

Postdoctoral researcher in population genomics of trees

The University of Bordeaux is a great dynamic and responsible university that cares about the well-being of its staff. Joining us means working in a privileged environment within a particularly diverse and open professional community, benefiting from welcome and inclusion schemes, training and internal mobility. It means participating in an academic, scientific and human adventure. It means committing to meeting the challenges of the 21st century.

Join the Fruit Biology and Pathology unit (UMR 1332 BFP)! The UMR [BFP](#) is a major actor in plant biology research in the Nouvelle-Aquitaine region, in partnership between the Biology and Plant Improvement (BAP) and Plant Health and Environment (SPE) departments of INRAE and the Environmental Sciences department of the University of Bordeaux.

As part of the Bordeaux Plant Sciences Major Research Program ([GPR BPS](#)), we are recruiting a **Post-Doctoral Researcher** whose work will focus **on the fitness of woody plants in the face of global change: using genomic resources to increase productivity and resilience**.

Main activities:

The Bordeaux Plant Sciences programme is a unique consortium of 11 laboratories of excellence on the Bordeaux campus specialized in plant studies.

Your mission fits into the PERFIT research axis “Perennial woody plant fitness in a changing world: making use of genomic resources to increase productivity and resilience”.

Your work will assess genomic diversity and genetic load from available genomic data for various woody species. For this, you will use the available pipelines from phase 1 of the project and apply machine learning-based methods, taking into account single nucleotide polymorphisms (SNPs) and structural variants (SVs).

You will build a searchable variant database for the implementation of genomically-assisted selection of alleles that are favourable or unfavourable to the improvement of perennial woody species.

Domesticated woody plants

- You will perform a functional annotation of SNPs and SVs in almond (*Prunus dulcis* Batsch and related species) and cherry (*Prunus avium* L.), through the construction of pangenomes that will provide information on their impact on the coding regions of the genes, the regulatory elements and the genetic dosage
- You will make predictions of deleterious mutations using methods based on evolutionary conservation and machine learning
- You will evaluate the impact of domestication and selection on genetic load and genomic architecture using a comparative genomics approach, comparing the results obtained for these species with those already available for apricot, *P. armeniaca*, and for the phylogenetically more distant grapevine, in collaboration with two ongoing Horizon Europe projects

Wild woody plants

- You will predict deleterious mutations using methods based on evolutionary conservation and machine learning in the tropical tree *Dicorynia guianensis*
- You will characterize genotype-environment (GEA) and genotype-phenotype (GWAS) associations to identify beneficial mutations related to climate adaptation and/or underlying fitness and performance traits (GWAS)
- You will calculate "positive effective alleles" (PEAs) statistics by counting at individual and at population levels. These statistics are similar to the statistics used to characterize the genetic load in the approaches developed during phase 1

You will have access to the INRAE [Genotoul](#) computing cluster. You will be supervised by Véronique Decroocq (BFP) and Myriam Heuertz (BIOGECO), in connection with the project coordinator Santiago González-Martínez (BIOGECO). Regular meetings will be organised with the whole consortium to discuss the analyses to be carried out and to exchange on the interpretation of the results.

Your skills:

Holder of a PhD and have already worked in plant or tree population genomics, you have very good knowledge:

- in population genomics,
- in genotype-environment association genetics and/or GWAS,
- in ecology and management of natural genetic resources,
- in quantitative genetics and plant breeding.

You are independent, well organized and scientifically rigorous, you are a good team player and you have a good command of English (level B2/C1).

Do you recognize yourself? Apply!

More information:

In this position, you will be part of the [PrADAM](#) team which actively leads crucial projects at national and European level focusing on the genetic diversity of stone fruit species. Our goal is to integrate the imperatives of resilience and adaptation to climate change into the design of future plant breeding programs.

Based in Villenave d'Ornon – access by tram line C (Vaclav Havel stop, then a 20-min walk) buses 5, 23, 35, 87, bike. The laboratory is located in a specialized campus studying plants and the vineyard of Bordeaux. It's located about 30 min from the city centre and about 60 Km of the Atlantic coast.

16-month fixed-term contract

Gross monthly salary: 2750€

Job Benefits:

50 days of annual leave from the first year

75% of the cost of a Gironde public transport pass covered

Contribution to private healthcare insurance of 15€ / month

Subsidised meals

Leisure, sports and cultural activities for all staff

Disabled-friendly establishment

Possibility of staff parking

Sustainable mobility package for commuting between home and work

Welcome programme and training courses

Recruitment process: Applications are reviewed as they arrive.

Candidates selected for an interview will be contacted by the Recruitment Officer for a first pre-qualification phone conversation. An interview with the supervisor will then be organised by videoconference.

Interested applicants should send a CV, a brief statement describing their qualifications and basis for interest in the position, copies of up **to 3 relevant publications, and the email addresses of 2 appropriate references.**

Link to job offer: <https://www.u-bordeaux.fr/universite/travailler-a-l-universite/offres-emploi/postdoctoral-researcher-population-genomics-trees>

Please note that to be admissible, you must apply to the job offer or send an e-mail with your documents to: job-ref-aowpdagm06@emploi.beetween.com