

## PhD Studentship in computational psychiatry

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| <b>Post Title:</b>                               | PhD Studentship  |
| <b>Post Status:</b>                              | 4 Year Fully-Funded PhD Studentship  |
| <b>Research Group /<br/>Department / School:</b> | Gillan Lab, Trinity College Dublin, the University of Dublin   |
| <b>Location:</b>                                 | Trinity College Institute of Neuroscience, Lloyd Building,<br>Trinity College Dublin, the University of Dublin<br>College Green, Dublin 2, Ireland |
| <b>Reports to:</b>                               | Dr Claire Gillan   |
| <b>Terms &amp; Conditions:</b>                   | €25,000 annual stipend   |
| <b>Hours of Work:</b>                            | 9 - 5.30pm   |
| <b>Closing Date:</b>                             | 12 Noon GMT, 21st December 2023  |

### Post Summary: PhD Studentship in computational psychiatry

The research laboratory of Dr. Claire Gillan ([www.gillanlab.com](http://www.gillanlab.com)) at Trinity College Dublin is seeking a PhD student to work on SFI-funded research focused on using **data science** to further our understanding of the continuum of **psychosis**.

Psychotic-like experiences (PLEs) refer to subthreshold forms of hallucinations and delusions, such as hearing voices or seeing things that are not there. PLEs are associated with risk for future mental health problems like schizophrenia or depression, but many people experience PLEs and never go on to have a serious mental disorder. It is currently unclear why this is, and there is limited data regarding how these experiences develop over time. This unfortunately hampers efforts to understand PLEs in the general population and find ways to intervene early and prevent transition to mental illness.

This project aims to address this by developing new smartphone-based digital tools to measure how PLEs evolve over time, studying fluctuations in their occurrence, duration and intensity, and mapping their neurocognitive correlates. In particular, the PhD student will work on developing digital markers of PLEs from passively generated smartphone data (e.g. inferring sleep changes from light sensor data, or changes in activity levels from GPS and accelerometer data) and validating these within and across persons based on regular and repeated self-report of PLEs. Finally, these methodologies will be used to develop machine learning models to predict worsening PLEs in both the near and medium-term.

The PhD will have the opportunity to work on several complementary methodologies, including repeated smartphone-based assessments ([www.neureka.ie](http://www.neureka.ie)), OPM-

Magnetoencephalography, machine learning, network and timeseries analysis. This position involves the design of novel experiments, their execution, analysis, write-up, and dissemination (publications, talks and posters).

The position is funded for **4 years, starting September 2024**. The student will join a team of PhD students, postdoctoral fellows, and app developers and will participate in regular lab meetings, learn about diverse methodologies in mental health science and can attend international conferences annually.

This project will be conducted in close collaboration with Professor Mary Cannon at the Royal College of Surgeons of Ireland (RCSI), who is also recruiting a PhD student to work in parallel on this project.

Below is a list of several qualities and qualifications of an ideal candidate for the position, but please know that no PhD candidate will have them all. Strength in one area can make up for less experience in another. Carefully consider your motivation for embarking on a PhD, the skills/experience that you think make you well suited to a career in science and why would be a good fit for our lab. **These points should form the basis of a cover letter expressing your interest in the role.**

### **Standard Duties and Responsibilities of the Post**

The PhD student will carry out an original body of research as part of the requirements for the PhD in Psychology at Trinity College. They will participate fully in lab life, attending regular meetings and collaborating with other lab members. They are expected to be a self-starter, eager to learn and enthusiastic about their area of study.

### **Funding Information**

This role is funded from a sub-project of the FutureNeuro centre grant from Science Foundation Ireland awarded to Dr Claire Gillan and Prof Mary Cannon.

### **Person Specification**

The PhD Studentship would be ideally suited to someone recently graduated from a psychology or computer science degree who is considering a future in academic or industry research. They will join a growing team of PhD students, postdoctoral fellows, and technical staff and will participate in regular lab meetings, learn about diverse methodologies in mental health science, help to design novel experiments, analyse datasets and present findings to the group.

The ideal candidate is a highly motivated person, that is passionate about research in brain health, cognitive neuroscience, data science, and their intersection. They must have outstanding written and verbal communication skills, be able to code and have some experience with advanced data analysis techniques.

### **Qualifications**

- A bachelor’s degree in psychology, computer science, neuroscience or a related field (Essential).

### Knowledge & Experience

- Experience conducting research with human subjects, as a research assistant or intern (Desirable)
- Experience presenting results of research in written and oral format (Desirable)

### Skills & Competencies

- Intermediate data analysis skills: python / R / Matlab etc (Essential)
- Outstanding written and verbal communication skills (Essential)
- Critical thinking / analytical skills (Essential)

### Attributes

- Excellent organisational skills and professionalism (Essential)
- Highly motivated and enthusiastic (Essential)
- Rigour, diligence, and respect for science (Essential)
- A collaborative nature, willingness to learn from others and to share knowledge (Essential)

### Application Procedure

Applicants should submit **(i) a detailed cover letter, (ii) a Curriculum Vitae** and **(iii) the names and contact details of 2 referees** (including email addresses). Please submit these materials via the following form: <https://forms.gle/DuMDqHCB4vhhDSyK7>.

Your CV should include grades and any other academic distinctions you think are relevant. Transcripts will be required to support this, should your application progress to the final stages (but are not necessary for initial application). It is important that the CV gets across the extent of your practical experience in research to date. Have you held any positions in research before? Have you interned or completed a dissertation project? If so, what were the projects that you completed and what were your specific responsibilities? Did you give presentations, write a report or paper, what competencies do you have (can you code? what software?), etc. The cover letter is perhaps the most important part of your application – please take the time to carefully outline your interests, your past experience, your goals for the future and why you are a good fit for this project and our lab, in particular.

Shortlisted candidates will be asked to submit a 2-page research proposal, details of which will be provided to successful candidates.

### Further Information for Applicants

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| URL Link to Area            | <a href="https://www.tcd.ie/Neuroscience/">https://www.tcd.ie/Neuroscience/</a> |
| URL link to Group Website   | <a href="http://www.gillanlab.ie">www.gillanlab.ie</a>                          |
| URL Link to Human Resources | <a href="https://www.tcd.ie/hr/">https://www.tcd.ie/hr/</a>                     |

## **Trinity College Dublin, the University of Dublin**

Trinity is Ireland's leading university and is ranked 108th in the world (QS World University Rankings 2020). Founded in 1592, the University is steeped in history with a reputation for excellence in education, research and innovation.

Located on an iconic campus in the heart of Dublin's city centre, Trinity has 18,000 undergraduate and postgraduate students across our three faculties – Arts, Humanities, and Social Sciences; Engineering, Mathematics and Science; and Health Sciences.

Trinity is ranked as the 17th most international university in the world (Times Higher Education Rankings 2020) and has students and staff from over 120 countries.

The pursuit of excellence through research and scholarship is at the heart of a Trinity education, and our researchers have an outstanding publication record and strong record of grant success. Trinity has developed 19 broad-based multidisciplinary research themes that cut across disciplines and facilitate world-leading research and collaboration within the University and with colleagues around the world. Trinity is also home to 5 leading flagship research institutes:

- Trinity Biomedical Sciences Institute (TBSI)
- Trinity College Institute of Neuroscience (TCIN)
- Trinity Translational Medical Institute (TTMI)
- Trinity Long Room Hub Arts and Humanities Research Institute (TLRH)
- Centre for Research on Adaptive Nanostructures and Nanodevices (CRANN)

Trinity is the top-ranked European university for producing entrepreneurs for the past five successive years and Europe's only representative in the world's top-50 universities (Pitchbook Universities Report).

Trinity is home to the famous Old Library and to the historic Book of Kells as well as other internationally significant holdings in manuscripts, maps and early printed material. The Trinity Library is a legal deposit library, granting the University the right to claim a copy of

every book published in Ireland and the UK. At present, the Library's holdings span approximately 6.5 million printed items, 400,000 e-books and 150,000 e-journals. With over 120,000 alumni, Trinity's tradition of independent intellectual inquiry has produced some of the world's finest, most original minds including the writers Oscar Wilde and Samuel Beckett (Nobel laureates), the mathematician William Rowan Hamilton and the physicist Ernest Walton (Nobel laureate), the political thinker Edmund Burke, and the former President of Ireland Mary Robinson. This tradition finds expression today in a campus culture of scholarship, innovation, creativity, entrepreneurship and dedication to societal reform.

### **Rankings**

Trinity is the top ranked university in Ireland and ranked 108th in the world (QS World University Rankings 2020). Trinity ranks in the top 50 in the world on 4 subjects and in the top 100 in 18 subjects (QS World University Rankings by Subject 2020). Full details are available at: [www.tcd.ie/research/about/rankings](http://www.tcd.ie/research/about/rankings).

## **The Selection Process in Trinity**

The Selection Committee (Interview Panel) may include members of the Academic and Administrative community together with External Assessor(s) who are expert in the area. Applications will be acknowledged by email. If you do not receive confirmation of receipt within 1 day of submitting your application online, please contact the named Recruitment Partner on the job specification immediately and prior to the closing date/time.

Given the degree of co-ordination and planning to have a Selection Committee available on the specified date, the University regrets that it may not be in a position to offer alternate selection dates. Where candidates are unavailable, reserves may be drawn from a shortlist. Outcomes of interviews are notified in writing to candidates and are issued no later than 5 working days following the selection day.

In some instances the Selection Committee may avail of telephone or video conferencing. The University's selection methods may consist of any or all of the following: Interviews, Presentations, Psychometric Testing, References and Situational Exercises.

It is the policy of the University to conduct pre-employment medical screening/full pre-employment medicals. Information supplied by candidates in their application (Cover Letter and CV) will be used to shortlist for interview.

Applications from non-EEA citizens are welcomed. However, eligibility is determined by the Department of Business, Enterprise and Innovation and further information on the Highly Skills Eligible Occupations List is set out in Schedule 3 of the Regulations <https://dbei.gov.ie/en/What-We-Do/Workplace-and-Skills/Employment-Permits/Employment-Permit-Eligibility/Highly-Skilled-Eligible-Occupations-List/> and the Ineligible Categories of Employment are set out in Schedule 4 of the Regulations <https://dbei.gov.ie/en/What-We-Do/Workplace-and-Skills/Employment-Permits/Employment-Permit-Eligibility/Ineligible-Categories-of-Employment/> . Non-EEA candidates should note that the onus is on them to secure a visa to travel to Ireland prior to interview. Non-EEA candidates should also be aware that even if successful at interview, an appointment to the post is contingent on the securing of an employment permit.

## **Equal Opportunities Policy**

Trinity is an equal opportunities employer and is committed to employment policies, procedures and practices which do not discriminate on grounds such as gender, civil status, family status, age, disability, race, religious belief, sexual orientation or membership of the travelling community. On that basis we encourage and welcome talented people from all backgrounds to join our staff community. Trinity's Diversity Statement can be viewed in full at <https://www.tcd.ie/diversity-inclusion/diversity-statement>.

## Application Procedure

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