



Analytical techniques and equipment:

- Internationally renowned stable isotope laboratory with focus on palaeoclimate and palaeoenvironmental reconstructions
- One-of-a-kind collection of carbonate thin sections, fossil preparation and thin section laboratory and a wide range of microscope imaging facilities
- Micro-computed tomography for 3D and non-invasive analysis of specimens
- Ultrastructural studies on biomineralisation and diagenesis, including cathodoluminescence, scanning electron microscopy, electron backscatter diffraction (EBSD) and energy-dispersive X-ray spectroscopy (EDX)
- Hydrochemical laboratory for environmental analyses
- Sclerochronology for palaeoclimate and biomineralisation studies (MicroMill)
- Global biodiversity analyses involving e.g. Paleobiology Database and PaleoReefs Database (hosted in Erlangen)
- Intensive field-based training and multiple fieldwork opportunities

About Erlangen

FAU is located in northern Bavaria, in the south of Germany. According to the Reuters Ranking 2016, it is the second most innovative university in Germany. In the „Shanghai Ranking“ (Academic Ranking of World Universities, 2016), FAU belongs to the top 200 universities worldwide, and the Faculty of Natural Sciences is among the top 100 in the world.

There is no tuition fee for the Master in Geosciences programme and there are multiple opportunities for students to support themselves during their stay in Germany through scholarships and part-time jobs as student research assistants and outside University. FAU also provides free German courses for its students.

More information:

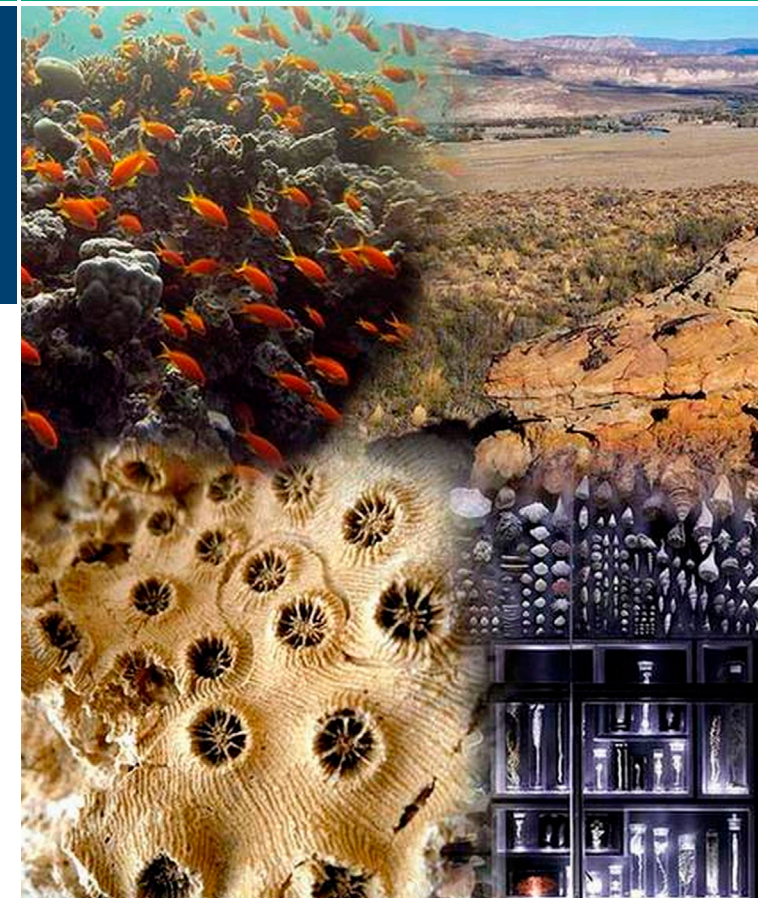
www.palaeobiology.de
www.fau.eu/study/prospective-students/

For enquiries please contact

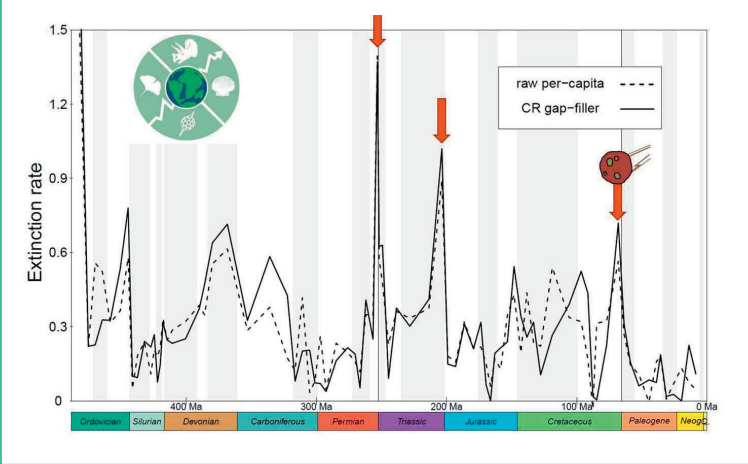
Dr. Emilia Jarochovska

Friedrich-Alexander-University Erlangen-Nuremberg
Loewenichstr. 28, 91054 Erlangen
Emilia.Jarochovska@fau.de
Phone +49 9131 85 22967

International Master in Geosciences Palaeobiology Earth Systems Research Lab



Herausgeber: Marketing der FAU; Fotos: J. Barth, E. Jarochovska, M. Joachimski, G. Pöhlein, W. Kießling;
verantwortlich für den Inhalt: Dr. Emilia Jarochovska



Research highlights:

- Macroevolution and the relative contributions of biotic interactions (e.g., symbiosis, parasitism) and abiotic factors (e.g., climate) in driving macroevolutionary patterns
- Biodiversity dynamics, modelling and prediction
- Marine ecosystems with emphasis on coral reefs
- Carbonate rocks as archives of palaeoenvironmental and palaeoclimate change
- Stratigraphic palaeobiology and sequence stratigraphy
- Reconstruction of palaeoenvironments
- Integration of processes at multiple time scales: from deep-time to Recent

Career perspectives in palaeobiology:

- Universities and research institutions
- Research funding, policy and administration
- Museums and geoparks
- Conservation biology
- Scientific publishing houses, editorial offices, media
- Extractive industry and geological surveys
- Science popularisation



Master in Geosciences at FAU includes two fields of study:

- **Palaeobiology** – which provides theoretical framework in macroevolution, ecology, palaeoenvironmental reconstruction and statistical analysis
- **Earth Systems Research Lab** – which consists of individual field- and specimen-based projects and provides students with skills such as preparation of funding applications, scientific writing and communication, as well as environmental and geochemical background for interdisciplinary collaborations

Goals of the programme:

The acute theme of global climate change and its impact on organisms and ecosystems requires a new generation of scientists. We provide theoretical concepts of macroecology and macroevolution, as well as statistical techniques and scientific programming in palaeobiology. The second pillar of this specialisation is the reconstruction of fossil environments and their local and global controls. We focus on carbonate systems, which are the result of the metabolic activity of organisms and thus reflect the interplay of the biosphere and the earth-system at large. Our goal is to help students become internationally competitive in palaeobiology and science-related fields.

The Masters programme consists of four semesters with 30 credit points (ECTS) each. In addition to compulsory courses, students can choose supplementary activities, including language classes or additional field excursions. The last semester is dedicated to the Masters thesis. Supplementary courses (SC) include field trips, language courses, and transferable skills.

Semester ECTS	Palaeobiology-Palaeoenvironments			Earth Systems Research Lab		SC
	Morphology, systematics and ecology of invertebrates	Systematics, ecology and biostratigraphy of microfossils Methods of biostratigraphy	Microfacies analysis and diagenesis of carbonate rocks	Sedimentary geochemistry	Palaeobiology seminar Research project design	
1	30					
2	30	Macroevolution Introduction to phylogenetic analysis Proxies in palaeoenvironmental reconstructions	Analytical palaeobiology	Tracers, isotopes & natural attenuation	Literature seminar Research project implementation	
3	30	Laboratory methods in palaeontology	Hypothesis testing in palaeobiology Oceanography	Data mining and analysis in Earth System research	Science communication	
4	30	Master thesis in Palaeobiology				