

PhD Position in Polyploid speciation in plants

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<https://botany.natur.cuni.cz/ecolgen>

Genome duplication is a dominant force in sympatric speciation but our recent investigations demonstrated that the barrier posed by doubled genome is leaky. Yet mechanisms allowing genome permeability between individuals of different ploidy and its evolutionary consequences remain elusive. In this project, we aim at dissecting mechanism of ploidy-related crossing barrier, testing its conservation across different flowering plant species and inferring role of selection in shaping inter-ploidy gene flow in natural populations. The results can shift our perception of polyploidy towards speciation-with-gene-flow scenarios.

The successful applicant will join the multidisciplinary team of Ecological Genomics at Charles University in Prague lead by Filip Kolář. The work will be done in close collaboration with Clément Lafon Placette (Charles Univ., <https://lab-alliance.natur.cuni.cz/plantreproevo>) and Mario Vallejo Marin (University of Stirling, UK, <http://www.plant-evolution.org>).

The main focus of the work will be

- fieldwork in natural populations and ploidy screening using flow cytometry
- crossing experiment addressing range of barriers against gene flow between individuals of different ploidy
- addressing parallelism in the mechanism of triploid block using transcriptomic analysis (RNAseq) and confocal microscopy of seeds
- population genomic investigations of gene flow in natural populations (analysis of genome-wide variation by genome resequencing)

We offer

- creative and supporting atmosphere in closely interacting Ecological Genomics and Plant Reproduction Evolution Labs
- monthly salary of ca 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
- good background in population genetics/experience with processing high-throughput sequence data
- experience with fieldwork and flow cytometric analyses
- background in developmental/molecular biology

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 start date is negotiable.