

Two PhD Studentships are available to work on the project

Do entomopathogenic fungi drive arthropod diversity gradients via host negative density dependence?

Two highly motivated postgraduate students are sought to join a project exploring interactions between entomopathogenic fungi and arthropods in tropical forests. We hypothesise that host-specific entomopathogenic fungi reduce the chance that any single arthropod species can become highly abundant, hence maintaining arthropod diversity. We will explore whether this mechanism can contribute to explaining arthropod diversity patterns across the arthropod phylogeny, and in relation to elevation, anthropogenic habitat disturbance, and future climate change. We envisage that one student will focus on elevation and climate change, and the other on anthropogenic habitat change. Students will conduct field sampling for fungus-infected arthropods and assess arthropod population sizes, experimental eradications of fungi in the wild, experimental exploration of climate impacts in the laboratory, molecular identification of arthropods and fungi in the lab, and statistical analysis of results, including incorporation of fungus-arthropod network data into the LifeWebs database (www.lifewebs.net). There will also be opportunities to develop the project in a direction of the students' own choosing. Duties will include spending extensive periods of time in the field in Malaysian Borneo.

The successful applicants will join the Ant Research Group (<http://antscience.com/>) at the Institute of Entomology, Biology Centre Academy of Sciences, Ceske Budejovice, Czech Republic, under the supervision of Tom Fayle (<http://www.tomfayle.com/index.htm>), Shuang Xing (<https://xingshuang.weebly.com/about.html>), and Vojtech Novotny ([department web](#)). The laboratory is a dynamic, multinational group studying ant ecology, evolution and biogeography, and is embedded within the Department of Ecology and Conservation Biology, a world-class centre for interaction network research with regular publications in *Science*, *Nature* and other leading journals. The research facility is in Ceske Budejovice, a charming historical city in the south of the country, within easy reach of Prague and Vienna.

The deadline for applications is January 15th 2021, with an expected start date of April 1st 2021 (negotiable). The students will receive a scholarship from the University of South Bohemia and employment on an ongoing grant from the Czech Science Foundation for the 4-year PhD course, sufficient to cover living expenses in Czech Republic. Applicants from all countries are eligible.

Required

- A master's degree (non-negotiable requirement for PhD study in Czech Republic).
- Interest in the ecology of fungi and/or insects (particularly ants, which are likely to make up the majority of sampled and infected arthropods).
- 1st or upper second (2.1) undergraduate degree in ecology or related subject (or equivalent: <https://tinyurl.com/y2kcw2c8>)
- Enthusiasm for working in the field for extended periods of time in challenging conditions in tropical rain forest.
- Ability to work independently, manage small teams of assistants, and collaborate with other team members.
- Fluency in spoken and written English.
- Experience in the use of ecological statistical analyses.

Desirable

- Previous experience of tropical field work.
- Research experience with fungus or insect ecology.
- Experience with basic ecological molecular lab work relating to use for species identification.
- Experience with scientific publishing in the above fields.

To apply please send a CV, contact details for three references, and cover letter stating qualifications, previous work and motivation for this position to **Shuang Xing** (xingshuangbjfu@gmail.com). If you would like to discuss the project further, please feel free to contact Tom Fayle (tmfayle@gmail.com).