ICR The Institute of Cancer Research

Post Doctoral Training Fellow: *In vivo* Modelling Team

Candidate Information

August 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 complex preclinical *in vivo* models.

The *In Vivo* Modelling Team, part of our wider Translation Support Team, generates and characterizes patient-derived xenograft (PDX) models of breast cancer subtypes that were previously unavailable due to poor engraftment rates such as estrogen receptor–positive (ER+) and lobular breast cancers, using Mammary Intraductal Modelling (MIND) as well as other innovative PDX approaches. These models enable longitudinal study of therapy response in patients and facilitate investigations into endocrine and other targeted therapy resistance.

This position builds on recent work demonstrating that intraductal implantation of human cells yields ER+ breast cancer models that faithfully recapitulate many features of the human disease. The aim is to expand and enhance the use of these advanced patient-derived models for preclinical studies across the centre, accelerate clinical translation, and exploit PDX panels for biomarker development.

The successful candidate will have the intellectual freedom to innovate in the development of our projects (with support from the Group Leader) while working as part of a collaborative, multidisciplinary team. The postholder will contribute to collaborations across the Breast Cancer Research Divison's Breast Cancer Now Programme, including the Invasive Lobular Carcinoma Initiative conducted in collaboration with the Breast Cancer Now Unit at Kings College London.

Post Doctoral Training Fellow: *In vivo* Modelling team

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 team generates and develops innovative models to meet the in vivo experimentation needs of the center. These include a particular expertice and focus on MIND-PDXs. It characterizes disease progression, biology and drug response in these models. The work is done in close co-ordination with clinical tissue collectors, the *in vitro* patient derived organoid (PDO) modelling team, pathology, digital pathology, and the Breast Cancer Data Science Core across the integrated ICR/KCL Breast Cancer Now Programme.

The team generates PDX models from primary untreated tumours and tumours harvested during the evolution of drug-resistance. There is a particular focus in the Centres Programmes on targetted therapy resistant hormone receptor positive (ER+, PgR+ or AR), lobular or homologous recombination deficient cancers.

The team coordinates data management and develops both experimental and computational methods to improve the use of the translational value of these sophisticated models.

It assists the wider Breast Cancer Now Centre teams in the design of innovative *In Vivo* PDX experiments conducted by those teams. The team also deploys it's specialist expertise in MIND-PDX to conduct experiments in collaboration with the Centre Group Leaders after detailed project planning.

Post Doctoral Training Fellow: *In vivo* Modelling team

Candidate Information

About the Division of Breast Cancer Research

Our team is embedded within the Division of Breast Cancer Research's Breast Cancer Now Research Centre 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 within our Research Centre and wider divisions at the ICR. This includes our Data Science team, Proteomics, and Drug Discovery Division's Medicinal Chemistry team. The great variety of disciplines at the ICR ensure that the successful candidate will be exposed to fantastic research and seminars from scientists of all types and backgrounds.

The Breast Cancer Now Toby Robins Research Centre, within the Division of Breast Cancer Research at The Institute of Cancer Research began 25 years ago and was 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, a Cancer Biologist 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 2024 Queen's Anniversary Prize for transforming lives through world-leading breast cancer research.

Post Doctoral Training Fellow: *In vivo* Modelling team

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 Lonon, 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: *In vivo* Modelling team

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: *In vivo* Modelling Team

Candidate information

Job description

Department / division:	In Vivo Modelling Team / Translational Research Support / 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* assays geared towards the uncovering mechanisms that drive therapy resistance in breast cancer patients.

Duties and responsibilities:

Key duties

- Generate, develop, and characterize PDX models for preclinical research with main focus on MIND-PDX.
- Perform in vivo studies, including advanced surgical techniques such as insertion of optical windows.
- Develop and optimize experimental and computational approaches to enhance model utility in translational research.
- Work in a flexible but organised manner to meet objectives/deadlines and be able to sequentially work on different projects
- Collaborate with internal and external teams, including tissue collection, in vitro modelling, pathology, digital pathology, and the Breast Cancer Data Science Core.
- Contribute to biomarker development projects using PDX panels.
- 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
- Present results at ICR, UK and international external meetings

Post Doctoral Training Fellow: *In vivo* modelling Team

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

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Post Doctoral Training Fellow: *In vivo* modelling Team

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	Desirable
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: *In vivo* modelling Team

Candidate Information

Experience

Mouse models of cancer (*in vivo* work)	Essential
Mammalian cell culture (passaging, transfection, stable line generation)	Essential
Genomic approaches (e.g. RNAseq, WES/WGS or spatial approaches)	Essential
Immunohistochemistry/immunofluorescence	Essential
Image analysis	Essential
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
Experience using 3D models	Essential
Experience with RNA sequencing	Essential
Experience with spatial transcriptomic analysis	Essential
Experience with use of patient cancer samples	Essential
Experience with analysis of tumour vasculature	Essential
Experience with analysis of response to radiotherapy *in vivo* and *in vitro*	Essential
Experience with imaging of of tumours growing in transgenic mice or in mice injected with fluorescently labelled tumours	Essential
Experience using R and R Studio for data processing, visualization, and statistics	Essential
Knowledge of Python or other experience with programming	Essential
Knowledge of hormonal signaling (i.e. progesterone receptor signaling in pregnancy) and estrogen receptor role in breast cancer	Essential
Experience using dorsal skinfold window chamber model	Essential
Multi-colour flow cytometry/FACS analysis of (tumour) tissue	Desirable

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 and attend and present at conferences	Essential

Post Doctoral Training Fellow: *In vivo* modelling Team

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.