



## Post-doc position in Plant Sciences

### *Genetic and functional basis of plant tolerance to multiple stresses.*

Two (+1) years position supported by Bordeaux Plant Science (BPS) research program is available in the *Fruit Biology and Pathology research unit* in Bordeaux, France. This post-doc position is one of 19 offered positions as part of Bordeaux University excellence BPS program, which will provide access to many scientific events and resources. The successful candidate will work in close collaboration with two others post-docs in the Work Package PROMISE which goal is to study plant responses to multistress and trade-offs between tolerance and productivity.

#### Job description

Plant health is of primary importance to improve and secure food supply of a growing human population. Virus infection is one of the most alarming biotic threats due to the impact of climate change on the spatial and temporal distribution of vectors and viruses. Furthermore, it has been shown that heat stress largely suppresses the defence responses produced by the plant during a virus infection. Plant tolerance can be defined as a trade-off between stress response and growth maintenance. In order to be able to propose new tolerant varieties, this project proposes to find the genetic and functional bases of tolerance to combined viral and thermal stress. To answer this question, the project uses two complementary plant species: *Arabidopsis thaliana*, as a model, and *S. pimpinellifolium*, as an ancestor and source of diversity for tomato. The project will provide a detailed description of the trade-off between response to combined stresses and growth using phenotypes of disease traits, growth, fitness and metabolic variables in *Arabidopsis* and *S. pimpinellifolium*, and will help to understand the genetic architecture of tolerance through GWAs strategies. In the last year of the project, the post-doctoral candidate will also participate in a meta-analysis of tolerance in a variety of plants subjected to different stresses (thermal, hydric, biotic) in the framework of the PROMISE WP.

#### Environment

The 'Virology' (V. Schurdi-Levraud), 'FDFE' (F. Delmas) and 'Meta' (P. Petriacq) teams of the *Fruit Biology and Pathology* research unit are jointly responsible for this project and are recognised for their expertise in plant genetics, physiology and metabolism. We are located on the plant science campus of the Bordeaux INRAE (French National Research Institute for Agriculture, Food and Environment), France.

Bordeaux is an easy-going and enjoyable UNESCO world heritage city with many cultural, social, sportive events, famous for its vineyards and only one hour away from marvellous sand beaches.

#### Applicants

We are looking for highly motivated applicants with a good publication track record and a strong commitment to research. Skills in quantitative genetics, biostatistics and English communication are expected. Skills/interest in plant pathology and metabolism would be a plus.

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Starting date: April 2022

#### Team/lab website

[https://www6.bordeaux-aquitaine.inrae.fr/bfp\\_eng/](https://www6.bordeaux-aquitaine.inrae.fr/bfp_eng/)

#### Selected publications

- ❖ Rubio B., Cosson P., Caballero M., Revers F., Bergelson J., Roux F., Schurdi-Levraud V., 2019. New Phytologist, 221:4, 2016-2038  
<https://doi.org/10.1111/nph.15507>
- ❖ Luna E, Flandin A, Cassan C, Prigent S, Chevanne C, Kadiri CF, Gibon Y, Pétriacq P, 2020. Metabolites. 11: 146, <https://doi.org/10.3390/metabo10030096>
- ❖ Bernadette Rubio, Olivier Fernandez, Patrick Cosson, Thierry Berton, Mélodie Caballero, Roxane Lion, Fabrice Roux, Joy Bergelson, Yves Gibon and Valérie Schurdi-Levraud, 2021., Metabolites 2021, 11(4), 230; <https://doi.org/10.3390/metabo11040230>
- ❖ Monnot, S.; Desaint, H.; Mary-Huard, T.; Moreau, L.; Schurdi-Levraud, V.; Boissot, N. 2021. Cells 2021, 10, 3080. <https://doi.org/10.3390/cells10113080>
- ❖ Allwood J W, Williams A, Uthe H, van Dam N M, Mur L A J , Grant M R, Pétriacq P, 2021. Metabolites. 11: 558 <https://doi.org/10.3390/metabo11080558>

#### Contact

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#### Annual salary

31 kEuros

(not including certain allowances for transport or family expenses according to personal situations)

**Deadline : The advertisement is valid until the position is filled**