

Job Description

Research Fellow in Computational Psychiatry

Grade: 7

UCL Department: UCL Queen Square Institute of Neurology

Location: Russell Square House/On-site First

Research Department: Max Planck UCL Centre for Computational Psychiatry and Ageing Research (MPC), Department of Imaging Neuroscience

Reports to:

Director, Professor Mike Hanna

Head of Research Department, Professor Martina Callaghan

Director of MPC, Professor Ray Dolan

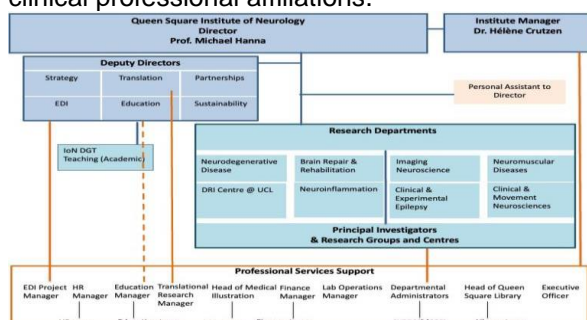
Deputy Director MPC, Professor Quentin Huys

Research Fellow

Line manager: Professor Quentin Huys

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) at UCL. The Institute has [eight academic research Departments](#), which encompass clinical and basic research within each theme. In parallel, there are currently six Divisions representing clinical professional affiliations.



Our mission is to translate neuroscience discovery research into treatments for patients with neurological diseases:

- *a leading translational neuroscience centre in the world translating discovery into experimental studies in patients to deliver new diagnostics and new therapies;*
- *an excellent student destination for educational programmes embedded in translational neuroscience research;*
- *overcome fragmentation as a centre for connecting industry, commercial partners, academics, and patients to accelerate translate research, internationally.*

In addition, a number of important [research centres](#) are based at the ION, affiliated with one of our academic research departments.

The UCL Queen Square Institute of Neurology has a significant teaching and training portfolio, with over 500 graduate students at Queen Square. The Institute employs just under 750 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 £95 million.

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.

Research Excellence

A large proportion of the Institute's funding is obtained from the Higher Education Funding Council for England. IoN was a major part of REF2021 Uo4 which showed that UCL is number one in the UK for research power in psychology, psychiatry and neuroscience.

The Institute currently holds 689 active research projects, totalling £315 million, for research from the principal medical charities concerned with neurological diseases, and from government agencies such as the Medical Research Council, and we also receive significant philanthropic support.

UCL Neuroscience is currently rated second in the world by ISI Essential Science Indicators. In the calendar year 2021, Institute staff published 2197 papers; 85 were published in the top 50 of all scientific journals (ranked by ISI impact factors), including Nature, Science, Lancet, BMJ and JAMA. [RAND report](#) shows that UCL has the highest share of highly cited publications in Neurology in England.

There are 143 Principal Investigators at IoN, including: 106 professors/professorial research associates and 26 emeritus professors; 12 Fellows of the Royal Society; 32 Fellows of the Academy of Medical Sciences; 1 Nobel Prize winner.

The Institute hosts the [UK DRI Centre at UCL](#), led by Professor Karen Duff, as one of its 8 research departments.

ION-DRI: A world-class centre of excellence in neuroscience

We are building a world-class environment to fight neurological disorders through the [IoN-DRI programme](#). A new landmark facility at 256 Grays Inn Road will support our existing facilities at Queen Square to create one of the leading translational neuroscience centres in the world. The facility on Grays Inn Road will house all of IoN's wet laboratories, while the Institute's existing space in Queen Square House will be the centre for research activities with a clinical focus. Approximately half of IoN's research scientists and staff – over 500 – will be housed in the new facility. The new building is due to open in summer 2024.

Teaching excellence

The QS ION has a significant [teaching and training portfolio](#), with over 500 graduate students (including over 250 PhD students) at Queen Square, and taught MSc/MRes courses in: Advanced Neuroimaging, Brain and Mind Sciences, Clinical Neuroscience, Neuromuscular Disease, Stroke, Clinical Neurology, Dementia: Causes, Treatments and Research (Neuroscience), Translational Neuroscience and Neurosurgery.

Excellent graduate students of the highest quality are recruited to both ION and UCL-wide MPhil/ PhD programmes, which are supported through Research Council, charity and industry funded studentships, and

the Wolfson/Eisai 4-year PhD programme, QS ION-Cleveland Clinic London Clinical PhD Programme, and the Pat Harris 4-year PhD Fellowship programme. QS ION staff contribute to undergraduate teaching at UCL and for the UCL Medical School, host an Elective programme for final year medical students and participate in the organisation of several CPD courses. The Institute also hosts an intercalated Bachelor of Science (iBSc) degree and will launch a cross-Faculty Bachelor of Science (BSc) in Human Neuroscience in September 2024.

Equality, Diversity & Inclusion

The Institute prides itself on operating in an [all-inclusive environment](#) irrespective of personal, physical, or social characteristics. Teamwork is highly valued, individual strengths are recognised and celebrated, and there is a commitment to advancing the careers of everyone, regardless of sex, gender identity, disability, age, sexual orientation, national origin, race, ethnicity, religion and belief, or social class (this list is not exhaustive).

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, which was reinstated in July 2020. We have reinforced our commitment to promoting equity and inclusion by signing up to an international declaration, which aims to provide fair and equal opportunities for underrepresented groups in Neurosciences. We stand by our commitment to positive action to improve equality and accessibility in the workplace. We will provide reasonable adjustments to enable people to work and flourish with us. Mentoring is a crucial part of supporting career progression. The Institute offers a range of mentoring schemes tailored to different staff and student groups to promote professional and personal development.

The Institute is proud to uphold both UCL's Dignity at Work and Work-Life Balance policies. As an Institute we commit to fostering a positive cultural climate where all staff and students can thrive and be their authentic selves, 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](#).

About the Max Planck UCL Centre for Computational Psychiatry and Ageing Research

The [Max Planck UCL Centre for Computational Psychiatry and Ageing Research](#) is dedicated to studying the causes of psychiatric disorders as well as

the causes of individual differences in cognitive development. The overarching goal of the MPC is to understand the cognitive and neural underpinnings of neuropsychiatric disorders. Computational models of differences and changes in brain-behaviour relations are the Centre's major theoretical tool. The Centre's findings will provide information on how cognitive functioning can be maintained into old age and on how psychiatric disorders can be better recognised and treated more efficiently.

The Centre was founded in April 2014 and is the result of an existing collaboration between the [Max Planck Society](#) and [University College London](#) that began in 2011. The Centre is headed by [Ray Dolan](#) (University College London) and [Ulman Lindenberger](#) (Max Planck Institute for Human Development) and is located in London and Berlin. The London site is at Russell Square, in close vicinity to the Wellcome Centre for Human Neuroimaging. The Berlin site is housed at the Max Planck Institute for Human Development.

Main purpose of the job

We are looking for a Research Fellow to join the Wellcome funded RELMED project aiming to understand which computational (reinforcement learning) mechanisms are engaged by different antidepressant treatments.

RELMED is a unique opportunity to contribute to fundamental research in the field of computational psychiatry. It will combine rigorous clinical trial and computational psychiatry methods and will involve two large-scale clinical trials in primary care, and as such is to date the largest-scale attempt at establishing a causal evidence-based regarding computational mechanisms of clinical treatments.

You will develop and analyse the reinforcement learning assessments. This will comprise both behavioural assessments and imaging (electroencephalography, EEG) measures combined with advanced, state-of-the-art computational modelling. You will work closely with the Chief Investigator, Professor Quentin Huys, who will provide line management and supervision, and with Co-Investigators including Professor Ray Dolan and other collaborators.

Other key working relationships will be with:

- The study co-applicants and Trial Management Team, including the site leads for the other sites (Bristol, Newcastle, Nottingham and Oxford).
- The wider team of collaborators, including researchers in the UK, Europe and the US.
- The wider computational psychiatry / reinforcement learning research community.
- Study researchers and administrators both at UCL and at other sites.
- The Priment Clinical Trials Unit Team supporting the study.
- The lived experience researchers and LEAP Group, which are coordinated by study co-applicants.

The RELMED study is currently in the setup phase. It consists of two randomized clinical trials to be run in sequence. The first trial will start mid-2024 to 2026. This will be followed by a second trial to be run from mid-2027 to mid-2029. Each of the two RCTs will involve randomization of 516 participants to one of three treatment arms and repeat behavioural neurocognitive and EEG testing.

The post is based at UCL but involve travel to study sites when required.

Offers of employment will be subject to a Disclosure and Barring Service (DBS) check.

The post is available immediately and is funded by Wellcome for two years in the first instance with the possibility of extension subject to successful funding renewal.

Duties and responsibilities

- Develop and validate behavioural and/or EEG tasks probing reinforcement learning processes engaged by antidepressant medications.
- Collaborate with the clinical trials and research fellow team in acquiring high-quality behavioural and EEG data.
- Support the CI in securing ethical and NHS approvals, including amendments to the protocol as required.
- Develop and validate computational models to measure reinforcement learning processes with behavioural and/or EEG measures.
- Analyse and interpret the data and relate it to clinical and experimental variables.
- Prepare datasets for sharing/open science.
- Conduct the research project above in collaboration with postdoctoral scientists, research assistants, and PhD students within the Centre.
- Maintain own continuing professional development, including participation in staff development and review procedures in accordance with UCL guidelines.
- Provide regular updates on the progress of the studies and assessments in meetings.
- Represent the Centre at meetings, and internal and external events as required.

Teaching, Research and Development

- Provision of teaching on topics related to the post holder's work as requested by the line manager.

- Contributing to the department's multidisciplinary research projects within the strategy.
- Preparing and analysing data for publications for dissemination of research and for presentation at international conferences as well as internal meetings at UCL, and meetings with external collaborators.

General Duties

- 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.
- Ensuring that duties are carried out in a resource efficient way, and actively support UCL's Sustainability Strategy, policies, and objectives.
- Follow and actively promote the UCL [Ways of Working](#).
- Adhering at all times to the policies, rules and regulations of the Department, Institute and UCL.

The above description is not exhaustive, and the post-holder will be required to undertake any other duties as may reasonably be requested within the scope, spirit, and purpose of the post. Job descriptions are reviewed on a regular basis including at the annual appraisal. As duties and responsibilities change, the job description may be amended in consultation with the post-holder.

The post-holder will be expected to actively follow all UCL policies and procedures including Equal Opportunities, maintain an awareness of Fire and Health & Safety Regulations, attend management meetings, and undertake such training and development as may be required for the post.

All staff are required to act professionally, co-operatively, and flexibly in line with the requirements of the post.

Person Specification

Note to job applicant: copy and paste the following criteria (which are assessed on the application form) into your “Statement in support of your application” and describe underneath each criteria how you meet it, giving examples. Desirable criteria will only be scored if there is a tie break for shortlisting.

Essential Criteria	Assessment method (Application form/ Interview / Practical Test)
Qualifications, experience and knowledge	
Have, or be close to obtaining, a PhD in computational neuroscience, psychology, cognitive neuroscience, or a related area (the degree must have been obtained by the agreed start date in post)	Application form
Experience of conducting research in neuroscience with a good publication record of high-quality research results	Application form/ Interview
Experience of developing EEG data experiments, including data collection and analysis, in the domain of decision making or reinforcement learning	Application form/ Interview
Experience of mathematical programming (e.g., Matlab, R, Python and Java)	Application form/ Interview
Skills and abilities	
Excellent oral and written communication skills	Application form/ Interview
Good interpersonal skills with an ability to work co-operatively in a multidisciplinary setting	Application form/ Interview
Resourceful and able to act on own initiative, with strong problem-solving skills	Application form/ Interview
Meticulous and accurate in all aspects of work	Application form/ Interview
Interested in research and a commitment to supporting high quality research	Application form/ Interview
A high level of consideration and care for research subjects	Application form/ Interview
Ability and willingness to work from an office base and travel to study sites as required	Application form/ Interview
Desirable Criteria	
Experience with computational modelling of behaviour (reinforcement learning and similar), including model-fitting and model-selection techniques	Application form/ Interview
Knowledge of decision neuroscience and reinforcement learning literature	Application form/ Interview
Proficiency in statistical methods (including Bayesian inference) and their computational implementation	Application form/ Interview
Knowledge of psychopathology and associated treatments	Application form/ Interview
Knowledge and understanding of dopamine and serotonin neurobiology	Application form/ Interview

Apply

To apply for this position visit:

ucl.ac.uk/jobs

Please complete the online application form and upload a recent CV and a supporting statement outlining your interest in joining the MPC and clearly addressing how you meet the selection criteria for the role as detailed in the person specification

If you have any queries regarding the application process, please contact IoN HR Team, UCL Queen Square Institute of Neurology, 23 Queen Square, London, WC1N 3BG (email: ion.hradmin@ucl.ac.uk).

For informal enquiries about the role please contact Professor Quentin Huys (email: q.huys@ucl.ac.uk).

The post is available immediately and is funded by Wellcome for two years in the first instance with the possibility of extension subject to successful funding renewal.

Salary

The post is graded as UCL Grade 7 with salary in the range £42,099–£50,585 per annum including London Allowance.

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 £37,332 - £39,980 per annum) with payment at Grade 7 being backdated to the date of final submission of the PhD thesis.

Probation

Appointments are subject to receipt of satisfactory references and a probationary period of 9 months.

Hours of work

Full time, 36.5 hours per week; times of work are as determined by the line manager or Director.

Hybrid working arrangements

The nature of this role requires you to spend most of your time working on-site (On-site First) and you are expected to spend at least 80% of your working hours on campus.

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).

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.

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.