

Bachelor thesis

How plants communicate - The molecules of love

School year	2024-2025	Workplace	Department of Experimental Plant Biology, Faculty of Science, Charles University; Institute of Experimental Botany of the CAS
Type of work	Bachelor thesis	Supervisor	Said Hafidh, Ph.D.
Language	Czech / English	Consultant	prof. RNDr. David Honys, Ph.D.

Preliminary work description

When plants conquered the land, they evolved **flowers and reproductive organs** to become successful. So how do you bring male and female gametes for **successful fertilisation “without talking”**? This involves a toolkit of **receptor proteins** and their **ligands** that many are yet to be discovered that mediate a **chemical communication** leading to successful fertilisation and **production of fruits and seeds**. The aim of this thesis is to systematically **explore the known regulators of cell-cell communications** in plant reproduction and compare with those **mechanisms in animal reproduction** to piece together a common theme as well as unique regulation between the two systems. Upon completion of the thesis, the elaborate knowledge gathered will not only **contribute to a better understanding of plant reproductive biology** which is important to **improve crop fertility**, but will also offer **lessons on areas of animal reproduction** that can be explored for more **successful animal fertility** studies.

Principles for a good thesis

The recipe for successful thesis are a **pure interest** in the subject, self **motivation** to survey, learn, write and defend the thesis as a proud product of your ground work. A basic **knowledge of plant biology is helpful** but not a must. **Independence** to search for **new subject stimulus** (with the all-round support of the supervisor and consultant) and **open communications** with good **provoking ideas** are advantageous. The thesis will be based on a variety of literature, overwhelmingly in English, including relevant reviews. The Bachelor's thesis may be followed by an **experimental Master thesis** based on the stimulating ideas gathered. **Examples of theses** from our lab: <http://www.pollenbiology.cz/team/>.

Scientific literature

Original scientific articles and reviews in English, e.g. here: <http://www.pollenbiology.cz/publications/>.

We offer

Work in a young and inspiring team; the successful candidate may get a **position in** the Laboratory of Pollen Biology of the **Institute of Experimental Botany** of the CAS. This includes, e.g., the possibility to cover **conference** expenses (presentation of own results) and the chance to participate in **language courses** of the Language Department of the CAS. Financial support for the work on ongoing projects.

Contact

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