Imperial College London

Job Title:	Research Associate in Epigenetics – UK Dementia Research Institute
Department/Division/Faculty:	Brain Sciences / UK DRI
Campus location:	White City Campus
Job Family/Level:	Research Associate Candidates who have not yet been officially awarded their PhD will be appointed as a Research Assistant within the salary range £35,477 - £38,566 per annum.
Responsible to:	Dr Nathan Skene
Line Management responsibility for:	N/A
Key Working Relationships (internal):	Research, technical and professional staff, and students of the UK DRI and in the Department of Brain Sciences, Imperial College London
Key Working Relationships (external):	Research and professional staff of the UK DRI and collaborating partners as relevant to the project.
Contract type:	Full-time, fixed term until 31 March 2023 with extension for a further 5 years

Purpose of the Post

The UK DRI is seeking an outstanding Research Associate in Single Cell Epigenetics interested in taking on a challenging role with considerable scope for independent scientific achievement and personal growth. The ideal candidate will be passionate about tackling big problems with data-driven genetically-focused strategies.

Dementias represent one of the toughest medical and economic challenges facing our society today. The UK Prime Minister's Challenge on Dementia 2020 set a target for research to identify treatments for dementia by 2025. The Medical Research Council (MRC) and charity partners the Alzheimer's Society and Alzheimer's Research UK invested £290m in a new Dementia Research Institute (UK DRI) https://ukdri.ac.uk/ to fulfil this ambition.

The UK DRI Centre at Imperial College London was established as one of seven national centres of excellence embedded in major UK universities that together, are intended to transform the treatment and care for people with dementia and lead the way in early diagnosis and prevention. Our Centre addresses dementia in the context of brain changes over the lifespan, homeostatic mechanisms and influences of environment and lifestyle. We develop new tools for discovery of disease mechanisms and directly address the identification of new therapeutic targets and treatment concepts. Our clinical leadership fosters a translational environment enabling discoveries in the human diseases, as well as in animal or cellular models.

This project uses single cell epigenetics to address key questions about the mechanisms of neurodegenerative disease. In a series of recent publications in Nature Genetics, the lab has demonstrated that single cell RNA-seq data from mice can be used to identify the cell types associated with genetic risk factors for neurodegenerative disease. To perform this mapping, we use GWAS summary statistics generated by our collaborators at a variety of international consortia and personal genomics companies. Identification of cell types genetically implicated in disease, enables better drug targeting efforts as it is free from the confounds associated with neuropathology and mouse modelling. Critical questions remain open about the etiologically relevant cell types and the regulatory effects of disease loci within those cells. We are looking to establish the use of single cell epigenetic techniques, such as ATAC-seq and CUT&TAG, as this will enhance our ability to map intergenic loci to cell type specific features. This project will involve working with human tissue brain banks, to apply these methods to targeted populations of cells.

The post-holder will be accountable directly to Dr Nathan Skene. They will work within our new, purpose-built laboratory space in the Sir Michael Uren Hub at the White City Campus. They will work within a mission-focused team of experimental and computational biologists as well as collaborating with neuropathologists and brain banks. Our centre of the UK DRI has made a strong commitment to neurogenomics and epigenetics, providing a critical mass of other closely collaborating research groups in the department, including the labs of Dr Alexi Nott, Dr Sarah Marzi, Dr Raffaella Nativio and Prof Paul Matthews. The collaborative and interdisciplinary environment will allow for production of high-profile research complete with validations and functional experiments. The UK DRI supports the development of early career researches and provides funding opportunities for postdoctoral researchers to develop their own projects. The post-holder will be encouraged to apply for these to build their independent research platform.

Our research areas are evolving rapidly, and we are working closely with a broad range of other scientists across the UK DRI and in external universities. We recognise that new ideas always are needed in the field and the post holder will be given opportunities to explore their own and other novel ideas, train in new methods and develop new competencies. Imperial College also encourages continued professional development of its staff through both internal and external educational courses covering skills such as project, financial or time management and communication, as well as scientific topics. The post holder also will be supported to attend scientific meetings to present work, subject to progress and budgets.

Key Responsibilities

Research Duties
The post-holder will be expected to:
- To work collaboratively as part of a multidisciplinary research team
- To learn and apply suitable techniques for the analysis of complex genomic data
- To conduct and interpret data analysis, and prepare suitable summary outputs of the analysis
- To maintain accurate and complete records of all findings using electronic notebooks and version-controlled systems
- Work with PIs to develop novel research concepts, approaches and tools
- Integrate multiple methods as part of well-designed research plans that efficiently address and resolve fundamental research questions
- Creatively adapt available tools or resources to meet experimental challenges
- Seek and lead on external collaborations to harness additional external expert resources or tools
- Contribute to management of the research groups and laboratory spaces in a responsible and collegial fashion
- Deliver regular reports of research to the PI, within the UK DRI Centre and externally at national or international meetings
- Lead in preparation of research outcomes for publication

Administrative Duties
- General laboratory administrative duties
- Helping to ensure that key equipment and stocks of supplies needed for research are maintained
- Supporting management of major pieces of equipment and planning allocation of use
- Ensuring good laboratory practice is used and complying with relevant regulations or guidelines
- Helping to maintain records and assisting with preparation of reports to the Human Tissues Authority

Other Duties
- To contribute to teaching and research supervision of technicians, other researchers or students in the laboratory
- To undertake other occasional teaching or educational support activities as might be requested by the PI
- To undertake any necessary training as required
- Any other duties commensurate with the grade of this post as reasonably directed by the PI

Person Specification

Requirements Candidates/post holders will be expected to demonstrate the following:	Essential (E)/ Desirable (D)

Education	
• **Research Assistant:** Near completion of a PhD (or equivalent) biochemistry, molecular biology or a closely related discipline, or equivalent research, industrial or commercial experience	E
• **Research Associate:** PhD (or equivalent) biochemistry, molecular biology or a closely related discipline, or equivalent research, industrial or commercial experience	E
Experience	
• Evidence for mastery of laboratory-based molecular biology skills	E
• Experience with some genomic techniques including but not limited to ATAC-seq, RNA-seq, DNase-seq, MNase-seq, CUT&TAG, CUT&RUN, Radicl-seq or Hi-C.	E
• Experience working with bio-banked tissue	D
• Familiarity with neuroanatomy and/or immunology	D
• Experience with flow cytometry	D
• Experience working with single cell/nuclei disassociation protocols	D
• Ability to program in R or other coding languages (e.g., C++, Python)	D
• Experience using version control systems such as git and github	D
• Experience with a broad range of bioinformatics tools and databases	D
• Postdoctoral training with evidence of high productivity	D
• Background in a similar work environment	D
Skills & Abilities	
• Methodical approach	E
• Close attention to detail	E
• Good interpersonal and organisational skills	E
• Ability to work independently and keep meticulous records	E
• Ability to prioritise own work in response to deadlines	E
• Ability to summarise complex data quickly	E
• Ability to write clearly and communicate well	E
• Experience in leading for preparation of research reports	E
• Experience in preparing or assisting in the preparation of research funding bids	D
• Ability to work as part of a team	E
• Flexible approach to working hours according to the requirements of the post	E

Please note that job descriptions cannot be exhaustive and the post-holder may be required to undertake other duties, which are broadly in line with the above key responsibilities.

Imperial College is committed to equality of opportunity and to eliminating discrimination. All employees are expected to follow the 7 Imperial Expectations detailed below:

1) Champion a positive approach to change and opportunity
2) Communicate regularly and effectively within and across teams
3) Consider the thoughts and expectations of others
4) Deliver positive outcomes
5) Encourage inclusive participation and eliminate discrimination
6) Support and develop staff to optimise talent
7) Work in a planned and managed way

Employees are also required to comply with all College policies and regulations paying special attention to:

- Confidentiality
- Conflict of Interest
- Data Protection
- Equal Opportunities

- Financial Regulations
- Health and Safety
- Information Technology
- Smoking

- Private Engagements and Register of Interests

They must also undertake specific training and assume responsibility for safety relevant to specific roles, as set out on the [College Website Health and Safety Structure and Responsibilities](#) page.

The College is a proud signatory to the San-Francisco Declaration on Research Assessment (DORA), which means that in hiring and promotion decisions, we evaluate applicants on the quality of their work, not the journal impact factor where it is published. For more information, see https://www.imperial.ac.uk/research-and-innovation/about-imperial-research/research-evaluation/

The College believes that the use of animals in research is vital to improve human and animal health and welfare. Animals may only be used in research programmes where their use is shown to be necessary for developing new treatments and making medical advances. Imperial is committed to ensuring that, in cases where this research is deemed essential, all animals in the College's care are treated with full respect, and that all staff involved with this work show due consideration at every level. http://www.imperial.ac.uk/research-and-innovation/about-imperial-research/research-integrity/animal-research/

Committed to equality and valuing diversity, we are an Athena SWAN Silver Award winner, a Stonewall Diversity Champion, a Disability Confident Employer and work in partnership with GIRES to promote respect for trans people.