

The following position (full time) is now available at the Group of Dr. Kasper van Gelderen, Centre for Organismal Studies, Heidelberg University until filled:

Fully funded PhD position in Plant Cell- and Molecular Biology: The Cell Biology of phytochrome-B Photobodies

Do you want to work on cutting-edge basic plant science in a highly regarded institute? Dr. Kasper van Gelderen is looking for a PhD candidate to work in his newly Emmy Noether funded group '**Light Signaling and Cell Biology**' at the **Centre of Organismal Studies – Heidelberg University**. If you have an interest and passion for basic science and plant cell biology, this could be the position for you. This project will consist of advanced light microscopy, the investigation of liquid-liquid phase separation, and uncovering macromolecular complexes via biochemistry.

What is expected of you?

- MSc in molecular plant sciences or equivalent
- The ability to independently run and analyse experiments
- Experience with confocal microscopy
- basic molecular and biochemical lab skills (PCR, western blot, molecular cloning)
- *in vitro* plant growth experience

What is offered:

- An excellent working environment at a prestigious institute
- A salary according to DFG rates (65% of T-LV E13)
- An appointment for 4 years
- The possibility to obtain a PhD from the Heidelberg Biosciences International Graduate School.

Starting date: First Quarter 2023

Closing date of recruitment: 15/09/2022

To apply send a motivation letter and CV to: kaspervangelderren@photobodies.com

For more information about the position please contact Kasper van Gelderen by email:

kaspervangelderren@photobodies.com or on twitter: <https://twitter.com/GelderenKasper>

Project description:

Light perception and responses are essential for plant life and how light can be converted into a biochemical signal is a fundamental question in biology. Phytochromes are the main red light sensors in plants and phytochromes form small (~40nm) subnuclear bodies, which also contain supporting cofactors and downstream transcription factors. These subnuclear structures are called photobodies and they play an important role in regulating light responses. Despite their importance, it remains unclear how the formation of photobodies aids phytochrome signalling, how output specificity is achieved in response to divergent stimuli and how this information influences plant developmental decisions.

To understand this fundamental problem, we will investigate the formation and responses of photobodies to light and temperature using an integrated approach of imaging, biochemistry and a chemical screen. The project goals are to:

- 1) characterize the conditions of phytochrome B (phyB) photobody formation with high resolution live imaging. Record the changes during light and temperature responses and track the assembly of known cofactors into the photobody.
- 2) Decipher the composition of the phyB photobody complex by fluorescent sorting of photobodies and proximity labelling techniques, and investigating its biochemical properties.

3) Elucidate the biological relevance of photobodies by performing a chemical screen to discover photobody disrupting compounds.

These three goals will combine in plant cell biology, plant photobiology, plant development and biochemistry to uncover how and why a photobody forms.

The PhD candidate will work on one or two of these project goals, depending on personal preference and skills.

About Dr. Kasper van Gelderen

Kasper van Gelderen did a Biology Bachelor and Master at Wageningen University (The Netherlands) specializing on Cell Biology. He completed a PhD at the Developmental Genetics group of Prof. Remko Offringa in Leiden, the Netherlands, working on the subcellular regulation of PIN auxin efflux carrier polarity. More recently, he did two postdocs at the Plant-Environment signaling group of Prof. Ronald Pierik at Utrecht University, working on Far-Red light perception and shoot-root communication of light signaling. With this newly funded project he will combine these two backgrounds and expertise into Light Signaling and Cell Biology.

Centre for Organismal Studies:

The Centre for Organismal Studies (COS) Heidelberg aims to study organismic biology beyond the borders of organisational level. Research and teaching at COS is dedicated to study organismic biology from the basic molecular principles to cell biology, developmental biology and physiology both in plants and in animals and to further extend into evolution, biodiversity, systems biology and biotechnology.

Heidelberg University:

Heidelberg University is a comprehensive university with a strong research orientation and international standards. With around 30,000 students and 8,400 employees, including numerous top researchers, it is a globally respected institution that is also of outstanding economic importance for the Rhine-Neckar metropolitan region.

Heidelberg University stands for equal opportunities and diversity. [Qualified female candidates are especially invited to apply.](#) Disabled persons will be given preference if they are equally qualified.

Information on job advertisements and the collection of personal data is available at www.uni-heidelberg.de/en/job-market