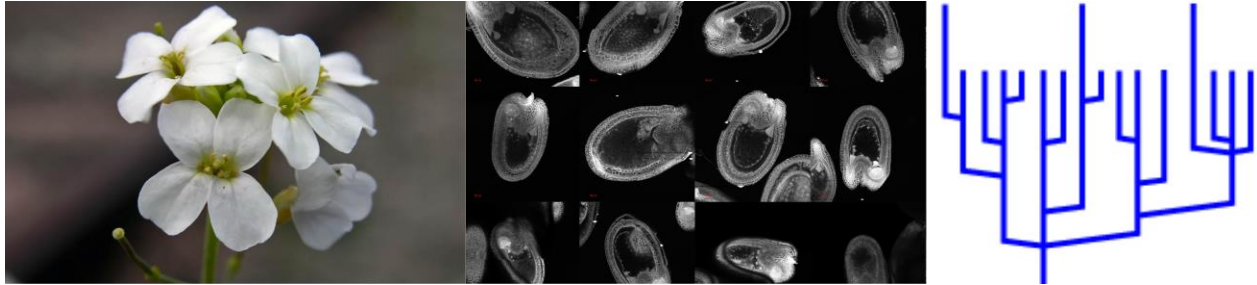




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Sexual selection and plant speciation: from micro- to macroevolutionary scales



An interdisciplinary PhD project is available under the joint supervision of the Plant Repro Evo Lab (<https://lab-allience.natur.cuni.cz/plantreproevo>) and Machac Lab (<https://machac.weebly.com>) at Charles University & Czech Academy of Sciences in Prague.

How sexual selection generates new species remains among the fundamental puzzles in evolution. Classic theory postulates that sexual selection produces divergence in sexual traits which, eventually, translates into reproductive barriers and large-scale speciation. Plants present excellent opportunities to test and extend the theory, given that sexual selection has been studied extensively at the gametic level in plants (competition between male pollen grains and female choice mediated by the flower stigmas and ovules). However, the genomic basis of sexual selection and its large-scale influence on plant speciation have yet to be examined.

The PhD project will bridge these gaps in current knowledge by integrating research from micro- and macroevolution. The microevolutionary research will involve developmental biology, transcriptomics and population genomics. Specifically, the student will evaluate genetic and phenotypic differentiation in sexual traits across several *Arabidopsis* species, using microscopy and bioinformatics techniques. The macroevolutionary research will examine whether sexual traits (floral traits, pollination mode, etc.) translate into large-scale speciation in plants, using statistical techniques. By bridging two traditions in evolutionary research (micro- and macro-), the project will produce an integrative perspective on sexual selection and speciation. In the process,



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it will equip the PhD student with theoretical and practical skills currently in high demand in academia and private sector (plant reproduction biology, genomic techniques, statistics, programming).

We are looking for PhD student with interest in multidisciplinary approaches, involving plant reproduction, genomics, and macroevolution. Previous experience in any of these fields is not required but will be beneficial. The project is supported jointly by the Department of Botany and the Center for Theoretical Studies (Charles University, Prague, Czech Republic) and combines the expertise from two related fields, under the supervision of Clément Lafon Placette (plant reproduction biology, genomics; <https://lab-allience.natur.cuni.cz/plantreproevo>) and Antonin Machac (macroevolution, macroecology; <https://machac.weebly.com/>).

The project is expected to start on October 1, 2019. It will be financed for four years. The salary together with the doctoral stipend provided by the university (starting \approx 800 EUR, with significant raise over the years) is equivalent to the average salary within Prague, which represents currently one of the most vibrant cities in Europe, with rich social life, large international community, and opportunities for collaborative research across multiple institutes and universities located in the city. If you are interested, please send us an email explaining your motivations and your CV at lafonplc@natur.cuni.cz before 15th of June.