REGISTRATION DETAILS

APPLICATION REQUIREMENTS

- Doctoral Students or advanced Master Students of Life and Natural Science and related economic fields
- English level B1 required
- Please note that the summer school will be held in English.

PRACTICAL DETAILS

- Deadline for binding registration: May 15, 2019
- Program fee: The Summer School is free of charge
- Food and drinks will be provided.
- Accommodation and transport have to be covered by the participants.

- Support is offered in the search for affordable accommodation.
- Public transport is available between Frankfurt/Wiesbaden/Geisenheim.
- A small number of mobility scholarships will be available.
- Registration: https://www.hs-geisenheim.de/en/research/junior-scientists/

CONTACT

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SUMMER SCHOOL CLIMATE CHANGE RESEARCH METHODS

Preparing for the future
Sept. 9 - 13, 2019

ISVV | université de BORDEAUX | Université franco-allemande Deutsch-Französische Hochschule | Geisenheim · Gießen · Marburg PROMOTIONS-PLATTFORM

www.hs-geisenheim.de/en/

PROGRAM

In order to understand how changes in one particular parameter (like gas concentration or temperature) might change the state of a plant, you first need methods to individually measure and analyze said parameter on the plant and eco-system in a reliable and reproducible way. This summer school introduces you to methods for measuring the impact of climate change on special crops.

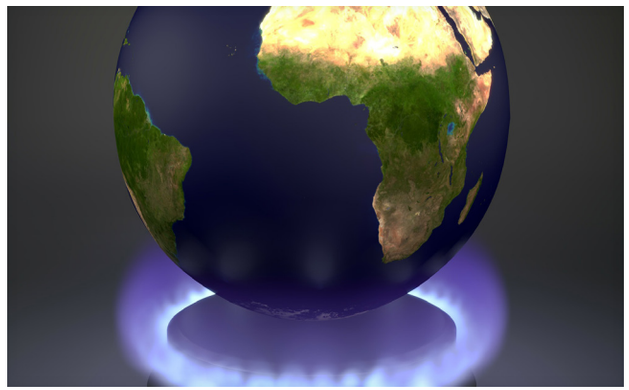
You will delve into topics such as the global carbon cycle and non-CO_2 greenhouse gas exchange between soils, plants and the atmosphere. The methodological spectrum covered in lectures and hands-on experiments ranges from various gas exchange measurement techniques, as well as the use of digital plants and statistical methods analyzing large datasets. In addition to these scientific methods, you will be introduced to different communication techniques applied to the special challenges of conveying climate change facts as well as other scientific results to a non-scientific community.

HOW DO PLANTS REACT TO CLIMATE CHANGE?

Learn about methods to measure and analyze responses in plants

METHODS

Climate change affects plants on an individual as well as an ecosystem level. Students will learn methods for studying effects on plant physiology and morphology through lectures and hands-on experiments with plants and in the field. On the plant level, several principles for measuring gas exchange of CO_2 and H_2O are used on species with different light adaptation characteristics; the effect of plant architecture on the complex interaction between morphology and physiology resulting in plant productivity is studied in silico. On the ecosystem level, students will get a theoretical and practical overview of production and flux of three of the most important greenhouse gases CO_2, CH_4 and N_2O in different managed ecosystems like fertilized vegetable production, woody crops and wetlands.



ANALYSES

Once you have collected your data, you need to make sense of it. Visualization of results with graphs and plots is a very efficient way to do that, but there are many different programs to choose from. Students will use some of the most common applications such as R, sigmaplot or MatLab to create publication-ready scientific plots. Another approach, called meta analysis, is to combine quantitative results from similar experiments and extract an overall effect that can provide a clearer picture of underlying processes.

SHOUT IT FROM THE ROOFTOP!

How to share your results with society

COMMUNICATION

Communicating your results and hypothesis is essential for transferring scientific knowledge not only to your peers but also into society. This is especially relevant when studying controversial subjects such as climate change. You will participate in an argumentation training on the myths and facts of climate change, learn about different communication channels and techniques, and prepare and PERFORM a science-slam gig on your PhD topic.

More detailed descriptions of the modules can be found at https://www.hs-geisenheim.de/en/research/junior-scientists/

EXTRACURRICULAR ACTIVITIES

- science slam
- picnic
- open air
- sunset walk