PhD Position in Plant-Microbe Interactions  
**Deadline to apply: May 9, 2016**

The laboratory of Ecological and Biological Interactions (http://ebi.labo.univ-poitiers.fr) is located at the University of Poitiers, in France. The research group working on Plant Responses to Biotic Stress and Beneficial Microorganisms in the research team SEVE invites applications for a PhD position in Plant-Microbe Interactions.

**Research Project: Sugar transport at plant-microorganism interfaces**

Damage caused by pathogens lead to major yield losses in cultivated crops worldwide and the widespread use of pesticides. The necessity to protect the environment and the emergence of pesticide-resistant pathogen strains require alternative crop protection strategies. A growing body of evidence shows that many non-pathogenic rhizobacteria species are able to confer to plants enhanced growth and/or resistance to various biotic and abiotic stresses. The molecular mechanisms involved in these biological processes are beginning to be elucidated (Vacheron et al, 2013; Pieterse et al, 2014).

Our research team studies the source-to-sink transport of sugar and its regulation by abiotic and biotic stresses (Lemoine et al, 2013) in two model plants species: *Arabidopsis thaliana* and grapevine. This work has led to the characterization of a sugar transporter, STP13, playing a key role in the resistance of *Arabidopsis thaliana* to the fungal pathogen *Botrytis cinerea* (Lemonnier et al., 2014). This discovery add to the growing body of evidence in the literature demonstrating the importance of sugar transport in plant pathogen resistance (Chen et al., 2010; White and Frommer, 2015).

The proposed PhD research project intends to pursue this work and extend it to plant-rhizobacteria interactions. The selected candidate will notably work on elucidating novel molecular mechanisms involved in these interactions and in rhizobacteria-induced plant resistance against pathogens using *Arabidopsis thaliana* as model plant. More specifically, she/he will test the hypothesis that reallocation of carbon resources and regulation of sugar transporter activities play a role during plant root colonization with rhizobacteria and during pathogen infection. This will involve studying the expression of sugar transporter genes during these biological processes and carrying out their functional characterization using a reverse genetic approach.

**Requirements**

Highly motivated and enthusiastic students with a good academic track record are encouraged to apply. Applicants are required to have a Master degree (or equivalent) in plant biology, molecular biology, biotechnology, or closely related field. Preference will be given to candidates with experience in plant molecular biology, genetics, physiology and/or phytopathology. Desirable skills also include experience in microbiology and bioinformatics.

**PhD position and funding information**

We offer a fully funded 3-year PhD Studentship starting at the beginning of October 2016. The successful candidate will be provided with comprehensive supervision. He/she will have the opportunity to participate to a multidisciplinary project involving the use of a wide range of advanced techniques in phytopathology, microbiology, molecular biology, genetics, and microscopy.

**How to apply**

Please send your applications to cecile.vriet@univ-poitiers.fr and sylvain.la.camera@univ-poitiers.fr. Applications (as a single pdf document) must include a motivation letter, a CV including the contact details of two referees (and/or their recommendation letter), and copies of university transcripts. Review of applications will start immediately and pre-selected candidates will be interviewed between May 11 and 17, 2016.