The Ziolkowski lab

LABORATORY OF GENOME BIOLOGY, ADAM MICKIEWICZ UNIVERSITY

PhD student position on meiotic crossover variation in Arabidopsis

A PhD student position is available in the Laboratory of Genome Biology led by Dr Piotr Ziółkowski at the Adam Mickiewicz University, Poznan, Poland. The PhD candidate will be co-supervised by Dr Piotr Ziółkowski and Dr Alexandre Pelé.

During sexual reproduction, meiotic recombination is crucial for producing viable gametes and shuffle the genetic information between parental chromosomes through the crossovers. While tightly regulated, variations for number and position of crossovers along chromosomes have repeatedly been observed both between and within species. Our laboratory studies the factors and pathways that control meiotic crossover formation and variation through the model plant *Arabidopsis thaliana*.

This project aims to identify novel recombination modifier loci, which govern genome wide crossover variation between genotypes. To that end, the successful candidate will benefit from a unique plant material corresponding to F2 populations and fixed lines generated from hundreds of resequenced Arabidopsis accessions crossed with two Fluorescent Transgenic Lines. In these plants, assessment of crossover rate is possible in a subtelomeric and pericentromeric interval by analyzing the segregation of fluorescent reporters in progeny seeds. The successful candidate will conduct large experiments to measure crossover rate in these lines and few selected populations and perform GWAS and QTL mapping. Next, we will attempt to identify the causal gene(s) by investigating T-DNA mutants available and using CRISPR-Cas9 technology. Finally, he/she will try to get closer to the molecular mechanisms involved by applying molecular and cytological techniques.

The successful candidate will have master degree in biotechnology, biology or related field and a solid knowledge in genetics and molecular biology. Candidates with hand-on experience on Arabidopsis and skills in molecular genetics are encouraged to apply. The project would significantly benefit from applying Arabidopsis meiotic cytology; therefore, this expertise is considered an advantage.

We offer:
- Supportive and stimulating environment in an international, friendly and well-equipped group
- Access to cutting-edge technologies in plant genetics, molecular biology and cytology
- A chance to develop new skills in research, paper writing and grant application
- Opportunities to participate at national and international conferences

This project and the four year PhD position are fully funded by the NCN (Polish National Science Centre).

Please submit the following documents with your application:
• CV which gives an overview of the academic/education history
• Letter of motivation
• Names and contact information of at least one academic referees
Application deadline: **30.09.2022**

For further details contact us by email:
Dr Alexandre Pelé, tel. +48 510 677 067, apele@amu.edu.pl
For more information on the group, visit our website @ http://dgb.amu.edu.pl

Please include in your offer:
"I hereby give consent for my personal data included in my application to be processed for the purposes of the recruitment process under the Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural

persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation).''