



## Bettina Schaefer

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### Brief Summary

The End-Cretaceous Mass Extinction Event was one of the five largest mass extinction events in the Phanerozoic and the only one proven to be associated with a meteorite impact. The impact crater at Chicxulub in Mexico is the largest terrestrial crater with a peak ring and a global ejecta area. For the first time the peak ring of the crater has been drilled by the Integrated Ocean Drilling Program (IODP) 364 drilling expedition "*Chicxulub: Drilling the K-T Impact Crater*" in April – May 2016.

For this study samples are analysed for molecular fossils using organic and isotopic geochemistry parallel to a molecular biological approach. The coupling of the obtained paleogenomic and deep subsurface microbiome datasets with organic, isotopic, and general geochemistry data in context of geological data (provided by collaborators) will contribute to a deeper understanding of environmental factors that control life in the deep biosphere, its ability to recover and evolve after major extinction events, and the possibility of life to form beyond Earth.

**Education:** BSc, MSc - Goethe University Frankfurt, Germany

**Research interests:** Organic Geochemistry, Mass Extinctions, Molecular Ecology, Deep Biosphere

**Thesis title:** The End Cretaceous Mass Extinction Event – Recovery and Evolution of Life

**Supervisors:** Prof Kliti Grice, A/Prof Marco J. M. Coolen

**Publications:**

Schaefer, B., et al. (2020). "Microbial life in the nascent Chicxulub crater." [Geology](#).

**Conferences:**

Astrobiology Australasia Meeting, 2016, Perth, Australia (poster)

TIGeR Conference, 2016, Perth, Australia (poster)

19<sup>th</sup> Australian Organic Geochemistry Conference, 2016, Fremantle, Australia (oral)

28<sup>th</sup> International Meeting on Organic Geochemistry, 2017, Florence, Italy (oral)

Australian Geoscience Council Convention, 2018, Adelaide, Australia (oral & poster)

20<sup>th</sup> Australian Organic Geochemistry Conference, 2018, Canberra, Australia (oral)