About King’s

Please see the link below for supporting information for prospective applicants. This also includes some background information about the university including rankings, research outputs, King’s Health Partner Trusts and our current fundraising initiative. [www.kcl.ac.uk/aboutkings](http://www.kcl.ac.uk/aboutkings)

Job description

<table>
<thead>
<tr>
<th>Post title</th>
<th>Research Associate: Neurodevelopment and Mental Health</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department/Division</td>
<td>Department of Perinatal Imaging and Health/School of Biomedical Engineering and Imaging Sciences</td>
</tr>
<tr>
<td>Faculty</td>
<td>FoLSM</td>
</tr>
<tr>
<td>Grade/salary</td>
<td>Grade 6, £38,304 to £45,026 per annum, inclusive of £3,500 per annum London Allowance.</td>
</tr>
<tr>
<td>Hours of work</td>
<td>Full time (35 hours per week)</td>
</tr>
<tr>
<td>Period of appointment</td>
<td>Fixed-term contract for 2 years</td>
</tr>
<tr>
<td>Responsible to</td>
<td>Professor Chiara Nosarti (Head of Psychology and Outcome Studies) and the overall supervision of Prof. David Edwards (Head of Department)</td>
</tr>
<tr>
<td>Responsible for</td>
<td>N/A</td>
</tr>
<tr>
<td>Campus</td>
<td>St Thomas' Hospital and IoPPN</td>
</tr>
</tbody>
</table>

**Role purpose**

The successful candidate will play a key role in analysing data from a longitudinal cohort of children who were born very preterm.

Working closely with Lead Investigators, the successful candidate will contribute to the timely completion of the research programme. We are seeking to appoint a neuroimaging data scientist/engineer to develop and apply state of the art machine learning methods to analyse multimodal longitudinal imaging data collected from birth to mid-childhood, in order to identify the brain-behavioural characteristics of children who are at risk of developing mental health disorders.

The successful candidate will play a key role in analysing longitudinally collected brain imaging data. He/she will work on integrating cognitive, behavioural and psycho-social outcomes data and a range of imaging modalities to detect, characterise, and ultimately predict the emergence of mental health problems. These data will be used to develop predictive models of child outcome in relation to early detection, disease status, and prognosis.
The role will include carrying out assessments of the study participants, working closely with research psychologists, research nurses and clinical and academic staff, who are directly integrated within the School of Biomedical Engineering and Imaging Sciences and the Department of Child and Adolescence Psychiatry at King’s College London. The successful candidate will possess excellent software development skills. In addition, the role provides the opportunity for research that develops novel multi-modal methodologies for understanding the developing brain. The successful candidate will be encouraged to develop their own research interests.

The study is supported by the Medical Research Council and aims to investigate the biological mechanisms associated with the risk of developing psychopathology in premature children. A second research goal is to explore whether information about brain development and peripheral inflammation acquired around the time of birth could be used to identify early in life those premature children who are at greater risk of developing psychopathology.

The post holder will provide support under the direction of the Head of Psychology and Outcome Studies and the Head of Department.

The role will be based at King’s College London, the post-holder will divide his/her time between the Centre for the Developing Brain, St Thomas’ Hospital, and the Department of Child and Adolescent Psychiatry, Institute of Psychiatry, Psychology and Neuroscience.

**Role profile**

The successful applicant will be responsible for developing and integrating tools for behavioural and imaging data analysis and reporting, including imaging and statistical modelling for analysing outcomes in relation to imaging biomarkers for mental health problems.

The applicant is expected to use and work with scripts as part of their activities.

The applicant should ideally have some knowledge and experience of:

1. Machine learning
2. Data science
3. Statistical modelling
4. Database programming

The position would appeal to a candidate with strong software development skills, including:

1. Machine learning packages (PRONTO, pytorch,...)
2. Multimodal imaging approaches (FLICA, Similarity Network Fusion)
3. Statistical modelling packages (R, Stata, ...)

Experience using software libraries for ML is an advantage but not essential. An interest in human brain development imaging is important, but previous experience is not essential.

Strong communication skills are required to work with other imaging scientist staff and researchers from other disciplines, such as psychologists and paediatricians.

A strongly independent applicant is required who will need to work well with inter-disciplinary teams.
About the Faculty

The Faculty of Life Sciences & Medicine is one of the largest and most successful centres for research and education in the UK. Please see the link below for more information.

[http://www.kcl.ac.uk/lsm/index.aspx](http://www.kcl.ac.uk/lsm/index.aspx)

About the School of Biomedical Engineering and Imaging Sciences

The School of Biomedical Engineering and Imaging Sciences is a cutting-edge research and teaching school dedicated to the development, clinical translation and clinical application of medical imaging and computational modelling technologies.

Our objective is to facilitate research and teaching guided by clinical questions and is aimed at novelty, understanding of physiology and pathophysiology as well as development of new diagnostic tools and therapies. In this way, basic science can be rapidly translated into clinical applications (and vice versa). Please see the link below for more information.

[https://www.kcl.ac.uk/lsm/research/divisions/imaging/biomedical-engineering-and-imaging-sciences-index.aspx](https://www.kcl.ac.uk/lsm/research/divisions/imaging/biomedical-engineering-and-imaging-sciences-index.aspx)

About the Department of Perinatal Imaging & Health

Both the Department of Perinatal Imaging and Health and Centre for the Developing Brain are focussed on understanding the causes and consequences of damage to the immature brain, and devising strategies to reduce the level of neurodevelopmental impairment initiated in the perinatal period.

Using experimental laboratory methods and magnetic resonance imaging (MRI) techniques, the team integrates data from fetal, early postnatal and post-mortem scanning with information on neurological function as the children develop, and has developed a pipeline for the discovery and trial of novel neuroprotective therapies that integrates laboratory work with early and late phase trials. There is a strong emphasis on neuroinformatics and bioinformatics and development of novel imaging strategies.

While previous research programmes have emphasised prematurity and asphyxia brain injury, there is now an additional focus on Autistic Spectrum Disorder and other developmental and neurocognitive conditions. Current work includes the €15 million European Research Council funded Developing Human Connectome Project, the NIH funded Placenta Imaging Project (PIP), and iFIND (intelligent Fetal Imaging and Diagnosis) project with funding from the Wellcome Trust and EPSRC.
Person specification

Eligibility to work in the United Kingdom
Applications are welcomed from international candidates. The recruitment of this post meets Home Office advertising requirements that qualify the role for sponsorship under Tier 2. Consequently, if required, the university could potentially sponsor the successful candidate in applying for a visa under Tier 2 of the points based immigration system, providing all other requirements are met.
Information on Tier 2 sponsorship can be found on the UK Visas and Immigration website: www.gov.uk/tier-2-general/overview

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Essential</th>
<th>Desirable</th>
<th>How identified and assessed</th>
</tr>
</thead>
</table>

*For ‘How identified and assessed’ use: AP – application, AS – assessment, I – interview, P – presentation, R – references*

### Education / qualification and training

**PhD awarded in Neuroscience, Mathematics, Engineering or Computer Science or PhD in Neuroscience, Mathematics, Engineering or Computer Science near completion.**

Please note that this is a PhD level role but candidates who have submitted their thesis and are awaiting award of their PhDs will be considered. Should the successful candidate be awaiting the award of their PhD, the appointment will be made at Grade 5, spinal point 30 with the title of Research Assistant until confirmation of the award of the PhD has been received. Upon confirmation of the award of the PhD, the job title will become Research Associate and the salary will increase to Grade 6, spine point 31.

**Undergraduate or higher degree in neuroscience, psychology, engineering, applied maths or computer science**

### Knowledge / skills

**Higher language computer programming**

**General machine learning experience**

**MATLAB**

**Python**

**Scientific / Medical Writing**

### Experience

**Data analysis packages (R, SAS,...)**

**Machine learning libraries (PRONTO, pytorch,...)**
<table>
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<th>Desirable</th>
<th>How identified and assessed*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Practical experience of working in the research and academic environment</td>
<td>X</td>
<td></td>
<td>AP/I</td>
</tr>
<tr>
<td>Presentation and dissemination</td>
<td></td>
<td>X</td>
<td>AP/I</td>
</tr>
<tr>
<td>Previous experience supporting neuroimaging research using analysis software</td>
<td></td>
<td>X</td>
<td>AP/I</td>
</tr>
<tr>
<td><strong>Personal characteristics/other requirements</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Independent researcher</td>
<td>X</td>
<td></td>
<td>I/ AP</td>
</tr>
<tr>
<td>Interdisciplinary researcher</td>
<td>X</td>
<td></td>
<td>I/ AP</td>
</tr>
<tr>
<td>Interest in developmental imaging</td>
<td>X</td>
<td></td>
<td>I/ AP</td>
</tr>
<tr>
<td>Ability to work calmly under pressure</td>
<td>X</td>
<td></td>
<td>I/ AP</td>
</tr>
<tr>
<td>Ability to interact with colleagues, patients and research participants appropriately, remaining patient, tactful, diplomatic and professional at all times.</td>
<td>X</td>
<td></td>
<td>AP/I/R</td>
</tr>
<tr>
<td>Ability to act on initiative</td>
<td>X</td>
<td></td>
<td>AP/I</td>
</tr>
<tr>
<td><strong>Role specific requirements</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flexible attitude towards work; prepared to work during ad hoc evenings or weekends as required by the role</td>
<td>X</td>
<td></td>
<td>I</td>
</tr>
</tbody>
</table>
Disclosure and Barring Service Clearance (DBS formerly CRB)

This position is exempt from the Rehabilitation of Offenders Act (1974). As such, shortlisted candidates will be required to declare full details of any criminal background, regardless of whether the conviction is spent, and the university will be required to apply for an enhanced disclosure (a criminal records check) from the Disclosure & Barring Service in relation to the successful candidate.

Level of DBS Clearance required - indicate all applicable aspects:

<table>
<thead>
<tr>
<th>Carrying out regulated activities¹:</th>
<th>No</th>
<th>No Regulated Activity but contact with vulnerable groups²:</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Regulated Activity but deemed a position of trust³:</td>
<td>Yes</td>
<td>Situated in a Regulated Environment i.e. NHS premises⁴:</td>
<td>Yes</td>
</tr>
</tbody>
</table>

1. The scope of Regulated Activity for work with children and young people is defined under the age of 18 years old. An adult is not considered to be vulnerable due to any personal characteristic; however, an adult may be regarded as vulnerable due to particular circumstances at a particular time, for example when they are receiving treatment in a hospital.
2. Contact with vulnerable groups must meet the frequency threshold of 4 days in a 30 day period.
3. A position of trust is any post that requires authorisation for restricted access to confidential data (not including anonymised patient data), premises or currency.
4. KCL buildings do not qualify as regulated environments and only our partner NHS Trust sites qualify as regulated environments.

Further information about the Disclosure scheme can be found at: www.gov.uk/dbs

A criminal record will only be taken into account for recruitment purposes, where the conviction is relevant to the position being applied for, and whether this is the case, will not necessarily bar candidates from employment. Any decision will depend on the precise nature of the work, the circumstances and background to the offence(s). The same procedure will be followed for university staff applying internally for a vacancy.

Occupational Health Clearance

(OH required for the post) This appointment is subject to Occupational Health clearance. The successful applicant will be sent an Occupational Health Questionnaire along with their contract of employment. When the Occupational Health Department at King’s College Hospital have evaluated the questionnaire and declared that they are fit for appointment, your appointment start date will be formally confirmed.

(OH not required for the post) As part of our pre-employment checks the successful applicant will be sent a ‘Health and Capability Declaration Form’ and if they declare that they do have a health condition or disability that may require accommodation measures so that they are able to carry out their work comfortably and efficiently, they will be sent an Occupational Health Questionnaire to determine whether any reasonable accommodation measures are required for the candidate to take up the post.

Specific aspects - indicate frequency D (daily), W (weekly), M (monthly) where applicable:

<table>
<thead>
<tr>
<th>Intensive Display Screen Equipment work (e.g. data entry or digital microscopy)¹:</th>
<th>D</th>
<th>Direct patient contact involving exposure prone procedures (EPP)²:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heavy manual handling¹:</td>
<td></td>
<td>Direct patient contact, no EPP²</td>
</tr>
<tr>
<td>Highly repetitive tasks (e.g. pipetting or re-shelving books)¹:</td>
<td></td>
<td>Work with patient specimens (e.g. blood or tissue samples)²:</td>
</tr>
<tr>
<td>Shift work, night work or call-out duties²:</td>
<td></td>
<td>Work with GM organisms or biological agents that may pose a hazard to human health²:</td>
</tr>
<tr>
<td>Work involving risk of exposure to environmental or human pathogens (e.g. in waste streams or soils)²</td>
<td></td>
<td>Hazards which require health surveillance e.g. respiratory sensitisers (allergens, substances with risk phrase R42, wood dust etc.) or loud noise²</td>
</tr>
<tr>
<td>Driving vehicles on university business²:</td>
<td></td>
<td>Food handling or preparation²:</td>
</tr>
<tr>
<td>Work at height (e.g. ladders, scaffolds etc.)</td>
<td>Work in confined spaces (e.g. sump rooms, etc.)</td>
<td></td>
</tr>
<tr>
<td>---------------------------------------------</td>
<td>-----------------------------------------------</td>
<td></td>
</tr>
</tbody>
</table>

1. These hazards do not require health assessment but may require advice from OH if a successful candidate declares a disability or health condition in the Health & Capability Declaration.
2. These hazards automatically require the successful candidate to undergo employment health assessment to identify any necessary health surveillance, recommended vaccinations or other risk control measures. The Occupational Health option must be checked on the SRAF or the Employment Checks page in the e-Recruitment system.

**Equal opportunities**

King’s College London recognises that equality of opportunity and the recognition and promotion of diversity are integral to its academic and economic strengths. The following principles apply in respect of the university’s commitment to equality and diversity:

- To provide and promote equality of opportunity in all areas of its work and activity;
- To recognise and develop the diversity of skills and talent within its current and potential community;
- To ensure that all university members and prospective members are treated solely on the basis of their merits, abilities and potential without receiving any unjustified discrimination or unfavourable treatment on grounds such as age, disability, marital status, pregnancy or maternity, race, religion or belief, sex, sexual orientation, trans status, socio-economic status or any other irrelevant distinction;
- To provide and promote a positive working, learning, and social environment which is free from prejudice, discrimination and any forms of harassment, bullying or victimisation;
- To foster good relations between individuals from different groups and tackle prejudice and promote understanding.

King’s has been a member of the Athena SWAN Charter since 2007 and first gained its Bronze institutional award in 2008. Our award was successfully renewed in 2016 for a further four years. The Athena SWAN agenda forms part of a wider suite of diversity and inclusion work streams. Working with the Charter is helping King’s to identify best practice for the working environment of all staff working in science disciplines.
Summary of Terms and Conditions of Service

Right to Work in the UK
King’s College London has a legal responsibility to ensure that you have the right to work in the UK before you can commence employment with the university. If you do not have the right to work in the UK already, any offer of employment we make to you will be subject to you obtaining permission to work in the UK before taking up the post.

Tier 2 Sponsorship
Applications are welcome from international candidates. However, this post does not meet Home Office requirements that would qualify it for a Certificate of Sponsorship and consequently the university would be unable to offer sponsorship for a visa under Tier 2 of the points based immigration system to anyone appointed to the post.

For details of alternative routes to obtaining permission to work in the UK please refer to the UK Visas and Immigration website: www.gov.uk/visas-immigration

Probation
6 months

Annual leave
27 working days per annum pro rata (please note the annual leave year runs from January-December) bank holidays and customary closure days in are in addition to the annual leave entitlement. Staff receive four additional customary closure days in December. Notification as to how these days are taken is circulated at the start of the academic year.

Superannuation
This appointment is superannuable the USS www.uss.co.uk pension scheme. In accordance with recent legislation, we automatically enrol our staff in a pension scheme if they meet certain age and earning criteria. This is known as auto-enrolment. The university collects pension contributions via a salary sacrifice method called PensionsPlus. These deductions are made before the calculation of tax and national insurance is calculated; therefore reducing the amount you pay.

Staff already superannuated under the NHS Superannuation Scheme may opt to remain in that scheme provided an application to do so is received by the NHS scheme trustees within three months of appointment to King’s College London. Please note that NHS Superannuation Scheme: Medical Schools are classed as “Direction Employers” and some benefits of the NHS Scheme are not available to Direction members.

Alternatively staff may opt to take out a personal pension. Please note that the university does not provide an employer’s contribution towards a private pension plan.

Staff benefits
King’s College London offers a wide range of staff benefits. For the full comprehensive list of staff benefits please refer to our website: www.kcl.ac.uk/hr/staffbenefits
Applying for the post

To apply, please register with the King’s College London application portal and complete your application online.
We will not accept curriculum vitae in isolation and you must complete the required application form for your application to be considered.

For an informal discussion or to find out more about the role please contact: Chiara Nosarti chiara.nosarti@kcl.ac.uk

Interview date scheduled for: TBC

Applicants with disabilities

King’s College London is keen to increase the number of disabled people it employs. We therefore encourage applications from individuals with a disability who are able to carry out the duties of the post. If you have special needs in relation to your application please contact the Recruitment Coordinator responsible for the administration of the post on recruitmentteam16@kcl.ac.uk

Response

All applications will be considered with respect to the criteria outlined in the person specification. We aim to contact you within four weeks of the closing date to inform you if you have been selected for interview. Due to the large number of applications we receive we are unfortunately not able to provide feedback at the shortlisting stage.