Universität Basel

Departement Umweltwissenschaften

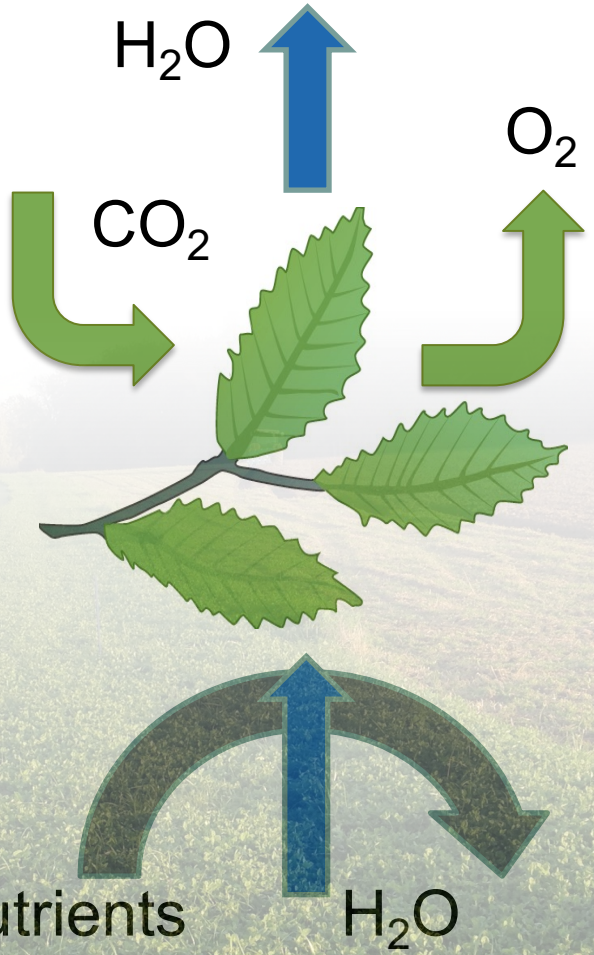
MSc Plant Science

Master's degree program at the Department of Environmental Sciences

Prof. Dr. Ansgar Kahmen & Prof. Dr. Klaus Schläppi

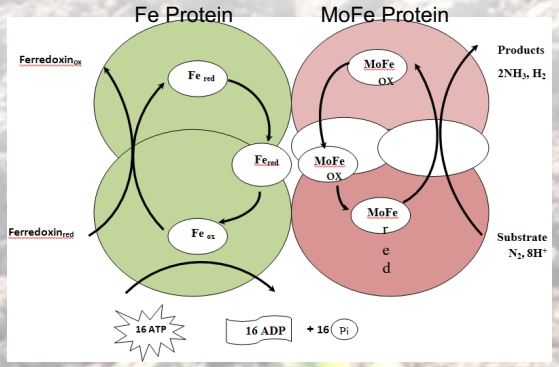
Introduction

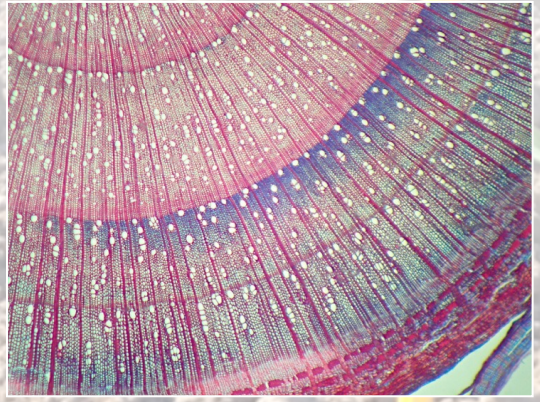
Plants are a critical for the existence and well being of humans

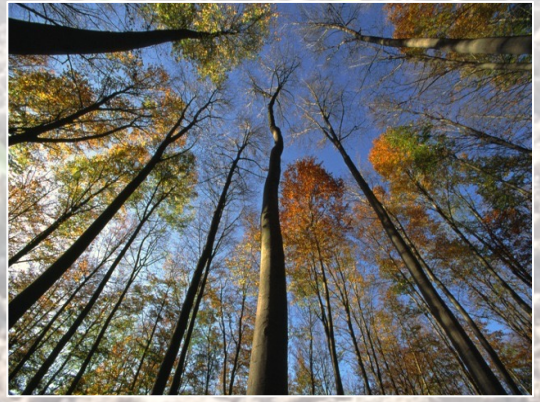


Introduction

- With the Master's degree program in Plant Science students develop a solid **theoretical and practical knowledge** of plant sciences.
- Students learn to carry out **research** and to work as professionals in all fields of plant science, ecology, agronomy or a related field.
- The program builds upon the strength of the Department in the areas of plant molecular biology, plant-microbe interactions, symbiosis, ecophysiology, ecosystem sciences and sustainable land use.







Admission

→ Master course in Plant Science for graduates with a background in biology (BSc in biology or equivalent)

→ Direct admission with a Bachelor of Science (BSc) in Biology from the University of Basel.

→ Other Swiss or foreign degrees from an education institution recognized by the University of Basel require approval by the examination commission of the Faculty of Science.

Curriculum

→ Duration: 3 to 4 semesters

→ Credits: 90 ECTS

→ Language: English

→ Start of program: preferably fall semester (spring semester is also possible)

→ Application deadline: 30 April (for fall semester)

Master Thesis	**50 ECTS**
Master Exam	**10 ECTS**
Lectures, Seminars and Excursions	**30 ECTS** (≥ 18 ECTS within the Plant Science MSc program)
Total Master Program	**90 ECTS**

Course Offerings

Lectures, seminars and excursions are offered on following topics:

→ Plant Physiology

→ Functional Plant Ecology

→ Plant-Microbe Interactions

→ Stable Isotopes in Ecology

→ Ecosystem Processes and Biogeochemistry

→ Sustainable Land Use

→ Tree and Forest Ecology

→ Global Change Biology

→ Scientific Writing and Communication

→ Applied Statistics

Master Thesis

Master theses are offered in the following research areas:

→ Physiological Plant Ecology

→ Ecosystem Sciences

→ Sustainable Land Use

→ Plant-Microbe Interactions

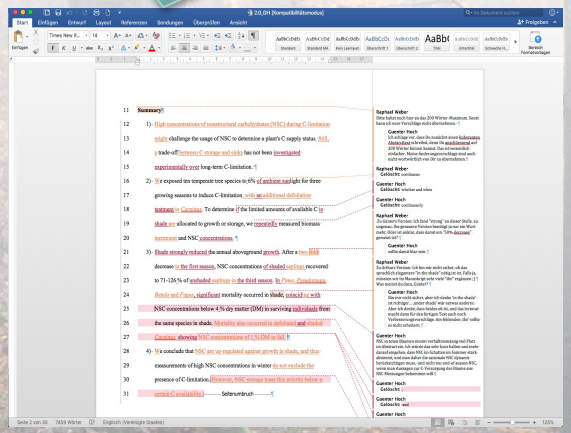
→ Alpine Plant Ecology

→ Plant Molecular Biology

Master Thesis

→ Master students in Plant Sciences have the opportunity to spend at least one year in our research group working on their own master project.

→ During this time master students experience the various facets of science starting with the design of their project, conducting the actual experiment including the collection of data, data analyses and interpretation and ultimately the summarizing the outcome of the master project in a written thesis.



Collaborations

Master projects can be in collaboration with other Swiss research institutions

agroscope — Swiss federal competence center for agricultural science

WSL — Federal institute for basic and applied environmental research

FiBL Forschungsinstitut für biologischen Landbau — International leader in research for organic agriculture

syngenta® — Syngenta has a thriving research center, particularly in the area of plant protection, in Stein (AG)

Career opportunities

→ After successfully completing their Master's degree the graduates can study further for a doctoral qualification or follow a profession in all fields of life sciences.

→ Biology is a subject that covers many disciplines and the career opportunities include research and related activities in the fields of medicine, biotechnology and pharmaceutical industries.

→ Numerous jobs are available for biology graduates, within the university and also in private industry, government service, schools and organizations, be it as researchers, communicators, teachers or advisors.

Further information

Visit our websites:

bio.unibas.ch/en/studies/msc-plant-science/

ppe.duw.unibas.ch/en/

duw.unibas.ch/de/pmi/

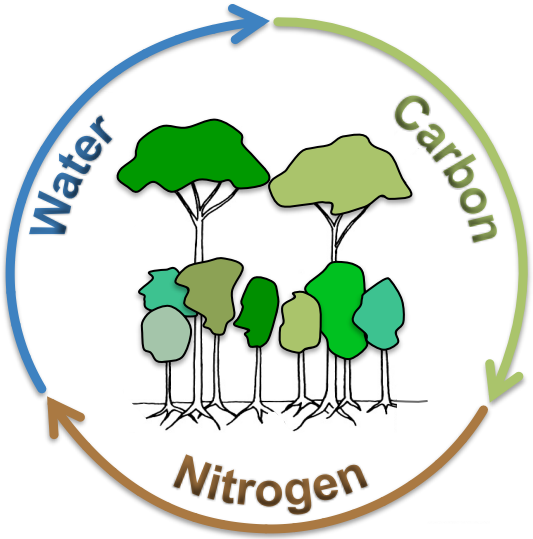
Contact the program supervisors:

- Prof. Dr. Ansgar Kahmen: ansgar.kahmen@unibas.ch
- Prof. Dr. Klaus Schläppi: klaus.schlaeppi@unibas.ch

Physiological Plant Ecology

Research interests

Prof. Dr. Ansgar Kahmen:
ansgar.kahmen@unibas.ch



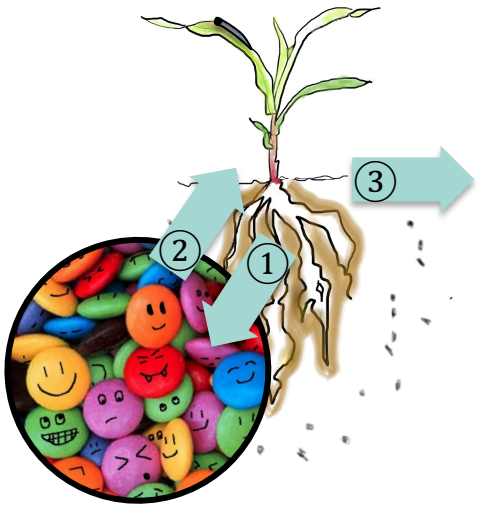
We investigate the ecophysiological processes in plants that determine the fluxes of water, carbon and nitrogen in natural and agricultural ecosystems. The goals of our research are

1) to understand how plants function in the context of their environment,
2) to reveal the responses of plants and ecosystems to global environmental change, and
3) to establish the ecophysiological and biogeochemical basis for the sustainable use ecosystems.

Plant Microbe Interactions

Research interests

Prof. Dr. Klaus Schläppi:
klaus.schlaeppi@unibas.ch



Rhizosphere &
root microbiomes

Plant - Microbiome Interactions:

1) Plant **communication to** their microbiota and taking influence on their activities ?

2) Microbiome's **contribution to** plant growth and health ?

3) How to **make use** of the plant microbiome for smart and sustainable agriculture ?

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Thank you
For your attention.

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