

ERC-funded PhD Position in Adaptive value of Polyploidy

Group of Ecological Genomics (Filip Kolář)
Department of Botany, Charles University, Prague, Czech Republic
<https://botany.natur.cuni.cz/ecolgen>

Whole genome duplication (WGD, polyploidization) is a dramatic genome-wide mutation whose ubiquity across eukaryotes suggests an adaptive benefit, although underlying mechanism remains unknown. In the project, the successful applicant will test if WGD promotes adaptation in natural plant populations and aim to uncover the mechanism. To move beyond correlative studies, the work will combine transplant experiments and population genomics. We will build on our previous research in *Arabidopsis arenosa* model that demonstrated that WGD can increase the capacity of natural populations to accumulate adaptive variation. This project will extend to additional plant species in order to discern generality.

The successful applicant will join a multidisciplinary team of Ecological Genomics lead by Filip Kolář and will interact with international collaborators Prof. Christian Parisod (Univ. Bern, CH) and Prof. Levi Yant (Univ. Nottingham, UK). The position will be funded by a new ERC Starting Grant DOUBLE ADAPT.

The potential range of methodologies will be

- fieldwork in natural populations and ploidy screening using flow cytometry
- transplant experiments addressing adaptive response towards model stress environment (challenging soil)
- experiments with experimentally synthesized polyploid lineages to isolate the net effect of WGD
- inference of selection in genomes of natural and experimental populations

We offer

- creative and supporting atmosphere in international team of Ecological Genomics
- monthly salary of ~1000 EUR net, competitive within the city of Prague (with subsequent rise with the progress of the study duties)
- additional experience through international collaboration
- work in the historical centre of a vibrant cultural Prague city

We require

- strong motivation for interdisciplinary research at the border of ecology, evolutionary biology and population genetics
- a MSc degree in Biology or related fields (in summer 2020 at the latest)

Desirable but not required

- experience with design and evaluation of ecological experiments
- background in population genetics/experience with processing high-throughput sequence data
- experience with fieldwork and flow cytometric analyses

Please send your CV, contact details for two referees and a half-page motivation letter to Filip Kolář (filip.kolar@natur.cuni.cz). Review of the applications will begin on **February 28th 2020** and will continue until the position has been filled. The exact start date is negotiable.