



THE POST

College:	College of Engineering, Mathematics and Physical Sciences
Post:	Postdoctoral Research Fellow
Reference No:	P56662
Grade:	F
Reporting To:	Dr Marc Goodfellow

The above full-time post is available from 01 September 2017 for 24 months in the College of Engineering, Mathematics and Physical Sciences.

Job Description

Main purpose of the job:

The successful candidate will work with Dr Marc Goodfellow on the project “Quantifying uncertainty in perturbed brain networks: towards a decision support tool for epilepsy surgery”. The primary focus of the project will be the development of computational approaches to quantify how altering network structure affects the dynamics that it can generate. The project will include the development of global optimisation and heuristic methods to search over network structures to find which perturbations optimally suppress the generation of seizure-like dynamics.

Main duties and accountabilities:

1. To undertake research as appropriate to the field of study. The responsibilities may include all or some of the following:
 - Acting as principal investigator on research projects;
 - Developing research objectives, projects and proposals;
 - Conducting individual or collaborative research projects;
 - Identifying sources of funding and contributing to the process of securing funds;
 - Extending, transforming and applying knowledge acquired from scholarship to research and appropriate external activities;
 - Writing or contributing to publications or disseminating research findings using media appropriate to the discipline;
 - Making presentations at conferences or exhibiting work in other appropriate events;
 - Assessing, interpreting and evaluating outcomes of research;
 - Developing new concepts and ideas to extend intellectual understanding;
 - Resolving problems of meeting research objectives and deadlines;
 - Developing ideas for generating income and promoting research area;
 - Developing ideas for application of research outcomes;
 - Deciding on / following research programmes and methodologies, often in collaboration with colleagues and sometimes subject to the approval of the head of the research programme on fundamental issues.
2. To contribute to teaching and learning programmes in the School and to supervise postgraduate research students.
3. To act as research team leader including:

- Mentoring colleagues with less experience and advising on their professional development;
 - Coaching and supporting colleagues in developing their research techniques;
 - Supervising the work of others, for example in research teams or projects;
 - Developing productive working relationships with other members of staff;
 - Co-ordinating the work of colleagues to ensure equitable access to resources and facilities;
 - Dealing with standard problems and help colleagues to resolve their concerns about progress in research.
4. To routinely communicate complex and conceptual ideas to those with limited knowledge as well as to peers using high level skills and a range of media and to present the results of scientific research to sponsors and at conferences.
5. As determined by the nature of the project and at the direction of the PI, to plan, co-ordinate and implement research programme activity including:
- Managing the use of research resources and ensure that effective use is made of them;
 - Monitoring and reporting on the use of research budgets;
 - Helping to plan and implement commercial and consultancy activities;
 - Where appropriate, to plan and manage own consultancy assignments.

This job description summarises the main duties and accountabilities of the post and is not comprehensive: the post-holder may be required to undertake other duties of similar level and responsibility. Please visit the Human Resources website to view the Research Fellow role profiles.

Person Specification

Competency	Essential	Desirable
Attainments/Qualifications	PhD in applied mathematics, computer science, engineering or suitable equivalent.	Interest in computational neuroscience Be a nationally recognised authority in the subject area.
Skills and Understanding	<p>Experience in at least one of the following areas:</p> <ul style="list-style-type: none"> - Applied dynamical systems; - Analysis of complex networks; - Graph theory; - Optimization; - Non-deterministic search methods; - Machine learning algorithms; - Methods for model parameter inference from data; <p>Programming experience in a relevant high-level language (e.g. MATLAB, Python)</p> <p>Record of research output in internationally recognised peer-reviewed publications</p>	<p>Experience in at least one of the following areas:</p> <ul style="list-style-type: none"> - handling observational data sets; - numerical model output. <p>Experience in parallel programming or GPUs.</p> <p>Experience of creating software for wider community use.</p>
Prior Experience	Experience of managing research projects and research teams in a quantitative discipline	<p>Experience of working in a multidisciplinary environment.</p> <p>Experience of presenting at scientific meetings / workshops.</p>

		<p>Experience of teaching / demonstrating at undergraduate and postgraduate level.</p> <p>Involvement in the development and writing of grant proposals.</p> <p>Experience of acting as principal investigator on research projects.</p>
Behavioural Characteristics	<p>Excellent written and verbal communication skills.</p> <p>Able to communicate complex and conceptual ideas to a range of groups.</p> <p>Evidence of the ability to collaborate actively within the Institution and externally to complete research projects and advance thinking.</p> <p>Able to participate in and develop external networks.</p> <p>Able to balance the pressures of research, administrative demands and competing deadlines.</p>	<p>Able to identify sources of funding, generate income and build relationships for future activities.</p>

Informal Enquiries

Before submitting an application you may wish to discuss the post further by contacting Dr Marc Goodfellow, Senior Lecturer in Applied Mathematics, telephone (+44(0)1392 723420) email m.goodfellow@exeter.ac.uk.

Terms & Conditions

Our Terms and Conditions of Employment can be viewed [here](#).

Further Information

Please see our [website](#) for further information on working at the University of Exeter.