

Job Description

Research Associate in Genome Stability and Proton Radiation

Salary:	Grade 6 £37,694 to £41,064 per annum, depending on relevant experience
Hours:	Full time (1 FTE)
Duration:	Fixed term for 18 months in the first instance (with a view to extending, depending on available funding), commencing April 2026
Department:	Division of Cancer Sciences, Faculty of Biology, Medicine & Health (FBMH)
Enquiries:	Dr Stefan Meyer: Stefan.meyer@manchester.ac.uk Dr Christine Schmidt: Christine.schmidt@manchester.ac.uk

Overall Purpose

We are seeking a highly motivated Research Associate to drive a project, aimed at understanding the effect of proton and photon radiation on tissue derived from individuals with inherited chromosomal instability and telomere spectrum disorders (CISTDs), such as Fanconi anaemia (FA) and Bloom Syndrome (BS).

Working alongside a team of experts, the successful candidate will apply radiation, tissue culture, wet-lab and data analysis to complete the milestones of a project funded by The Christie Charity, with the support of the Fanconi Hope Charitable Trust. The post holder will be embedded in the Genome Stability Laboratory and the PRECISE Proton Research Group, with access to unique research facilities for proton radiation research and the DNA damage response in Manchester.

The researcher will contribute to the ongoing development and incorporation of new technologies in the radiation of cultured tissue from patients, recapitulate the genetic loss of key genetic events that occur in tumours and study tumour cell response in populations with varying levels of genomic instability in cells and tissues.

The role holder is also expected to provide training to colleagues where appropriate and support other members of the team in a diverse range of research projects. Active communication with collaborators involved in this project is required.

This role offers the opportunity to contribute to cutting-edge cancer research with real-world clinical implications, ultimately supporting the development of precision medicine approaches for an important but neglected patient population with significant implication for cancer treatment in general.

About the Team

The role holder will be embedded into the Division of Cancer Sciences, FBMH University of Manchester and the Manchester Cancer Research Centre, situated in the Oglesby Cancer Research Building in the laboratory of:

Dr Stefan Meyer, Dr Christine Schmidt – Genome Stability Laboratory

<https://research.manchester.ac.uk/en/persons/christine.schmidt>

<https://research.manchester.ac.uk/en/persons/stefan.meyer>

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Dr Michael Taylor – PRECISE Proton Therapy Research Group, Proton Therapy Building, The Christie NHS Foundation Trust

<https://sites.manchester.ac.uk/proton/>

Division of Cancer Sciences (DCS)

The Division of Cancer Sciences (DCS), which is effectively a large university department, was created in August 2016 with Prof. Stephen Taylor appointed as Head of Division in February 2019. It is a major contributor to the University's Cancer beacon and the wider Manchester cancer ecosystem, with research interests spanning discovery science, translational research and clinical studies.

The Division currently comprises approx. 300 staff including 66 academics, 66 researchers, 131 trainees and 28 admin staff. 168 honorary staff are associated with the Division; while not employees of the University they make invaluable contributions to a wide range of our activities, adding breadth and depth to our research, business engagement, teaching, social responsibility and internationalization.

The Division of Cancer Sciences is very research active; with associated awards in 2016-2020 totaling over £450M. DCS has a strong portfolio of income from industry, working with a number of companies including Novartis, AstraZeneca, Merck, GlaxoSmithKline and Varian. The Division has a healthy pipeline of industrial collaborations and we wish to build on these successful partnerships. Supporting a strong research profile, DCS generates a large number of high-quality publications and we envisage a strong REF return at the next national audit. A large proportion of publications are in clinical oncology journals (e.g., *Lancet Oncology*, *J Clin Oncol*) consistent with the Division's strength in clinical research, but DCS staff also publish in high impact discovery journals (e.g., *Nature*, *Cancer Cell*).

Division staff contribute to a wide variety of teaching activities, including at undergraduate level within SMS (e.g., lectures, PBLs, PEPS and APEPs on the pre-clinical MB ChB program) and SBS (e.g., lectures, tutorials, practicals and projects on various life sciences units). The Division contributes to units in other Faculties, (e.g., medical physics in FSE). The Division also runs of a number of Masters programs in the oncology space (e.g. Experimental Cancer Medicine, Oncology, Cancer and Biology and Radiotherapy physics). In 2019, the Division made its first teaching-focused

appointment with the primary objective of establishing a novel blended on-line

Transformative Oncology Masters program. This is on schedule to be launched in September 2021 with the first students enrolling in September 2022, with a target

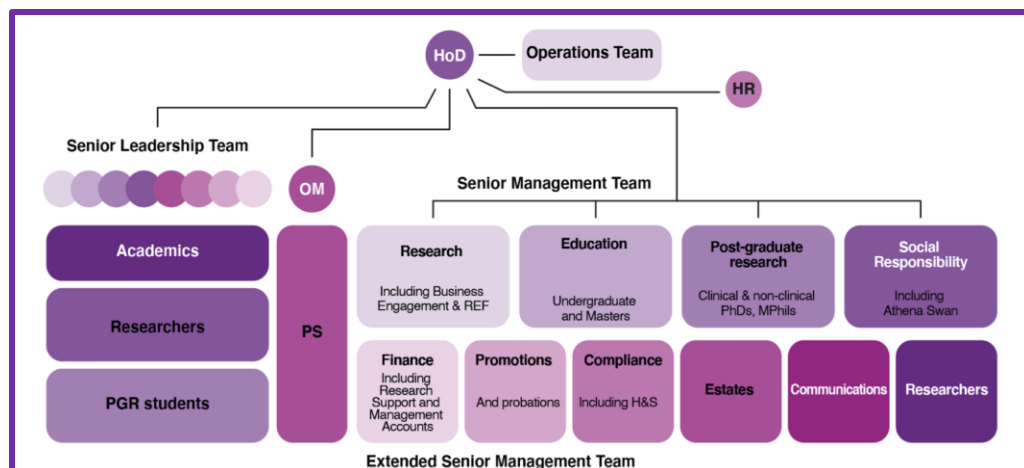


Figure 3. Organigram showing the Division structure. OM, Operations Manager; PS, Professional Services; HR, Human Resources.

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of 30 students in the first year, rising to 45 and 60 in subsequent years.

To manage the Division, we have established a comprehensive sub-structure comprised of an Operations Team, a Senior Leadership Team, a Senior Management Team and committees (**Figure 3**). The Operations Team meets weekly to update, discuss and action a variety of operational matters. The Senior Leadership Team consists of senior academics whose role is to assist the Head of Division with line management and annual P&DRs of the academic staff, and to provide guidance and advice to the Head of Division. In Spring 2020, we established a comprehensive set of sub-committees covering key areas of activity. The key leads form the Senior Management Team (SMT) who meet frequently to develop and deliver the Division's strategy. This new structure provides a functional framework for the Division and is allowing researchers and junior academics to help shape the Division into a vibrant academic environment. For example, the Researcher Committee has established an internal seminar series, while in parallel, four junior academics have established a '*Next generation*' external seminar program which showcases external cancer-related research from investigators at the early stages of their independent careers.

Our strategic partnerships

The Division of Cancer Sciences has a number of key strategic partnerships that underpin its ambitions to develop next generation teaching and research.

The Manchester Cancer Research Centre. Led by Professor Rob Bristow, the MCRC is a world-leading research partnership founded by The University of Manchester, Cancer Research UK and The Christie NHS Foundation Trust, and is responsible for driving a consistent and integrated strategy for cancer research and innovation in Manchester. The MCRC's vision is that by uniting science and driving clinical excellence we will create a future free from the burden of cancer. In order to achieve this vision, the MCRC is leading in the development of prevention and early detection and precision medicine strategies that enable cancer to be identified earlier and curative treatments to be delivered to everyone. As a hub for Cancer research in the University structure, the Division of Cancer Science is a key component of the MCRC with many of our academic cohort working closely with the MCRC to drive a *one-Manchester* cancer vision to achieve *Precision Medicine for All*.

The Cancer Research Manchester Institute. The CRUK MI is a leading cancer research institute within The University of Manchester, spanning the whole spectrum of cancer research, from investigating the molecular and cellular basis of cancer, to translational research and the development of therapeutics. The Institute supports a number of investigative programmes, spanning both basic and translational cancer research. It has excellent laboratory facilities and outstanding core services, including genomic sequencing, confocal microscopy, bioinformatics, histology, and access to mass-spectrometry based proteomics. Staff within the Division of Cancer Sciences work very closely with CRUK MI staff at both the research and operational level, sharing both lab and dry space across the cancer campus, and together with the MCRC we aim to create a truly fantastic working environment that will allow all three partners to deliver their strategic goals.

The Christie NHS Foundation Trust. The Christie Hospital is the largest single site cancer centre in Europe, treating more than 60,000 patients a year. Based in Withington, it serves a population of 3.2 million people across Greater Manchester and Cheshire while more than a quarter of our patients are referred to us from across the UK. The Christie is ranked as the most technologically advanced cancer centre in the world outside North America, and has been named by the National Institute for Health Research as one of the best hospitals providing opportunities for patients to take part in clinical research studies. The Christie's clinical services include radiotherapy, where is home to one of the world's largest radiotherapy departments and is now also the first NHS organisation in the UK to deliver high energy proton beam therapy; chemotherapy where it is one of the UK's

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largest chemotherapy unit; highly specialist surgery for complex and rare cancers as well as a wide range of support and diagnostic services.

Key Accountabilities, Duties and Responsibilities

- Conduct high-quality research to deliver the objectives and outcomes of the project using appropriate wet-lab techniques and research facilities
- Contribute to individual and collaborative research projects, under the guidance of senior colleagues
- Plan organise and manage research activities ensuring progress against agreed objectives and deadlines
- Apply established research methods to analyse interpret and present research data accurately and effectively
- Undertake literature reviews to maintain up-to-date knowledge of the research field and inform ongoing research activity
- Communicate research findings clearly and effectively, both orally and in writing, to academic and non-academic audiences
- Attend and contribute to laboratory meetings, seminars and conferences, including presenting research findings where appropriate
- Prepare research outputs for publication and assist with the preparation of reports, grant applications and other research documentation
- Provide support and guidance to students and colleagues as appropriate, including assisting with training activities
- Work collaboratively with colleagues within the research group and across related programmes to support shared research objectives
- Build effective working relationships and participate in internal networks to support collaboration and knowledge exchange
- Willingness to work flexibly to accommodate specific experimental requirements requiring out-of-hours access to the Proton Beam Therapy Research Room once clinical treatments are completed (typically a 4-hour window between 9 pm and 4 am, including evenings or weekends)
- Manage research resources responsibly and contribute to administrative processes associated with research activity
- Ensure compliance with University policies and research governance requirements including health and safety procedures and good research practice

Knowledge

Essential

- Specialist knowledge in cell culture, cell biology and genome stability fields relevant to the role
- Ability to evaluate and interpret complex data
- Evidence of a developing publication record
- Understanding of research governance and equality, diversity and inclusion considerations in research
- Excellent communication and interpersonal skills
- Ability to liaise confidently and effectively with a range of individuals
- Strong organisational and time management skills
- Ability to work independently and as part of a multidisciplinary team
- Willingness to learn, develop and adapt to new research challenges

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	<p><i>Desirable</i></p> <ul style="list-style-type: none"> • Knowledge of concepts and technologies relating to DNA damage and repair, replication stress response and radiation • Familiarity of syndrome-associated cancer and underlying cell genetics and cell biology
<p>Experience</p>	<p><i>Essential</i></p> <ul style="list-style-type: none"> • PhD (or close to completion) in a relevant discipline • Experience of applying research methods and techniques within established research programmes, including bioinformatics • Ability to analyse and present research findings clearly in written and oral formats • Flexible and proactive approach to addressing research challenges as they arise • Ability to plan work effectively, manage priorities and meet deadlines • Ability to assess and organise resources • Ability to contribute to management and administrative processes relevant to research activity <p><i>Desirable</i></p> <ul style="list-style-type: none"> • Experience of using radiation technologies • Basic understanding of radiation physics • Experience in deriving and working with primary cell lines from human tissues • Experience in cell biology (flow cytometry, immunofluorescence, DNA, RNA, protein assays, biochemical wet-lab techniques, cell culture) and DNA repair assays (COMET, flow-based, DNA repair-foci-based and R-loop-based assays) • Experience in supervising students or other junior researchers.