1 Advertisement

Post Title: Research Assistant in Molecular Biology/Genetics
School/department: School of Life Sciences, Evolution, Behaviour and Environment
Subject Group
Hours: full time (1.0 FTE / 36.5 hours)
Requests for flexible working options will be considered (subject to business need).
Contract: fixed term for 13 months
Reference: 3732
Salary: starting at £30,046 and rising to £33,797 per annum
Placed on: 22 May 2020
Closing date: 22 June 2020. Applications must be received by midnight of the closing date.
Expected start date: 1/10/2020 (start date may be adjusted in line with official government guidelines around the current pandemic)

Applications are invited for the post of Research Assistant in Molecular Biology/Genetics based in the School of Life Sciences at the University of Sussex; one of the UK’s most prestigious universities.

Undertaking research in a vibrant, inter-disciplinary research environment with an excellent international reputation, you will work as a key member of a research team investigating the function and evolution of plant genomes with a particular emphasis on transposable elements (TEs). TEs represent the majority of eukaryotic DNA, for example they occupy ~50% of the human genome and up to 80-90% of the genomes of some plants. Our lab is interested in understanding the interactions between TEs and their host genomes by focusing both on mechanistic and evolutionary perspectives.

We are seeking for a skilled molecular biologist to work on a project trying to elucidate how the 3D organisation of chromosomes within the nucleus affects the integration of new TE copies in the genome. When TEs are active, either at certain developmental stages or when host epigenetic defences are compromised, new copies are generated that integrate in new chromosomal locations. Integration of new TE copies in the genome is a process that is modulated on several molecular levels. One such level, the folding and positioning of chromosomes inside the nucleus, has only recently been recognised as a potentially important parameter, but so far has only rarely been integrated in experimental studies or accounted for in modelling. By using arabidopsis and rice lines with active TEs and by testing various tissues, you will i) identify TE families that are actively transposing in the two plant genomes, ii) identify the chromosomal integration loci of the new TE copies, and iii) produce and analyze whole-genome methylation data. The ultimate aim of the project is to combine analyses of TE, epigenetic and chromosome conformation capture (Hi-C) data to characterize the epigenetic and 3D structure of the host cells where the new TE copies have inserted.
This is an excellent opportunity for a molecular biologist wishing to apply their skills to an innovative area of science. The position is supported by a grant of the Royal Society and is associated with generous research funds. The candidate will collaborate with colleagues in UK (Dr. Hans-Wilhelm Nuetzmann, Dr. Davide Michieletto) and US (Prof. Keith Slotkin).

The position is primarily lab-based. You should have a PhD in Molecular Biology/Genetics, excellent molecular biology skills and be interested to work at the cutting-edge of plant genetics/epigenetics. Please contact Dr Alexandros Bousios (alex.bousios@sussex.ac.uk) for informal enquiries. To learn more about the lab, visit http://www.sussex.ac.uk/lifesci/bousioslab/.

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 (STEMM) at Sussex.

For full details and how to apply see our vacancies page.

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 at http://www.sussex.ac.uk/lifesci/

3. Job Description

Job Description for the post of: Research Assistant in Molecular Biology/Genetics

Department: Evolution, Behaviour and Environment

School: Life Sciences

Location: JMS Building

Grade: 6

Responsible to: Dr Alexandros Bousios

The post involves the growing and day-to-day care of appropriate plant lines under specific conditions that can promote active TE transposition. We will identify active TE families using both RT-qPCR and NGS-based approaches. For the detection of the de novo insertions of TE copies in the genome you will produce either short-read Illumina or long-read Nanopore/PacBio data (or both). Using computational approaches, we can detect split-read or read-pair events to pinpoint the loci of non-genome reference TE insertions. We will also produce whole genome DNA methylation data using standard protocols for bisulfite sequencing. You will work closely with the group leader and two
PhD students. Additional responsibilities include lab organization, thorough record keeping and technical support for ongoing projects.

4. **Person Specification**

**Essential Criteria**
- PhD in Molecular Biology/Genetics
- Good presentation skills, with the ability to communicate effectively, both orally and in writing, with colleagues and external audiences
- Ability to work independently and as part of a team
- Ability to exercise a degree of innovation and creative problem-solving
- Excellent organisational and administrative skills
- Ability to prioritise and meet deadlines
- Excellent IT skills

**Desirable Criteria**
- Experience in research on transposable elements
- Experience in research on epigenetics
- Experience in research on chromosome conformation capture technologies and 3D genome biology
- Experience in producing NGS libraries
- Experience in bioinformatics (e.g. Perl, Python, R, Bash)
- Experience in plant maintenance