Job Description

Research Fellow (3 posts)

UCL Department: UCL Queen Square Institute of Neurology
Research Department: Department of Clinical and Experimental Epilepsy

Grade: 7
Location: Chalfont Centre for Epilepsy, Chalfont St Peter, Bucks, SL9 0RJ

Reports to:
Line Manager: Principal Research Fellow
Principal Investigator: Professor Sanjay Sisodiya
Head of Research Department: Professor Ley Sander

Director- Prof. Mike Hanna
HoD- Prof. Ley Sander
Pl- Prof. Sanjay Sisodiya
Principal Research Fellow
Research Fellows

Context
The UCL Queen Square Institute of Neurology (ION) in Queen Square was established in 1950, merged with UCL in 1997, and is a key component of the Faculty of Brain Sciences (FBS), School of Life and Medical Sciences (SLMS), at UCL. The Institute has eight academic research Departments (https://www.ucl.ac.uk/ion/research/research-departments), which encompass clinical and basic research within each theme. In parallel, there are currently six Divisions representing clinical professional affiliations.

The mission is to translate neuroscience discovery research into treatments for patients with neurological diseases.

In addition, a number of important research centres are based at the ION, affiliated with one of our academic research departments: https://www.ucl.ac.uk/ion/research/research-centres

The UCL Queen Square Institute of Neurology has a significant postgraduate teaching and training portfolio, with nearly 500 graduate students at Queen Square. The Institute employs just over 710 staff, and hosts just under 300 honorary & visiting staff, spread over a complex and large estate comprising of over 15 buildings. Our annual turnover is £80million.

The Institute is closely associated in its work with the National Hospital for Neurology & Neurosurgery (NHNN), University College London Hospitals' NHS Foundation Trust, and in combination they form a national and international centre at Queen Square for teaching, training and research in neurology and allied clinical and basic neurosciences. The Institute also has active collaborative research programmes with other centres of excellence and works in close partnership with them: http://www.ucl.ac.uk/ion/about/related

Research Excellence
A large proportion of the Institute's funding is obtained from the Higher Education Funding Council for England. The most recent research assessment exercise, REF2014, showed that the IoN, as part of the FBS, is the first rated UK institution for neuroscience research output.

The Institute currently holds 578 active research projects, totalling £262m, for research from the principal medical charities concerned with neurological diseases, and from government agencies such as the Medical Research Council. Generous support for research is also provided through grant awards from the Brain Research Trust and we also receive significant philanthropic support.

UCL Neuroscience is currently rated second in the world by ISI Essential Science Indicators, and four of the top twelve most highly cited authors working worldwide in neuroscience and behaviour are based at the ION. In
the calendar year 2017, Institute staff published 1062 papers; 33 were published in the top 50 of all scientific journals (ranked by ISI impact factors), including Nature, Science, Lancet, BMJ and New England Journal of Medicine. RAND report shows that UCL has the highest share of highly cited publications in Neurology in England: http://www.rand.org/pubs/research_reports/RR1363.html

There are 80 Professors including 10 Fellows of the Royal Society, 25 Fellows of the Academy of Medical Sciences and one Nobel Prize winner at Queen Square.

The headquarters of the new UK Dementia Research Institute (UK DRI), led by Professor Bart De Strooper are based at UCL, embedded within the UCL Queen Square Institute of Neurology (ION), as an autonomous academic research department. The UK DRI is a joint £250 million investment from the Medical Research Council, Alzheimer’s Society and Alzheimer’s Research UK. The headquarters of the DRI is at University College London, with additional research centres at the University of Cambridge, Cardiff University, Edinburgh University, Imperial College London and King’s College London. You can read more about the DRI at www.ukdri.ac.uk

Teaching excellence
The UCL Queen Square Institute of Neurology has a significant postgraduate teaching and training portfolio, with over 500 graduate students (over 250 PhD students) at Queen Square, and taught MSc/MRes courses in: Advanced Neuroimaging; Brain and Mind Sciences (an innovative two year, two centre programme); Clinical Neuroscience; Clinical Neurology; Neuromuscular Disease; Stroke Medicine, Dementia and Translational Neurology. A new distance-learning Diploma in Clinical Neurology was launched in Autumn 2011. Excellent graduate students of the highest quality are recruited to both ION and UCL-wide PhD programmes, including the LWENC 4-year PhD programme and the Wellcome 4-year PhD in Neuroscience, which are supported through Research Council, charity and industry funded studentships. Institute staff contribute to undergraduate teaching of Clinical Neurology for the UCL Medical School, host an Elective programme for final year medical students and participate in the organisation of several CPD courses: http://www.ucl.ac.uk/ion/education

Equality, Diversity & Inclusion
The Institute prides itself for operating in an all-inclusive environment. Teamwork is highly valued, individual strengths are recognised and celebrated, and there is a commitment to advancing the careers of everyone, regardless of gender or role. We aim to provide a family friendly environment where both women and men feel able to take the time they need for family. The Athena SWAN Charter recognises commitment to advancing women’s careers in science, technology, engineering, maths and medicine (STEMM) employment in academia. ION is delighted to have received an Athena Swan Silver Award in October 2015. Mentoring is a crucial part of supporting career progression. While UCL has an online mentoring scheme called u-mentor, we have added a specific mentoring scheme for female academics at the ION. Currently we have 27 mentors who have been trained by an external mentoring expert. At the Institute we uphold the UCL-wide “Dignity At Work” policy, which, together with support available, protects staff and students from unacceptable behaviour. As an Institute we have pledged to Zero Tolerance: https://www.ucl.ac.uk/ion/working-institute/dignity-work and actively support Wellbeing@UCL: the five year wellbeing strategy for the whole UCL community, supported by our Wellbeing Champions.

Environmental sustainability
The Institute is committed to operating within an environmentally sustainable environment, through the implementation of the UCL Sustainability policy at Departmental level. For more information, please visit our webpage at: http://www.ucl.ac.uk/ion/green-awareness/

For more information on our initiatives: https://www.ucl.ac.uk/ion/working-institute

The Research Department
The mission of the Department of Clinical and Experimental Epilepsy is to transform the lives of people living with epilepsy for the better by identifying, understanding and correcting or preventing the underlying mechanisms leading to the epilepsies and associated comorbidities in each individual person. Our vision is to build upon the excellence and breadth of our research, seamlessly integrating basic and clinical science. The main Departmental research themes are basic research in neurophysiology, imaging, neurogenetics, neuropharmacology and neuropathology, translational research using animal models of epilepsy, human tissue and in-vivo data from cohorts of patients with specific epilepsy syndromes and clinical research centered on epidemiology, health service, comorbidities, genetics, neuroimaging, neurophysiology, neuropsychiatry, neuropsychology, neuropathology, epilepsy surgery and clinical trials.

Main purpose of the job
An exciting opportunity has arisen for three Research Fellows to work on genomics in the epilepsies as part of a translational genomics programme under the supervision of Professor Sanjay Sisodiya. The appointees will be part of a growing ground-breaking genomics programme, which will use a large genomic dataset with very detailed phenotypes in order to realise
Duties

The posts are based at the well-known Chalfont Centre for Epilepsy with translational research facilities and onsite laboratories. The main purpose of the posts is to advance understanding of the epilepsies through detailed clinical, investigational and genomic evaluation in a large cohort of people with well-characterised epilepsies. The post holders will be responsible for the statistical analysis and the scientific interpretation of data and will provide bioinformatics advice and support to other group members from different disciplines (and in return, will receive advice from other disciplines).

The post holders will carry out a range of activities, amongst which will be research on genomic, clinical and other data in epilepsy, provision of laboratory-based scientific support, and close collaboration in research projects aiming for clinical application across the group, and through collaborative external projects, such as with Genomics England Ltd (100,000 Genomes project) and other national and international initiatives. An important strand of the group’s research is to develop formal quantitative multimodal analyses, for example as used in recent work (https://www.biorxiv.org/content/10.1101/470518v1).

Duties and responsibilities:

1. Main duties:
   - Contribute to a range of projects within the group’s overall programme of work.
   - To enter data into relevant databases, and prepare cohorts for in-house and external collaborative studies.
   - Carry out data harmonization, processing and integration, analysis, presentation and interpretation of bioinformatic data.
   - Analyse genomic datasets including: array CGH, genotypic, whole exome sequencing, whole genome sequencing, and possibly RNA sequencing, methylation and expression data.
   - Maintaining high-quality standards for current algorithms for mapping, assembling and analysing, and ensuring accurate results, of assembly and bioinformatics pipelines.
   - Provide support to the on-going upgrading of a scalable platform for storing and exchanging clinical and genetic data.
   - Be responsible for the maintenance of novel bioinformatics algorithms and the existing code base, in order to address clinically relevant questions from WGS data.
   - Evaluate new software packages for analysis, annotation and data interpretation, and establish new, state-of-the-art in-house analysis pipelines.
   - Participate in organising and managing large datasets, including the organisation of data storage and repository solutions that meet current publishing standards.
   - Write up research findings for dissemination amongst the research team and broader international community.

2. Teaching and R&D:
   - Contributing to the department’s multidisciplinary research projects within the strategy.
   - Preparing and analysing data for publications in high profile international journals, for dissemination of research and for presentation at scientific meetings in the UK and overseas, and meetings with external collaborators.
   - Continuously review developments in projects and seek to acquire new knowledge and skills.

3. Professional and Quality Assurance:
   - Ensuring the highest standard of record keeping, maintaining accurate, complete, and up to date records.
   - Ensuring confidentiality is maintained as applicable.
   - Attending and contributing to Departmental, Institutional and other meetings as appropriate.
   - Acting at all times in accordance with the highest professional standards, and ensuring that these are maintained in the delivery of all aspects of research.
   - Adhering at all times to the policies, rules and regulations of the Department, Institute and UCL.
   - The post holder will actively follow UCL policies including Equal Opportunities and Information Governance policies.
   - The post holder has a responsibility to carry out their duties in a resource efficient way and actively support UCL’s Sustainability Strategy, policies and objectives within the remit of their role.
   - The post holder will maintain an awareness and observation of Fire and Health & Safety Regulations.

4. General
   - As duties and responsibilities change, the job description will be reviewed and amended in consultation with the post holder.
   - The post holder will carry out any other duties as are within the scope, spirit and purpose of the job as requested by the line manager.
# Person Specification

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<tr>
<th>Criteria</th>
<th>Essential or Desirable</th>
<th>Assessment method (Application/Interview)</th>
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<tr>
<td><strong>Qualifications, experience and knowledge</strong></td>
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<tr>
<td>PhD in Genetics, Statistics, Biostatistics, Epidemiology, Bioinformatics, Computer Science, Neurological Genetics or a closely related discipline</td>
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<td>A research record in journals within the areas of Statistical and/or Population Genetics, including at least one first-author publication based on the PhD project</td>
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<td>Master's degree in Genetics, Statistics, Biostatistics, Epidemiology, Bioinformatics, Biotechnology or related</td>
<td>D</td>
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<td>General Knowledge of Neurology, Epilepsy and/or Genetics</td>
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<td>Expert knowledge of working in a Linux server environment</td>
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<td>Experience in computational genomics and knowledge of pipelines for the analysis of next-generation sequencing data</td>
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<td>Hands-on, extended experience with scripting and/or programming for bioinformatics (Bash, C, C++, Python)</td>
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<td>Basic knowledge of R and cloud computing</td>
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<td>Practical knowledge of PLINK, GATK, ANNOVAR, VEP, Picard, and various NGS data handling tools (eg, BCFtools, SAMtools, VCFtools, FastQC, etc)</td>
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<td>Experience of handling public repositories such as ENCODE, ExAC, gnomAD, 1000 Genomes, DECIPHER, EVS, and other appropriate repositories</td>
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<td>Experience of dealing with large genome-wide datasets</td>
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<td>Experience of handling DNA and other samples, sample preparation and processing (e.g. for PCR, Sanger/NGS sequencing)</td>
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<td><strong>Skills and abilities</strong></td>
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<td>Willingness to learn new techniques</td>
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<td>Highly developed problem solving and reasoning skills</td>
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<td>Excellent oral and written communication skills</td>
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<td>Participating in the informal education and training of other staff, as necessary and appropriate</td>
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<td>Meticulous and accurate in all aspects of work</td>
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<td>Demonstrable ability to integrate datasets</td>
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<td>Personal attributes</td>
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<td>Good inter-personal skills with an ability to work co-operatively in a multidisciplinary setting</td>
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Apply

To apply for this position visit:

ucl.ac.uk/jobs

If you have any queries regarding the application process, please contact Miss E Bertram, HR Manager, UCL Queen Square Institute of Neurology (email: IoN.HRAdmin@ucl.ac.uk). Informal enquiries can be made to Professor Sanjay Sisodiya (email: s.sisodiya@ucl.ac.uk).

The posts are available from September 2019 and are funded from a grant from the Epilepsy Society for three years in the first instance. Posts will be offered subject to satisfactory references.

Salary
The posts are graded as Grade 7 with salary in the range £35,328 to £42,701 per annum (including London Allowance) based on experience. Progression through the salary scale is incremental. Cost of living pay awards are negotiated nationally and are normally effective from 1st August each year. Appointment at Grade 7 is dependent upon having been awarded a PhD; if this is not the case, initial appointment will be at research assistant Grade 6B (salary £30,922 - £32,607 per annum) with payment at Grade 7 being backdated to the date of final submission of the PhD thesis.

Probation
Appointments are subject to a probationary period of 9 months.

Hours of work
Full time 36.5 hours per week and times of work are as determined by the Head of Department.

Annual leave
Annual leave is 27 working days for a full time member of staff + 6 UCL closure days in addition to 8 Bank Holidays.

Pension
Appointments are superannuable under the Universities Superannuation Scheme (USS) or, subject to eligibility requirements, the National Health Service Pension Scheme (NHSPS). Further information about USS and the benefits can be found at www.uss.co.uk.

Other benefits
UCL is a dynamic, global university based in one of the most exciting capital cities in the world. Not only does working at UCL offer the opportunity to work with some of the greatest intellects in the world, it also offers competitive terms, conditions and benefits to its staff. In the 2013 UCL staff survey, 83% of staff would recommend UCL as a good place to work and 86% are proud to work for UCL.

As part of the UCL community you can access free lunch hour lectures, exhibitions and museums and collections. On campus UCL has the Bloomsbury theatre hosting a range of performances and a series of bars, cafes and other facilities, which UCL staff can use. Free on-site parking is available to staff based at Chalfont Centre for Epilepsy, Buckinghamshire.

In addition to 41 days annual leave (inclusive of public holidays and closure days) and generous pension schemes, UCL provides a number of other staff benefits which are linked from the page below:

✔️ https://www.ucl.ac.uk/human-resources/pay-benefits/staff-benefits

UCL benefits and policies apply equally, whatever the sexual orientation and/or gender identity of employees. Benefits and policies relating to employees partners, includes both different sex and same sex partners.