

## Beatrix Heinze

Position: PhD Student  
Project: A03  
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### Research Interests

- Carbon cycling
- Microbial ecology
- Metagenomics/ Metaproteomics
- <sup>14</sup>C Radiocarbon dating

### Current Project

PhD thesis, working title: “Ancient sediments drive modern microbial food webs”

Recent studies have shown that bacteria in carbonate-rock aquifers assimilate large quantities of <sup>14</sup>C-free carbon suggesting that ancient sedimentary rock C can sometimes be a major energy source. My doctoral research aims to give insights into the molecular composition of sedimentary organic matter deposited in the terrestrial subsurface and investigate the metabolic activities of microorganisms at the interface between rock and soil and rock and groundwater. Analytical methods like GC-MS and HPLC-MS will be applied to examine the molecular composition of biomarkers extracted from the sedimentary organic matter. Furthermore, accelerator mass spectrometry (AEM) will be used to relate the <sup>13</sup>C- and <sup>14</sup>C content of these biomarkers to specific microbe-derived molecules and combined with omics technologies to investigate the metabolic/genetic potential of the microorganisms.

### Curriculum Vitae

08/2020 – present: Doctoral Researcher, Institute of Biodiversity, FSU Jena & MPI-gBGC (“Ancient sediments drive modern microbial food webs”)

12/2019 – 06/2020: Student Assistant, Institute of Biodiversity, FSU Jena

10/2016 – 12/2019: M. Sc. Chemical Biology, FSU Jena (Thesis title: “Impact of autochthonous primary production on a groundwater microbial community”)

10/2013 – 09/2016: B. Sc. Biochemistry/ Molecular Biology, FSU Jena (Thesis title: “Lasso peptides from the endofungal bacterium *Burkholderia rhizoxinica*”)

## **Publications**

Bratovanov, E., Ishida, K., Heinze, B.M., Pidot, S.J., Stinear, P., Hegemann, J.D., Marahiel, M.A., and Hertweck, C. (2019) Genome Mining and Heterologous Expression Reveal Two Distinct Families of Lasso Peptides Highly Conserved in Endofungal Bacteria. *ASC Chem. Biol.*, 15, 5: 1169–1176

## **Conference contributions**

Heinze, B., Taubert, M., Jehmlich, N., von Bergen, M., Küsel, K. (2020) Survival at the interface of surface input and oligotrophic conditions in the deep biosphere – Goldschmidt Conference; 21 – 26 June in Virtual format. (Oral presentation)