

Research Fellow in Neuroscience

Gatsby Computational Neuroscience Unit & Sainsbury Wellcome Centre for Neural Circuits and Behaviour

Information for Candidates



Sainsbury Wellcome Centre for Neural Circuits and Behaviour at UCL

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Vacancy Reference:	1834542
Job Title:	Research Fellow in Neuroscience
Department:	Gatsby Computational Neuroscience Unit (GCNU) and Sainsbury Wellcome Centre for Neural Circuits and Behaviour (SWC)
Salary:	Competitive salary dependant on skills and experience
Grade:	7
Hours:	36.5 per week (full-time, 1.00 FTE)
Reports to:	Gatsby Unit and SWC Mentors

The Role of the Gatsby Unit/SWC Postdoctoral Research Fellow in Neuroscience

The Gatsby Unit and SWC have designed a unique Fellowship opportunity for innovative and creative researchers working at the interface of theory and experimental neuroscience, and who are seeking to build independence. The Gatsby Unit/SWC Postdoctoral Research Fellow in Neuroscience will design, develop and deliver a research project that bridges the gap between computational, theoretical and experimental neuroscience.

Fellows will have two mentors, one from the Gatsby Computational Neuroscience Unit faculty, and one from the Sainsbury Wellcome Centre (SWC) faculty, who will support the delivery of the project and provide computational resources and laboratory space. Financial support will be provided for research costs and consumables, and there will also be a travel budget for conference attendance. For a list of possible mentors you should visit the SWC and Gatsby webpages.

This role is funded for three years in the first instance, with the possibility of a further two years' of funding pending successful review of the project and its progress. There is also the possibility that more than one Fellow will be appointed during a recruitment round.

About the Gatsby Computational Neuroscience Unit

The Gatsby Computational Neuroscience Unit was created at UCL in July 1998 with funding from the Gatsby Charitable Foundation to be a world-class centre for theoretical neuroscience and machine learning. The Unit's core strengths are in computationally and probabilistically oriented theoretical neuroscience and in probabilistic and statistical machine learning. It has significant interests across a range of areas in theoretical neuroscience, including the interpretation of neural data, population coding, perceptual processing, neural dynamics, neuromodulation, and learning; as well as in machine learning and artificial intelligence. In neuroscience, we have contributed to the understanding of neural coding, dynamics and computation, to reinforcement and unsupervised learning, and to normative models of behaviour. As a high profile, international research centre, the Unit has in place extensive visitor, seminar and workshop programmes in order to promote cooperation within the broader academic community.

There are strong links to experimental neuroscience and cognitive science groups within SWC, as well as elsewhere in UCL, and at institutions around the world. Further details about the Gatsby Unit can be found at <http://www.gatsby.ucl.ac.uk/>

About the Sainsbury Wellcome Centre

The Sainsbury Wellcome Centre commenced research operations in Spring 2016 bringing together world-leading scientists to investigate how brain circuits process information to generate perception, form memories and guide behaviour. Developed through the vision and partnership of the Gatsby Charitable Foundation and Wellcome, and with substantial investment from these partners, the mission of the SWC is to generate and test experimentally tractable theories of brain function.

The Centre will comprise around 14 highly interdisciplinary experimental research groups accommodated in a new, purpose-designed building, offering an outstanding and unparalleled research environment. SWC scientists use a broad spectrum of the latest advances in molecular and cellular biology, imaging, electrophysiology and behavioural techniques and enjoy state-of-the-art research laboratories, cutting-edge scientific equipment, technologically-advanced prototyping and fabrication laboratories and custom in-house high-performance computing facilities. The full complement of scientists in the Centre is expected to reach around 150 together with circa 50 dedicated support staff.

Background, Mission and Research Environment

Neuroscience is entering a new and exciting period in which it will be possible to decipher the neural codes underlying perception, cognition and action. The Sainsbury Wellcome Centre for Neural Circuits and Behaviour is positioned at the heart of this development

The Centre, located within University College London (UCL) and close to its main campus in central London, fosters a culture of bold, innovative research and collaboration. Experimental groups benefit from interaction with the Gatsby Computational Neuroscience Unit located within the Centre, facilitating collaborations in data analysis, computational modelling and theory.

SWC staff interface closely with academic staff within the Faculties of Life Sciences and Brain Sciences and are part of the UCL Neuroscience Domain which brings together over 450 principal investigators and offers extensive opportunities for interaction and collaboration. The Centre offers additional opportunities for collaboration, networking and intellectual stimulation through its visitor programme, regular seminar series and the hosting of world-class scientific conferences and workshops.

The Centre provides extensive conceptual and methodological bridges between areas of existing neuroscience strength at UCL, from which it directly benefits. Existing work at UCL is closely interwoven via the cross-cutting themes of development, behaviour and plasticity, and with the creation and use of transgenic models. A strong culture of close interaction between experimental and theoretical approaches is a thread running through the Centre, tying together complex phenomena at different levels of description, by linking informational and computational concepts to their circuit and cellular counterparts, all in relation to model behaviours.

Further details about the Sainsbury Wellcome Centre can be found at www.ucl.ac.uk/swc.

Further details about UCL can be found at www.ucl.ac.uk.

Staff Benefits and Scientific and Administrative Support

The Centre and its staff are provided with significant administrative, technical and scientific support, including a Centre Manager responsible for overseeing local management of staff responsible for estates, health and safety, IT, finance, HR, research and student administration, and ensuring compliance with UCL policies and statutory requirements.

In addition, there are dedicated managers for the Centre's scientific support services, including for its state-of-the-art prototype and fabrication laboratories, animal facilities and high-end computing facilities, and on-site managers responsible for the building, its maintenance, facilities and services.

The SWC offers staff an award-winning work environment in the heart of Bloomsbury with an on-site brasserie, access to lockers and changing facilities, secure bicycle storage, and access to pleasant outdoor spaces. The Centre also offers the full range of UCL staff benefits, including a generous annual leave entitlement, occupational pension schemes, excellent family-friendly policies such as occupational shared parental pay, a work-life balance policy, and a range of financial benefits such as a season ticket loan scheme and staff discounts. Further information can be found online:

http://www.ucl.ac.uk/hr/benefits/employee_benefits.php.

Main Duties and Responsibilities

You will be responsible for the design, delivery and implementation of, and the dissemination of findings from, your proposed research project. You will ensure your project is interdisciplinary, and bridges computational theoretical and experimental neuroscience in its scope and aims. Your research will be highly collaborative, and you will work closely with your Gatsby Unit and SWC Mentors, as well as build effective working relationships with colleagues across the Gatsby Unit and SWC, and the wider UCL neuroscience community.

Core Duties

- Lead on your research project and ensure it is carried out efficiently and in a proper scientific manner.
- Design and implement elements of the project in collaboration with your Mentors and other lab staff.
- Liaise with external collaborators both in the UK and abroad and visit collaborators' labs.
- Attend Gatsby Unit/SWC internal and external seminars, conferences and workshops to share research outcomes, build interdisciplinary collaboration and promote mutual education.

Positively contribute in terms of citizenship activities to foster interdisciplinary collaboration and maximise the didactic potential of the Gatsby Unit/SWC, including helping to plan and organise seminars and workshops and interacting with external visitors.

- Write and contribute to the preparation of scientific manuscripts, reports, presentations and records of experimental plans and results.
- Gather and collate data and report on results via publications.
- Maintain lab equipment connected to the research to ensure it functions properly.
- Supervise and provide technical advice to more junior colleagues when appropriate in order to develop their skills where required.
- Communicate lab results within divisional meetings to keep colleagues informed of developments and progress of the project.
- Adhere to good laboratory practice at all times and observe all required health and safety procedures.
- Observe all ethical and legal requirements in relation to the use of animal models in research.
- Observe all required Data Protection and security requirements.

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.

Selection Criteria

The selection criteria outline the skills, knowledge and experience required in order to perform this role. Applicants will be selected based on how well they demonstrate that they meet the essential, and if appropriate, desirable criteria for this particular role.

	Essential	Desirable
Criteria		
A PhD in Neuroscience, computer science, physics, or a related field (or will have submitted your final thesis before the start date)	X	
An innovative research proposal that bridges computational/theoretical and systems/circuit/experimental neuroscience	X	
Independent research experience, with a strong track record of publications and completed research		X
Experience planning and delivering your own projects and project timelines	X	
A strong background in contemporary systems neuroscience methods and computational neuroscience theory	X	
Strong written and oral communication skills, with the ability to present complex information effectively	X	
Able to prioritise, manage your own time, and multi-task and integrate the demands of a range of different activities and deadlines in parallel	X	
Able to build strong collaborative working relationships with colleagues to deliver successful research outcomes.	X	
Accountable, reliable and resourceful	X	
Works ethically, legally and with integrity	X	
An understanding and appreciation of the mission and research environment of the Gatsby Unit and SWC, and a commitment to building the reputation of the Gatsby Unit and SWC as world-leading research centres	X	

Contact Us

If you have any queries relating to the vacancy or how to apply please contact Mike Sainsbury, Administration Manager, GCNU, m.sainsbury@ucl.ac.uk (0)20 3108 8012.

Applying for the Role

To begin the online application process, please access the advertisement by searching for it on the UCL vacancy search page (<http://www.ucl.ac.uk/hr/jobs/>) using the vacancy reference number, and click on the “Apply Now” button at the bottom of the vacancy advertisement.

Please complete the brief online application form, and upload the following supporting documents to your application:

- A current CV
- A research statement (maximum one and a half pages) with details of your past research achievements
- A high-level abstract (half a page long) about your proposed research, including potential mentors from the Gatsby Unit and SWC

The Gatsby Unit and SWC actively encourage diversity in recruitment. To support this, candidates will be longlisted on the basis of the quality and fit of their research proposal. Please ensure that your research proposal is anonymised before attaching it to your application.

Should you wish to do so, please include any career breaks in your CV that you wish to be taken into consideration (e.g. parental leave, caring responsibilities).

We will have an initial preliminary round. Those successful at the preliminary phase will subsequently be invited to work with their proposed mentors and submit a more detailed research proposal, which will be reviewed by an external review committee. We anticipate shortlisting will be completed within four weeks of the application deadline; all candidates will be notified of the outcome of their application.

Recruitment Schedule

Preliminary applications in the format outlined above must be submitted by **6th January 2020**. Shortlisted applicants will then be invited to submit a full research proposal by **31st January 2020**

Pre-employment Checks

Confirmation of appointment will be subject to receipt of satisfactory references, verification of proof of right to work in the UK and to satisfactory pre-employment health and security screening. The Centre will provide overseas candidates who may require sponsorship with support in seeking an appropriate visa.

Salary

Starting salary will be on the Grade 7 scale according to relevant skills, knowledge, experience and achievement. Staff incrementally progress along the salary scale; the effective date of incremental progression is 01 August each year. You must have completed the period of service stipulated in your contract of employment (typically your probationary period) to be eligible to increment. Incremental progression does not include the discretionary contribution points on the salary scale. Cost of living pay awards are negotiated nationally and are normally effective from 1 August each year.

Pension

Post-holders will be eligible to join the Universities Superannuation Scheme (USS), subject to the Scheme's rules and eligibility conditions.

Conditions of Service

Conditions of Service for Research, Teaching and Professional Services Staff can be found at: <https://www.ucl.ac.uk/human-resources/conditions-service-research-teaching-and-professional-services-staff>.

Probation

Appointments are subject to a probationary period of 9 months.

Hours of Work and Overtime

UCL's full time working week is 36.5 hours per week. GCNU & SWC are willing to consider flexible-working arrangements, subject to discussion and agreement with your line manager.

Pre-agreed overtime will be offered as equivalent time off in lieu.

Annual Leave

Staff are entitled to 27 days annual leave per year (pro rata for part-time staff). In addition, staff are entitled to 8 days public and statutory holidays, and around 6 UCL closure days with pay per year.

Location

The Sainsbury Wellcome Centre is located in the heart of London around five minutes' walk from the main UCL campus. The mainline railway stations at Euston, King's Cross, St Pancras, Marylebone and Paddington are within easy reach as are the London Underground stations located at Warren Street and Goudge Street.

Equal Opportunities

GCNU & SWC are committed to the promotion of equality, diversity and inclusion for its staff, students and visitors and is fully supportive of UCL's policy; the full equality policy statement is available online:

https://www.ucl.ac.uk/human-resources/sites/human-resources/files/equal_opportunity_policy_statement.pdf.

GCNU & SWC are currently jointly working towards an [Athena SWAN](#) award.

Background Information

The Gatsby Charitable Foundation (www.gatsby.org.uk)

Gatsby is a Trust set up by David Sainsbury to realise his charitable objectives.

We focus our support on a limited number of areas:

- Plant science research
- Neuroscience research
- Science and engineering education
- Economic development in Africa
- Public policy research and advice
- The Arts

We are proactive in devising projects to achieve our aims.

We are enthusiastic about supporting innovation.

We are analytical as we believe it is important to understand the opportunities and problems we tackle.

We take a long-term view as we do not think much can be achieved by short, one-off projects.

We are always eager to form partnerships with organisations who share our goals.

Gatsby Neuroscience

“Supporting world-class theoretical and experimental research on neural circuits and behaviour, and activities which further enhance our investments in this area.”

Gatsby's pioneering investment in neuroscience began in the 90s with the establishment of the Gatsby Computational Neuroscience Unit (GCNU) at UCL. A small number of research projects and meetings were supported across the UK over the following years until in 2007 the Trustees made the decision to expand Gatsby's efforts, specifically to link the GCNU with experimental neuroscience. For this new endeavour Gatsby has continued to be bold and innovative. In a funding partnership with Wellcome it has developed a new research institute, the Sainsbury Wellcome Centre (SWC) for Neural Circuits and Behaviour at UCL. As part of this new initiative the Foundation has invested in a number of innovative collaborative research programmes in the broad area of neural circuits and behaviour around the world. These programmes reflect the types of research we envision in the SWC and the people we support bring a wealth of expertise to help our thinking and development of the scientific focus.

Wellcome (www.wellcome.ac.uk)

Wellcome is the largest medical charity in the United Kingdom and presently, after the Bill and Melinda Gates Foundation, the second largest such charity in the world. It funds a wide variety of biomedical science, including research in developing countries, with its mission being to achieve extraordinary improvements in human and animal health. In pursuit of this the Trust supports the brightest minds in biomedical research and the medical humanities.

Wellcome funds a significant portfolio of neuroscience and mental health research - ranging from studies of molecular and cellular components to work on cognition and higher systems. It also has strong interests in applied clinical research on neurological and mental health disorders and support activities that explore historical, ethical, social and artistic perspectives on the mind and mental health. Current major investments include Wellcome Trust Centre for Neuroimaging at UCL, the Wellcome Trust Centre for Mitochondrial Research at Newcastle University, the Oxford Centre for Neural Circuits and Behaviour and the Behavioural and Clinical Neurosciences Institute at the University of Cambridge.

Wellcome has several grant schemes including Investigator Awards and numerous prestigious Fellowship schemes ranging from the most senior Principal Research Fellowships for world-class scientists through to the new Henry Wellcome Fellowship scheme for recent PhD graduates. These Awards and Fellowships are awarded competitively and judged by peer review through the Neuroscience Expert Review Groups.

The Neuroscience Environment at UCL

The UCL student community comprises 29,000 students from 150 countries. UCL currently offers 275 undergraduate programmes and more than 220 taught postgraduate programmes as well as the opportunity to carry out postgraduate research in all of its subjects.

In the 2014 Research Excellence Framework, which evaluates research performance in all UK universities, UCL was ranked the top higher education institution for research strength.

UCL is consistently rated among the top five universities in the UK (alongside Cambridge, Imperial College and Oxford) and in the top 25 universities in the world. The 2018 QS global rankings placed UCL seventh among the world's top ten universities.

UCL is a powerhouse in neuroscience, whether measured by published output, citations, grant income, or prizes and honours. UCL Neuroscience currently includes 26 Fellows of the Royal Society and 60 Fellows of the Academy of Medical Sciences. It has over 480 neuroscience PIs from some 30 academic departments and is ranked first in Europe (and second worldwide) for ISI citations in Neuroscience and Behaviour. UCL has an existing cadre of internationally competitive research groups in the fields of neural circuits and behaviour, and numerous strengths in related aspects of neuroscience, plus allied fields such as physics, chemistry and nanotechnology. UCL is the only institution in the UK – and one of the few in the world – with sufficient concentration and infrastructure in neuroscience and related disciplines to support the ambitious goals of the Sainsbury Wellcome Centre.

The environment at UCL will be further enhanced by the development of the Francis Crick Institute and its integration with UCL and other academic institutions including Imperial College and King's College.

UCL provides an environment of excellence for training future generations of interdisciplinary researchers in neuroscience. Graduate training programmes include; the 4-year Wellcome Neuroscience programme; two further related 4-year Wellcome programmes; the Gatsby Computational Neuroscience Unit's 4-year programme; the BBSRC London Interdisciplinary Biosciences PhD Consortium (a 4-year programme led by UCL) and the CoMPLEX PhD programme.

These surrounding strengths show UCL's capacity for bringing neuroscientists together with other biomedical scientists, plus mathematicians, physical scientists, computer scientists and engineers, to tackle the most challenging multidisciplinary problems. At the same time, UCL's unique clinical links via its major postgraduate institutes and partner hospitals facilitate eventual translation to new treatments for neural disorders.

Further details of UCL Neuroscience can be found at www.ucl.ac.uk/neuroscience

The UCL School of Life and Medical Sciences (SLMS) brings together four UCL Faculties to create one of the largest and most prestigious aggregations of academics in biomedical, life and population health sciences worldwide. The School has a global reputation for teaching, informed by cutting-edge research. A full profile of the School can be found at: <http://www.ucl.ac.uk/slms/about-us>. The School is structured into four Faculties: Brain Sciences; Life Sciences; Medical Sciences; and Population Health Sciences.

The School coordinates nine Research Domains (<http://www.ucl.ac.uk/slms/domains>), which are networks that bring together researchers regardless of their host Faculty. Colleagues engage with as many of the Domains as are relevant to their area of research activity, encouraging interdisciplinary across the School and beyond.

UCL Faculty of Life Sciences

GCNU and SWC are two of five areas that constitute the Faculty of Life Sciences (<http://www.ucl.ac.uk/lifesciences-faculty/>) the others being; the UCL School of Pharmacy, the MRC Laboratory for Molecular Cell Biology at UCL and the Division of Biosciences. . The Faculty has been associated with seven Nobel Laureates and continues to build on its existing strengths in cell and developmental biology, evolutionary and population genetics, cellular and circuits neuroscience, and structural and molecular biology. The merger with the School of Pharmacy in 2012 provided new opportunities in drug discovery; additionally the Faculty hosts joint appointments with the Francis Crick Institute.

The UCL Faculty of Brain Sciences (<https://www.ucl.ac.uk/brain-sciences/>) undertakes world-leading research and teaching in neurology and neural pathways, neuroscience, language, cognition, psychology and psychiatry. It takes an integrative approach to the study of mind and brain by focusing on the determinants of human perception, cognition, emotion and behaviour. The Faculty and its component parts create an outstanding and vibrant environment for study and research.

In order to make use of basic science discoveries, UCL works closely with major Hospital Trust partners to develop further its outstanding academic health science environment. UCL Partners is an academic health science partnership that brings together UCL with four of its NHS partner Trust organisations (Great Ormond Street Hospital for Children NHS Trust (GOSH); Moorfields Eye Hospital NHS Foundation Trust; Royal Free Hampstead NHS Trust; University College London Hospitals NHS Foundation Trust) in order to create Europe's leading health research powerhouse; see <http://www.uclpartners.com/>. The intention is to deliver real improvements in health for patients in London, and around the world. UCL Partners will support over 3,500 scientists, senior researchers and consultants, with a combined annual turnover of around £2 billion. By pooling resources and expertise, UCL Partners, which together treat over 1.5 million patients every year, is able to produce world-class research in key areas, each of which poses a major health challenge. These include the nervous system, children's health, heart disease, transplantation, immunology, ophthalmology, deafness and hearing impairment, dental and oral disease, cancer and women's health.

The Sainsbury Wellcome Centre for Neural Circuits and Behaviour is critical to the ambition of UCL to enhance its international leadership in neuroscience. It will deliver the conceptual and technological focus necessary for providing a causal account of how specific patterns of activity in neural circuits process information to direct behaviour to transform understanding of brain function.