



Post Doctoral Training Fellow: Endocrine Control Mechanisms

Candidate Information

March 2025

About the role

Under the leadership of Professor Cathrin Brisken, we are seeking a highly motivated and ambitious Postdoctoral Training Fellow, with experience in using mouse models of breast cancer in therapeutic studies.

This position will build on our recent work on using intraductal implantation of human cells, and *ex vivo* studies using breast cancers expanded via intraductal implantation. Professor Brisken's laboratory uses *in vivo* models for the most frequent, yet understudied, special histological subtype of breast cancer, invasive lobular carcinomas (ILCs). By comparing global gene expression profiles of lobular versus non-lobular ER+ PDXs, the group identified an ECM signature specific to ILCs and demonstrated that lobular carcinoma cells secrete their own extracellular matrix and matrix-modifying enzymes. Transcriptomic and proteomic studies will be used to investigate developing therapeutics for lobular breast cancer patients. The team collaborates with several groups at the ICR to validate our findings in animal models and patient samples. The successful candidate will have the intellectual freedom to develop the project, with support from the Group Leader, while working as part of a collaborative and multidisciplinary team.

The successful candidate must have previous experience in performing *in vivo* research studies. A strong cell and tissue biology background with an emphasis of studies using *in vivo* and *ex vivo* techniques is highly desirable. Experience using advanced surgical techniques such as insertion of optical windows and experience using intravital imaging is desirable. The question of how cancer cells and the microenvironment interact to drive tumorigenesis, metastasis and resistance to therapies will be investigated. An interest in the tumour microenvironment is desirable, particularly in how cells at metastatic sites establish, survive and proliferate following dormancy.

Post Doctoral Training Fellow: Endocrine Control Mechanisms

Candidate Information

This position will be offered on a fixed-term 3 year contract. Starting salary is based on previous Post Doctoral experience, in the range £45,600 - £49,350 p.a. inclusive.

The ICR has a workforce agreement stating that Postdoctoral Training Fellows can only be employed for up to 7 years as a PTDF at the ICR (this includes experience gained at PDTF level prior to joining the ICR).

About the team

The Endocrine Control Mechanisms group are using intraductal mammary gland implantation, and *ex vivo* studies using breast cancers expanded via intraductal implantation. We also use transcriptomic and proteomic studies to investigate therapeutics for breast cancer patients and improve the development of novel treatment options for them.

More than 70% of all breast cancers are ER+ but most preclinical models are ER-. The Brisken laboratory demonstrated that traditional engraftment of the ER+ MCF7 cells to the mouse mammary fat pad induces a basal gene expression program through a TGFb/SMAD3/SLUG axis. Engraftment of the same cells into murine milk ducts maintains their luminal phenotype. The engrafted human cells go on to recapitulate the human disease without any need for non-physiological hormone supplementation required in previous xenografts models. The intraductal approach has improved take rates for ER+ PDXs from 2.5% to >90% with a paradigm change in translational breast cancer research.

Research in Professor Brisken's laboratory focuses on the cellular and molecular underpinnings of estrogen, progesterone, and androgen receptor signalling in the breast and the respective roles of these hormones and hormonally active compounds in carcinogenesis. The aim is to understand how recurrent exposures to endogenous and exogenous hormones contribute to breast carcinogenesis to expand options to prevent and treat the disease. The laboratory has pioneered *in vivo* approaches to genetically dissect the role of the reproductive hormones in driving mouse mammary gland development and shown how they control intercellular communication. Professor Brisken's group has developed both *ex vivo* and humanized mouse models using patient samples to study hormone action in human tissues in normal settings and during disease progression. Experimental models also include 2D and 3D cell culture with a focus on ER+ breast cancer. There is a large focus on invasive lobular carcinomas (ILCs) within the Division of Breast Cancer Research with opportunities for collaborative with other labs.

Post Doctoral Training Fellow: Endocrine Control Mechanisms

Candidate Information

We work closely with The Patient Derived Models Team in the Breast Cancer Research Division which derives and utilizes intraductal xenograft (PDX) implantation of human breast cancer cells and 3D in vitro organoid (PDO) models of breast cancer.

About the Division of Breast Cancer Research

Our team is embedded within the Division of Breast Cancer Research at the ICR's laboratories in Chelsea, London. We have a highly supportive and interactive research environment, and state of the art facilities for cell biology, molecular biology, next-generation sequencing and structural biology. We also closely interact with other teams and divisions at the ICR, including the Bioinformatics and Proteomics, Chemistry Cancer Therapeutics - Medicinal Chemistry Teams Drug Discovery Team. The great variety of disciplines at the ICR will ensure that the successful candidate will be exposed to fantastic research and seminars from all types of backgrounds.

The Breast Cancer Now Toby Robins Research Centre, within the Division of Breast Cancer Research at The Institute of Cancer Research which 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 awarded the 2022 AACR Team Science award with our breast cancer clinical partners in the ICR's CTSU clinical trial unit and Royal Marsden Hospital, and also received recognition in an award to the ICR for the 2023 Queen's Anniversary Prize for transforming lives through world-leading breast cancer research.

<https://www.icr.ac.uk/our-research/research-divisions/division-of-breast-cancer-research>

Post Doctoral Training Fellow: Endocrine Control Mechanisms

Candidate Information

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.

Post Doctoral Training Fellow: Endocrine Control Mechanisms

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.

Professor Kristian Helin
Chief Executive

Post Doctoral Training Fellow: Endocrine Control Mechanisms

Candidate Information

Job description

Department / division: Endocrine Control Mechanisms group / the Division of 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: Professor Cathrin Brisken

Main purpose of the job: The design and execution of a broad range of *in vivo* and *ex vivo* assays geared towards the uncovering of tumour microenvironmental mechanisms that drive immune escape and therapy resistance in breast cancer patients with ER+ILC.

Duties and responsibilities:

Key duties

- Work with immunocompromised mice to establish, propagate and study mouse models of ER+ breast cancer with an emphasis on ER+ lobular breast cancers
- Design and perform *in vivo* and *ex vivo* functional assays
- Undertake mammalian tissue culture
- Work in a flexible but organised manner to meet objectives/deadlines and be able to sequentially work on different projects
- Maintain accurate and detailed records of all experiment procedures in lab notebooks and electronically
- Generate solid reproducible data and develop robust methods for analysis and statistical testing of the data
- Critically analyse data and write up findings for publication in recognised peer-reviewed journals
- Participate in and contribute to regular group meetings
- Prepare and present results at internal and external meetings

Post Doctoral Training Fellow: Endocrine Control Mechanisms

Candidate Information

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.

Workforce Agreement for Postdoctoral Training Fellows

The ICR has a workforce agreement stating that Postdoctoral Training Fellows can only be employed for up to 7 years as a PTDF at the ICR (this includes experience gained at PDTF level prior to joining the ICR).

Post Doctoral Training Fellow: Endocrine Control Mechanisms

Candidate Information

Person specification

Education and Knowledge

PhD in biochemistry, cell biology, molecular biology or similar	Essential**
Knowledge of Tumour-Stromal interactions	Essential
Knowledge of cancer biology	Essential
Knowledge of tumour biology	Essential
Knowledge of breast cancer biology	Essential
Holder of UK Personal Home Office License (PIL)	Desirable

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

Skills

Ability to work independently and meet deadlines	Essential
Ability to critically analyse data	Essential
Ability to design experiments and execute them reproducibly	Essential
Ability to produce scientific reports and manuscripts	Essential
Effective collaboration skills and ability to work productively with others	Essential
Enthusiastic and self-motivated with a strong desire to achieve scientific excellence	Essential
Excellent record keeping in notebooks, files and computers in line with ICR laboratory policy	Essential
Ability to work effectively under pressure whilst maintaining accuracy	Essential
Demonstrable excellent written and oral communication skills, including the ability to write scientific manuscripts	Essential
Proven ability to rapidly learn new techniques and a strong commitment to learn new research technologies	Essential
Results-orientated; adaptable approach to answering scientific experiments	Essential
Ability to develop, support and train team members	Essential
Good interpersonal skills with the ability to establish effective working relationships	Essential

Post Doctoral Training Fellow: Endocrine Control Mechanisms

Candidate Information

Experience

Mouse models of cancer (<i>in vivo</i> work)	Essential
Mammalian cell culture (passaging, transfection, stable line generation)	Essential
Multi-colour flow cytometry/FACS analysis of (tumour) tissue	Desirable
Genomic approaches (e.g. scRNAseq, WES/WGS or spatial approaches)	Desirable
Immunohistochemistry/immunofluorescence	Desirable
Image analysis	Desirable
Authorships in peer-reviewed literature illustrating each of the above	Essential
Experience in managing laboratory research of others, including, technicians, clinical fellows and PhD students	Essential
Experience in the drafting, submission and revision of peer reviewed research manuscripts	Essential
Experience in managing research projects between multiple partners, including both internal and external collaborators	Essential

General

Flexibility to work, efficiently and effectively, independently or as part of a team	Essential
Computer literate	Essential
Proven ability to work with limited supervision	Essential
To take interest in the relevant scientific literature	Essential

Post Doctoral Training Fellow: Endocrine Control Mechanisms

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

Download the job pack for more detailed information regarding this role. For an informal discussion regarding the role, please contact Professor Brisken via email: cathrin.brisken@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.