and the chance to make a real difference to defeat cancer. We aim to recruit and develop the best – the most outstanding scientists and clinicians, and the most talented professional and administrative staff.

The annual leave entitlement for full time employees is 28 days per annum on joining. This will increase by a further day after 2 years' and 5 years' service.

Staff membership to the Universities Superannuation Scheme (USS) is available. The USS is a defined benefit scheme and provides a highly competitive pension scheme with robust benefits. The rate of contributions is determined by USS and details of the costs and benefits of this scheme can be found on their website. If staff are transferring from the NHS, they can opt to remain members of the NHS Pension Scheme.

We offer a range of family friendly benefits such as flexible working, a parents' group, and a maternity mentoring scheme. Other great benefits include interest free loans for discounted season tickets for travel and bicycle purchases, access to the NHS discounts website, a free and confidential Employee Assistance Programme which offers a range of well-being, financial and legal advice services, two staff restaurants, and access to a gym and sporting facilities at our Sutton site.

Further information

You may contact Dr Stephen Pettitt for further information by emailing stephen.pettitt@icr.ac.uk This job description is a reflection of the current position and is subject to review and alteration in detail and emphasis in the light of future changes or development.