# Bachelor thesis

## *Time between transcription and translation - the grey zone of gene regulation in plants*

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| **School year** | 2023-2024 | **Department / Workplace** | Department of Experimental Plant Biology, Faculty of Science, Charles University; Institute of Experimental Botany of the CAS |
| **Type of work** | Bachelor thesis | **Supervisor** | prof. RNDr. David Honys, Ph.D. |
| **Language** | Czech / English | **Consultant** | Said Hafidh, Ph.D. |

### Preliminary work description

In plant cells, **post-transcriptional regulation** is a space for **fine modulation of gene expression** between transcription and translation that shapes the final phenotype of the organism. The aim of this thesis is to systematically map **mechanisms** such as mRNA processing including alternative splicing, mRNA stability and transport, and miRNA activity whose **diversity, complexity and plasticity** allow plants to respond to variable environmental conditions and **adapt to biotic and abiotic stresses**. The thesis will also focus on specific examples of gene regulation during growth, development and in response to stress. This knowledge will contribute to a deeper understanding of **plant developmental biology,** important for increasing plant resilience to environmental challenges and for use in agriculture.

### Principles for a good thesis

The prerequisites for a successful solution are a keen **interest** in the subject, **motivation** to write and defend the thesis and at least a basic **knowledge of plant biology**. **Independence** (which does not mean being left to one's own, but actively seeking and exploring new stimuli with the all-round support of the supervisor and consultant) and a willingness to learn new things and **openness to new approaches** 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 information gathered. **Examples of theses** from our lab are here: 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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