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Post Title: Postdoctoral Research Fellow in Molecular Biology/Genetics
School/department: School of Life Sciences, Evolution, Behaviour and Environment Subject Group
Hours: full time or part time up to a maximum of 1.0 FTE
Requests for flexible working options will be considered (subject to business need).
Contract: fixed term for 13 months
Reference: 5294
Salary: £33,797 to £40,322 per annum, pro rata if applicable
Placed on: 18 January 2021
Closing date: 16 February 2021   Applications must be received by midnight of the closing date.
Expected Interview date: end of February 2020
Expected start date: 01 March 2021

Applications are invited for the post of Postdoctoral Research Fellow 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 and transposable elements (TEs).

TEs represent the majority of eukaryotic DNA, for example they occupy 55% 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 investigate the interplay between the 3D genome and transposable elements. In particular, we are aiming to elucidate the role of chromosome topology in guiding TE integration patterns. For our studies, we will use the plant model species A. thaliana. You will perform TE activation assays, identify TE integration sites by deep sequencing and analyse epigenetic modifications.

The 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. To this end, the project includes collaborations with colleagues in UK (Dr. Hans-Wilhelm Nuetzmann, Dr. Davide Michieletto) and US (Prof. Keith Slotkin).

This is an excellent opportunity for a molecular biologist wishing to apply their skills to an innovative area of science. Through the collaborations, you will have the opportunity to further acquire new skill sets, for example in Hi-C technologies. The position is supported by a grant of the Royal Society and is associated with generous research funds. We aim for funding to be available after the completion of the Royal Society support.

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

3. Job Description

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

Department: Evolution, Behaviour and Environment

Section/Unit/School: Life Sciences

Location: JMS Building

Grade 7

Responsible to: Dr Alexandros Bousios

The post involves the day-to-day care of Arabidopsis thaliana lines. The plants will be subjected to specific stresses (e.g. heat) that can promote active TE transposition. For the identification of de novo TE integration events, you will apply both quantitative PCR and whole genome short-read deep sequencing using the Illumina platform. You will detect discordant reads and structural variants using computational approaches to pinpoint and analyze the loci of non-genome reference TE insertions (training will be provided, if necessary). You will also produce and analyze bisulfite methylation and other epigenetic data using NGS sequencing. Depending on progress, you may produce chromosome conformation capture (Hi-C) data in collaboration with the lab of Dr. Nuetzmann. You are expected to analyse and interpret the research findings and contribute to the writing of the scientific publications. You will work closely with the group leader and two PhD students, and also the collaborators of this project. Additional responsibilities include lab organization, thorough record keeping and, if needed, support and advice for ongoing projects.

4.   Person Specification

ESSENTIAL CRITERIA

1.   PhD in Molecular Biology/Genetics, or other equivalent qualification, or appropriate level of experience, as appropriate to the discipline (see role-specific criteria below).

2.   Evidence of engagement in high-quality research activity.

3.   Excellent presentation skills, with the ability to communicate effectively, both orally and in writing, with students, colleagues and external audiences.

4.   Ability to work individually on own initiative and without close supervision, and as part of a team.

5.   Ability to exercise a degree of innovation and creative problem-solving.

6.   Excellent organisational and administrative skills.

7.   Ability to prioritise and meet deadlines.

8.   Excellent IT skills.

ESSENTIAL ROLE-SPECIFIC CRITERIA

1.   Experience in research in any of the following areas: genetics, epigenetics, genome biology, transposable elements, plant biology.

DESIRABLE CRITERIA

1.   Emerging track record of high-quality publications in reputable journals.

2.   Experience of generating research or knowledge exchange income.

3.   Experience in research on chromosome conformation capture and 3D genome biology.

4.   Experience in bioinformatics (Perl, Python, R, Bash).

5.   Experience in producing and analyzing NGS data.

6.   Experience in plant genetics.

7.   Experience in plant maintenance.