



**Birkbeck**  
UNIVERSITY OF LONDON

# JOB DESCRIPTION AND PERSON SPECIFICATION

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# JOB DESCRIPTION

**Job title:** Research Assistant

**Reports to:** Dr Matilde Vaghi

**Responsible for:** NA

**Grade:** 6

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## PURPOSE OF THE JOB

This post is funded by an MRC Career Development Award entitled "Precision Psychiatry for Compulsivity" held by Dr Matilde Vaghi at Birkbeck, University of London.

The focus of the grant is to shift the focus from a between-person to a within person approach allowing for a detailed individual-level description of the neurocomputational mechanisms of psychiatric conditions, especially those on the compulsivity spectrum.

The aim is to bridge the gap between basic research and therapeutic approaches tailored to specific individuals. To this end we aim to test new theoretical hypothesis on the computational and neural mechanisms that underlie psychiatric conditions such as, Obsessive-Compulsive Disorder. We pursue experimental tests using a combination of decision-making experiments, behavioural modelling, brain imaging and pharmacological manipulation. A key methodological innovation of this project relates to the use of normative modelling and to establish dense sampling fMRI for patients' population.

The core feature of dense-sampling is to collect larger quantities of fMRI data in single individuals as opposed to smaller quantities of data averaged over groups. Dense-sampling in healthy volunteers has revealed a fine-grained characterization of neural circuits which traditional, non-dense scanning, fails to capture and that we aim to investigate in patients.

The post-holder will be a key member of Dr Vaghi's team and will gain substantial experience and training by working on cutting-edge human cognitive computational neuroscience. You will collaborate with other researchers in designing and conducting research into brain neuroimaging that is of an international standard, and that is carried out expertly and rigourously in accordance with ethical guidelines.

You will use MRI and computational techniques and will need to show some independence in conducting your work. You will help with ongoing projects (recruitment, data collection), participate actively in the lab (e.g., during lab meetings), and be part of a thriving community of researchers working in related subject areas.

The role will involve working closely with postdoctoral research associates and other team members to collect, curate and analyse human subjects' data, and ensure the efficient running of all aspects of the project. The post-holder will be based at the School of Psychological Sciences, Faculty of Science, Birkbeck University of London, Malet Street, London WC1E 7HX.

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## MAIN DUTIES

<b>Research and Experimental Design</b>
Assist with the design and programming of behavioral (in person and online) and neuroimaging experiments
Assist in the coordination of projects to ensure timely progress across all stages of research studies, from idea to publication
Assist with lab-based administration including managing web-based content and writing ethics applications (to test healthy volunteers and patients alike)
Prepare and analyse data and figures for dissemination of research and for presentation at international conferences as well as internal meetings at Birkbeck, and meetings with external collaborators
Write up empirical, theoretical and review articles for publication, either as lead author and/or in collaboration with others in the team
<b>Data Collection and Analysis</b>
For lab-based studies, co-ordinate communications and study visits with study participants, via email and telephone
Support neuroimaging sessions using fMRI with human participants
This involves preparation of FMRI sessions including setting up equipment and acquiring functional and structural brain scans using 3T neuroimaging available at UCL's BUCNI
For online studies, ensure best practice is followed to ensure high-quality behavioural and questionnaire data
Act as a first point of contact for all research and study-related queries, communicating clearly with study participants and collaborating sites, and maintaining a positive, helpful and professional approach at all times
Provide administrative support for the research study as required, and project support in conformance with ethical, research governance and data protection requirements
Ensure the strict confidentiality of all participant information and compliance with GDPR standards requirements
Perform quality control and image pre-processing of structural and functional MRI data requirements
Perform quality control and analysis of behavioural and psychophysics data requirements
Carry out statistical analysis of study data using MATLAB, R and/or Python including the use of packages for neuroimaging data analysis (e.g. SPM, FSL, Freesurfer) requirements
<b>Project Supervision and Support</b>
Assist Dr Vaghi and other team members in project management
Where required, lead and coordinate regular project team meetings
Keep up-to-date with current work in the field
<b>Professional and Quality Assurance</b>
Ensure the highest standard of record keeping, maintaining accurate, complete, and up to date records
Attend and actively contribute to Lab, Departmental, Divisional and other meetings as appropriate
Act at all times in accordance with the highest professional standards, and ensure that these are maintained in the delivery of all aspects of research
Adhere at all times to the policies, rules and regulations of the Department

Actively follow the College policies including Equal Opportunities and Information Governance policies.

*Please note that this job description reflects the core activities of the role and as the College and the post holder develops there will inevitably be changes in the emphasis of duties. It is expected that the post holder will recognise this and adopt a flexible approach to work and to participate in training.*

## WORKING RELATIONSHIPS AND CONTACTS

- Dr Vaghi
- Head of Department
- Birkbeck Procurement Team
- External suppliers
- Collaborators in other HEI

## GENERAL RESPONSIBILITIES – Universal to all Birkbeck roles

- To adhere to the College's Equal Opportunities policy in all activities, and to actively promote equality of opportunity wherever possible.
- To be responsible for your own health and safety and that of your colleagues, in accordance with the Health and Safety at Work Act (1974) and relevant EC directives.
- To work in accordance with Birkbeck's data protection policies, and relevant current data protection legislation.
- To undertake such other duties as may be reasonably expected.

# PERSON SPECIFICATION

**Candidates will be able to demonstrate the following:**

<b>KNOWLEDGE</b>	<b>E or D</b>
Knowledge about conducting online experiments	<b>E</b>
Knowledge of basic Neuroimaging and Cognitive Neuroscience	<b>D</b>
Knowledge about neuroimaging experiments and ability and willingness to rapidly acquire advanced neuroimaging skills to design and conduct research into human neuroimaging	<b>D</b>
<b>TECHNICAL AND/OR WORK-BASED SKILLS</b>	
Experience with programming with Python, JavaScript	<b>D</b>
Proficiency with programming, statistical data analysis, and data visualization in MATLAB R in the context of cognitive neuroscience	<b>E</b>
Experience of conducting high quality research in cognitive neuroscience	<b>E</b>
<b>GENERAL SKILLS AND ATTRIBUTES</b>	
Excellent problem solving abilities, both in practical settings (e.g., conducting experiments) and theoretical ones (e.g., programming challenges)	<b>E</b>
Excellent oral and written communication skills in English	<b>E</b>

Good inter-personal skills with an ability to work co-operatively in a multidisciplinary setting	<b>E</b>
Effective presentation skills	<b>E</b>
Self-organisation and administration skills	<b>E</b>
Commitment to working with diversity	<b>E</b>
Ability to work well with patients in research conditions	<b>E</b>
Experience of working in a multi-disciplinary team	<b>D</b>
<b>EXPERIENCE</b>	
Prior Experience with human neuroimaging techniques such as fMRI	<b>D</b>
Prior experience working with human participants in an experimental or clinical setting, including recruitment, running experiments, and administrative aspects like reimbursement	<b>E</b>
Proven analytical and problem-solving capability	<b>E</b>
Able to set priorities and work under pressure	<b>E</b>
Knowledge of relevant Health and Safety regulations	<b>D</b>
<b>QUALIFICATIONS</b>	
First-class honours degree and/or Masters in computational/cognitive neuroscience, cognitive science, engineering, experimental psychology or related discipline	<b>E</b>

*E = Essential / D = Desirable*

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# FURTHER INFORMATION

**Salary:**

£37,143 starting salary rising to £42,365 per annum.

The salary, as shown above, is for this full-time post and is Grade 6 on the College's London pay scale, which includes a consolidated weighting/allowance, which applies only to staff whose normal contractual place of work is in the Greater London area.

**Hours:**

35 hours per week (1 FTE)

**Working pattern:**

To be confirmed

**Probation period:**

6 months

**Duration of post:**

The post is available from 1 October 2024 for 12 months in the first instance.

**Reason for fixed-term contract:**

The appointment is paid for by external funds and this money is only available for the period stated (subject to extension if there is a consequent extension of funds).

## HOW TO APPLY

**Closing date:**

11.59 PM on 16 July 2024.

**Interview arrangements:**

Interview date: 25 July 2025

The selection process will involve:

- A 30 minute panel interview that will include a short practical test to assess skills in the use of programming language such as Python, Matlab or R
- 10 minute presentation on how previous skills and experience are relevant to this role.

**Start date:**

The post is available from 1 October 2024

To apply for this position please go to our online [recruitment portal](#).

Please ensure your application includes full details of your employment history, education and qualifications, and recent development. For some roles, this will be collected in the application form, for others you will be asked to include this in a professional CV, which can be uploaded.

Further information about the scientific aspects of the position can be obtained by contacting Matilde Vaghi at [m.vaghi@bbk.ac.uk](mailto:m.vaghi@bbk.ac.uk)

Further information about the Vaghi lab is available at <https://www.vaghilab.org/>

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## **RIGHT TO WORK IN THE UK**

This post is not eligible for sponsorship. Successful applicants will need to demonstrate their right to work in the UK via another means.

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## **HELP AND ASSISTANCE**

If you are having difficulties accessing the recruitment portal, please email [jobs@bbk.ac.uk](mailto:jobs@bbk.ac.uk).

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## **OUR COMMITMENT TO EQUALITY AND DIVERSITY**

The College is committed to providing the highest quality academic and working environment where all staff, students, visitors and contractors are welcomed respected and treated in a fair, consistent and non-discriminatory manner. The College is proud of its diversity and welcomes applications from all sections of the community. No one will be treated unfairly because of their sex, race, disability, sexual orientation, age, religion or belief, carer status, political belief, pregnancy/maternity, social class, gender identity or marital/civil partnership.

Birkbeck is a member of the 'positive about disability' Disability Confident scheme and will interview all candidates who both declare a disability within the meaning of the Equality Act 2010 and meet the minimum essential criteria for the post, subject to any limits on the overall number of interviews.

Birkbeck is a member of Advance HE, holds an institutional Bronze level Athena SWAN award, is a Mindful Employers Charter signatory and subscribes to Stonewall's Diversity Champions.