1 Advertisement

Post Title: Research Fellow: Elucidating the role of Hox genes for circuit function.
School/department: Department of Experimental Medicine, Brighton and Sussex Medical School.
Hours: Full time considered up to a maximum of 1 FTE
Contract: fixed term until 31 December 2021
Reference: 5502
Salary: starting at £33,797 to £40,322 per annum, pro rata
Placed on: 16 February 2021
Closing date: 4 March 2021. Applications must be received by midnight of the closing date.
Expected start date: 1 April 2021 or as soon as possible thereafter.

Applications are invited for a Wellcome Trust funded Research Fellow position (Postdoc or close to PhD completion) to join the lab of Dr. Jimena Berni in the Brighton and Sussex Medical School, situated in the University of Sussex Falmer campus. We investigate how Hox genes orchestrate the diversification of motor circuits during nervous system development. The position is available for 9 months starting on the 1st of April or as soon as possible thereafter.

The post-holder will start at a critical stage where the last results need to be gathered to finish a publication. They will use *Drosophila melanogaster* to follow up on our recent discovery that the neuronal morphology of neurons is regulated by the post mitotic expression of Hox genes.

They will investigate the functional relevance of Hox genes-controlled morphologies for the specification of local circuit and the integration across different networks. They will use a multilevel approach analysing activity (using calcium imaging) in individual neurons, circuits (using thermos/optoc-genetics) and evaluating behaviour (with FIM).

Essential skills:
- PhD in developmental biology or neuroscience, or be close to the completion of their degree
- Experience performing and analysing behaviour experiments
- Excellent analytic, design, and scientific skills
- Good interpersonal skills and an ability to work as part of a team
- The ability to organise time and work effectively, independently and responsibly

Desirable skills:
- Prior experience working with *Drosophila* and/or performing calcium imaging experiments would be beneficial
- Prior experience in fluorescent microscopy and genetics would be an advantage.

Applications should include a C.V. and a brief statement of your scientific background and why you would like to join the lab.

Please contact Dr. Jimena Berni, J.Berni@sussex.ac.uk for informal enquiries.

The University is committed to equality and valuing diversity, and applications are particularly welcomed from women and black and minority ethnic candidates, who are under-represented in academic posts in Science, Technology, Engineering, Medicine and Mathematics (STElMM) at Sussex.

For full details and how to apply see our vacancies page www.brighton.ac.uk/jobs www.bsms.ac.uk

The University of Sussex values the diversity of its staff and students and we welcome applicants from all backgrounds.

2. The School / Division

Please find further information regarding the school/division at https://www.bsms.ac.uk/about/contact-us/staff/dr-jimena-berni.aspx

3. Job Description

Job Description for the post of Research Fellow: Elucidating the role of Hox genes for circuit function.

Department: Experimental Medicine

Section/Unit/School: Brighton and Sussex Medical School

Location: BSMS Research Building

Grade: 7

Responsible to: Dr Jimena Berni

Job description

Understanding the way in which genes regulate the development of the different neural networks that will ultimately produce timely and adequate behaviours is not a simple or
straightforward task, but it is an unsolved, fundamental question that lies at the heart of our understanding of how the central nervous system works. The Hox genes are known to be key regulators of cellular identity in the anteroposterior body axis, but the link between Hox mediated neuronal diversification and the formation of locally, specialized circuits in the nervous system is far from understood. This is what we investigate.

The successful applicant will investigate the role of Hox genes a) for the specification of local circuit function and b) for integration across different networks.

*Drosophila* will be used as the experimental model because of its relatively simple nervous system and its powerful genetic tools. The project will take advantage of our results showing that neuronal morphologies are regulated by postmitotic expression of Hox genes. They will use a multilevel approach analysing activity (using calcium imaging) in individual neurons, circuits (using thermos/optoc-genetics) and evaluating behaviour (with FIM), to demonstrate the functional relevance of Hox genes-controlled morphologies for the specification of local circuit and the integration across different networks.

The basic nature of this question strongly suggests that the findings will have implications for understanding the genetic control of neuronal circuitry in many nervous systems including our own.

**Selected Publications**


### 4. Person Specification

**Duties and responsibilities**

The post-holder will be expected to work independently designing, performing, analysing and interpreting their experiments. They will participate in the dissemination of research through publications and oral presentations both within the department and at conferences. They will also be expected to help advise other members of the lab, as and when required.
**Essential Skills**

- PhD in developmental biology or neuroscience (or close to completion).
- Experience performing and analysing behavioural experiments
- Excellent analytic, design, and scientific skills
- Good interpersonal skills and an ability to work as part of a team
- The ability to organise time and work effectively, independently and responsibly

**Desirable Skills**

- Prior experience working with *Drosophila*,
- Performing calcium imaging experiments would be beneficial;
- Experience in fluorescent microscopy,
- Genetics would be an advantage.