
Higher Scientific Officer - Genomics and Evolutionary Dynamics Candidate Information

July 2022

The Institute of Cancer Research

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.

As well as being a world-class institute, we are a college of the University of London. We came top in the league table of university research quality compiled from the Research Excellence Framework.

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.

About our Centre

The Centre for Evolution and Cancer (CEC), within the Division of Molecular Pathology, is a multidisciplinary centre, comprising around 40 staff dedicated to understanding cancer evolution and leveraging this knowledge for translational benefit. Our interests span early detection through to treatment of metastatic disease. The CEC brings together expertise in evolutionary theory, computational biology and bioinformatics together with cutting-edge research ability in cell and molecular biology to provide a stimulating and creative interdisciplinary environment where new approaches to tackling cancer can thrive.

Higher Scientific Officer - Genomics and Evolutionary Dynamics

Candidate Information

About our team

The Genomics and Evolutionary Dynamics team combine (epi)genomic, transcriptomic and histological data with bioinformatics and mathematical modelling to reconstruct the evolutionary history of colorectal cancer, and predict the direction that future evolution will take. Our hope is to translate this knowledge for patient benefit, by deriving evolutionary biomarkers for prognosis and treatment response.

We are based at the ICR Sutton site within the Centre for Evolution and Cancer, located in the outstanding facilities of the newly opened Centre for Cancer Drug Discovery building. The team is highly experienced in multi-omic data generation and integration, and using this in-house data together with large publicly available datasets, we apply the principles of evolutionary biology and ecology to understand the natural history of cancer. Pertinent to this role, we are equipped with cutting-edge single cell sequencing technologies such as the cellenONE (Cellenion) and the Chromium system (10X Genomics), with further access to an on-site Illumina Novaseq in the sequencing core facility. Furthermore the team has access to a CODEX (Akoya Bioscience) for highly multiplexed spatial analysis.

You will be joining a highly diverse and interdisciplinary team of about 15 people, consisting of clinicians, biologists, mathematicians and computational scientists. Our ideal candidate will have previous laboratory experience, ideally with training in genomics or histology. Senior scientists will provide full training in new techniques, and support will be available for attending training courses and appropriate academic meetings.

Our mission
is to make the
discoveries that
defeat cancer.

Higher Scientific Officer - Genomics and Evolutionary Dynamics

Candidate Information

Job description

Department / division: Centre for Evolution and Cancer
Division of Molecular Pathology

Pay grade / staff group: Scientific Professional 5/
Higher Scientific Officer

Hours / duration: Full time (35 hours per week), Monday to Friday. Fixed term contract for 3 years

Reports to: Prof Trevor Graham

Main purpose of the job: The post holder's responsibilities will be to coordinate the collection, processing and storage of patient tissue, and to provide laboratory-based technical and scientific support to the Genomics and Evolutionary Dynamics team including cell-based, molecular biology and -omics assays. The position occupies a central role within this highly multidisciplinary team, and as such the post holder will be required to liaise closely with wet-lab, clinical and computational staff.

Duties and responsibilities:

KEY DUTIES & RESPONSIBILITIES

Collection, processing and storage of patient tissue, under the Codes of Practice of the Human Tissue Act.
Liaising with clinical teams (surgeons, pathologists and research nurses) to ensure tissue collections are well-planned and efficient.
Isolation of single glands from patient tissues using a dissecting microscope.
Developing and maintaining cell culture and 3D organoid models, including treatments with clinically relevant drugs.
Performing of basic molecular biology techniques, such as nucleic acid extraction and PCR.
Construction of libraries for next generation sequencing.
Running histological assays, such as immunohistochemistry, immunofluorescence and in situ hybridisation.
Coordinating research plans with both wet-lab and computational staff within the Genomics and Evolutionary Dynamics team.
Making up buffers and reagents for genomic, histological and/or biochemical experiments.
Assisting in the training of new team members and junior colleagues.

Higher Scientific Officer - Genomics and Evolutionary Dynamics

Candidate Information

Attending weekly group meetings / departmental seminars and reporting research results as required.
Working in a flexible, but organised manner to meet the objectives and deadlines for the project.
Ensuring accurate capture, analysis and interpretation of data in collaboration with the line management team.
Ensuring that experimental data is recorded in our electronic notebook system.
Preparation of reports of results for oral or written presentations at internal meetings and for publication in scientific journals or patents.

GENERAL DUTIES

Ensure that work carried out conforms to the requirements of the Human Tissue Act, Research Ethics, COSHH, ACGM, local rules and codes of practice as required by The ICR safety policy.
Become familiar with the principles, use and maintenance of our laboratory equipment.
Use scientific literature to keep abreast of new findings appropriate to the work.
Communicate effectively with other members of the group, project teams and collaborating organisations/vendors as required.
Initiate purchase of consumables and minor equipment within budgetary limits.

General

The position is likely to require some travel between sites within London, and some flexibility of working hours as dictated by tissue collection schedules.
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.
This job description is a reflection of the present position and is subject to review and alteration in detail and emphasis in the light of future changes or development.

Higher Scientific Officer - Genomics and Evolutionary Dynamics

Candidate Information

Person specification

Education and Knowledge

MSc in Biochemistry/Cancer Biology/Molecular Biology or related subject	Essential
PhD in Biochemistry/Cancer Biology/Molecular Biology or related subject	Essential
Demonstrable knowledge of cancer biology, genetics and epigenetics	Essential
Demonstrable knowledge of next generation sequencing techniques	Essential
Demonstrable knowledge of 3D in vitro models and in vivo models	Essential
Working knowledge of Research Ethics and the Human Tissue Act	Desirable

Skills

Good communication skills and the ability to interact effectively with other team members.	Essential
Good observation skills, attention to detail and ability to keep appropriate records.	Essential
Ability to work independently and to demonstrate initiative in planning and designing experiments.	Essential
Good time management skills and a proven ability to organise and prioritise workload to meet deadlines.	Essential
Ability to prepare scientific reports and present data at regular project meetings.	Essential
Computer literate with ability to use e.g. MS Office, web-based tools and databases.	Essential
Highly self-motivated and enthusiastic, with a keen desire to produce high quality scientific data.	Essential
Willingness to learn new techniques/approaches.	Essential
Ability to contribute to team/project aims.	Essential

Experience

Appropriate publication record for career stage.	Essential
At least 5 years postgraduate experience of working in a research laboratory setting	Essential
Experience in biobanking, and awareness of the regulatory issues relating to the use of human tissue in research	Desirable

Higher Scientific Officer - Genomics and Evolutionary Dynamics

Candidate Information

Demonstrable practical experience in genomics techniques, such as library preparation for whole genome or whole exome sequencing	Essential
Experience in cell dissociation and mammalian stem cell culture techniques, including 3D cultures and organoids	Essential
Experience of single cell methodologies	Essential
Experience in preparation of samples for RNAseq, ATACseq and methylation arrays	Essential
Experience of histological techniques, such as immunohistochemistry or in situ hybridisation	Essential
Experience in animal research, including xenograft models and <i>in vivo</i> imaging	Desirable
Experience of microscopy, digital imaging and image analysis	Desirable
Experience of database curation	Desirable

Higher Scientific Officer - Genomics and Evolutionary Dynamics

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 Prof Trevor Graham for further information by emailing trevor.graham@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. Please **DO NOT** send your application to Prof Trevor Graham, but **apply via the e-recruitment system on our website www.icr.ac.uk**.

Higher Scientific Officer - Genomics and Evolutionary Dynamics

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