GREGOR MATHES

Gregor Mathes is a PhD student and analytical palaeontologist at the University of Bayreuth and Friedrich-Alexander University Erlangen-Nuremberg. His research interests include conservation palaeontology, analytical macroecology, and data science. He applies novel statistical tools to the fossil record to gain insights about Earths history. Using this information about the past, he focuses on the conservation of recent biodiversity under current climate change. A big ambition in Gregor Mathes work is the use and creation of free and open software.

View this CV online with links here

CONTACT

- ✉ gregor.mathes@uni-bayreuth.de
- 🐦 Twitter
- ⌬ Github
- 🔗 My Website
- in Linkedin

LANGUAGE SKILLS

R	
Markdown	
Bash	
C++	
Python	
SQL	
Stan	

🎓 EDUCATION

Current | 2019

PhD. Candidate, Analytical Palaeobiology
University of Bayreuth   📍 Bayreuth

- Working on climate-biodiversity interactions using mixed effect regression models and machine learning algorithms
- Additionally contributing to various research projects of other team member covering sports ecology, macroecology, and geology. Providing help for programming, statistics, and data visualisation
- Uni-Website[1]

2019 | 2018

M.Sc., Analytical Palaeobiology and Earth System Research lab
Friedrich-Alexander University Erlangen-Nuremberg   📍 Erlangen

- Thesis: The effect of palaeoclimate interactions on the extinction risk of organism
- Focus on statistics, programming, and academic skills
- Uni-Website[2]

2018 | 2013

B.Sc., Geoscience
Friedrich-Alexander University Erlangen-Nuremberg   📍 Erlangen

- Thesis: Diagenesis of Halimeda
- Focus on palaeobiology, applied sedimentology, and geochemistry/ petrology

2013 | 2005

Abitur
Hans-Sachs Gymnasium Nuremberg   📍 Nuremberg

- Thesis: Die Alpen - Paradebeispiel plattentektonischer Prozesse
- Focus on German, Mathematics, English, History, and Physics

📄 PUBLICATIONS

2021

Extinction risk controlled by interaction of long-term and short-term climate change

Nature Ecology and Evolution

· **Gregor H. Mathes**, Jeroen van Dijk, Wolfgang Kiessling, Manuel J. Steinbauer
· Read the paper here[3]

2021

Outdoor cycling activity affected by COVID-19 related epidemic-control decisions

Plos one

· Anne-Maria Schweizer, Anna Leiderer, Veronika Mitterwallner, Anna Walentowitz, **Gregor H. Mathes**, Manuel J. Steinbauer
· Read the paper here[4]

2021

Deep-time climate legacies affect origination rates of marine genera

PNAS

· **Gregor H. Mathes**, Wolfgang Kiessling, Manuel J. Steinbauer
· Read the paper here[5]

2021

Siberian Trap outgassing triggered five million years of elevated atmospheric CO_2

Geology

· Michael Joachimski, Johann Müller, Daoliang Chu, Timothy Gallagher, Vladimir Silantiev, Fedor Mouraviev, Yadong Sung, **Gregor H. Mathes**, J. Tong
· In review

2021

Benthic foraminifera as bioindicators for assessing reef condition in Kāneʻohe Bay, Oʻahu, Hawaiʻi

Pacifc Conservation Biology

· **Gregor H. Mathes**, Manuel J. Steinbauer, Laura Cotton
· In review

☁ SOFTWARE DEVELOPMENT

2020

CPNR

Conservation Paleobiology Symposium

· R package to access CPN tutorials via R
· website[6]

A big ambition in my work is the use and creation of free and open software.

2020   **fotofallen – TensorFlow Model**

Bayerische Landesanstalt für Wald und Forstwirtschaft   📍Freising

· Convolutional Neural Network for image classification of camera trap images

📖 SELECTED POSTERS AND TALKS

2021   **Deep-time climate legacies affect origination rates of marine genera**

Crossing the Palaeontological – Ecological Gap

· Online conference
· HTML slides[7]

2021   **Cascading palaeoclimate interactions affect origination rate of marine genera**

International Meeting of Early-stage Researchers in Palaeontology

· Online conference
· HTML slides[8]

2020   **Marine origination rates linked to interactions of past temperature trends with short-term climate change**

Palaeontological Association Annual Meeting

· Online conference
· HTML version of the poster[9]

2020   **Extinction risk controlled by climate interactions**

BayCEER Workshop 2020

· Online conference

2020   **Biodiversity turnover controlled by interaction of long-term and short-term climate change**

YOMOS 2020

· Online conference

2020   **Extinction risk controlled by interaction of long-term and short-term climate change**

Conservation Paleobiology Symposium   📍University of Bologna

· A talk on the first project in my PhD schedule

2019   **A novel approach to define evolutionary units in Phanerozoic reefs**

Conservation Paleobiology Symposium   📍University of Würzburg

· A talk about a project from my master program

2018

Anthropogenic impacts on benthic foraminiferal assemblages, Oahu, Hawaii

Forams 2020

📍 University of Edinburgh

· A poster presentation at my first academic conference.

💼 INDUSTRY EXPERIENCE

Current | 2019

Lecturer

Hanns-Seidel Stiftung

📍 Kloster Banz

· Lecturer for one week workshops covering topics such as mass extinctions or climate change

2019 | 2018

Data Warehouse Solution

Friedrich-Alexander University Erlangen-Nuremberg

📍 Erlangen

· Created a data base for the thin section collection of the Faculty Palaeobiology
· Data base environment based on WissKI

🖥️ TEACHING EXPERIENCE

Current | 2020

Lecturer

Friedrich-Alexander University Erlangen-Nuremberg

📍 Erlangen

· Served as TA for foraminifera lecture in the microfossils course 2020 of the master program "Analytical Palaeobiology"

2021

Lecturer

University of Bayreuth

📍 Bayreuth

· Served as TA for analytical palaeobiology, providing both lectures and practice courses for graduate students from various departments in Bayreuth

2019

Lecturer

Friedrich-Alexander University Erlangen-Nuremberg

📍 Erlangen

· Served as TA for foraminifera lecture in the microfossils course 2019 of the master program "Analytical Palaeobiology"

I am a member of the Conservation Paleobiology Network and currently chair of the training series sub-committee. I am a private lecturer at the Hanns-Seidel-Stiftung e.V. providing talks and classes on climate change and Earths system.

2019
|
2017

Lecturer
Friedrich-Alexander University Erlangen-Nuremberg   📍 Erlangen

- Invited talks on carbonate microfacies during the internationally renowned Flügel-Course[10]
- Focus on foraminifera and thin sections

⭐ SELECTED AWARDS AND HONORS

2020

Best Talk Award – Third Prize
Bayreuther Zentrum für Ökologie und Umweltforschung (BayCEER)
📍 Bayreuth

- Young researcher award. Presentation title: Extinction risk controlled by climate interactions

2020

Best student talk
Conservation Paleobiology Symposium   📍 Bologna

- Presentation title: Extinction risk controlled by interaction of long-term and short-term climate change

2019

Master thesis with distinction
Friedrich-Alexander University Erlangen-Nuremberg   📍 Erlangen

- Awarded for master theses with an overall grade below 1.2

2019

Invited talk on carbonate microfacies
Friedrich-Alexander University Erlangen-Nuremberg   📍 Erlangen

- Invited talk at the international course on carbonate microfacies about foraminifera and their applications

2018

Winner of the 1st FAU International Science Slam
Friedrich-Alexander University Erlangen-Nuremberg   📍 Erlangen
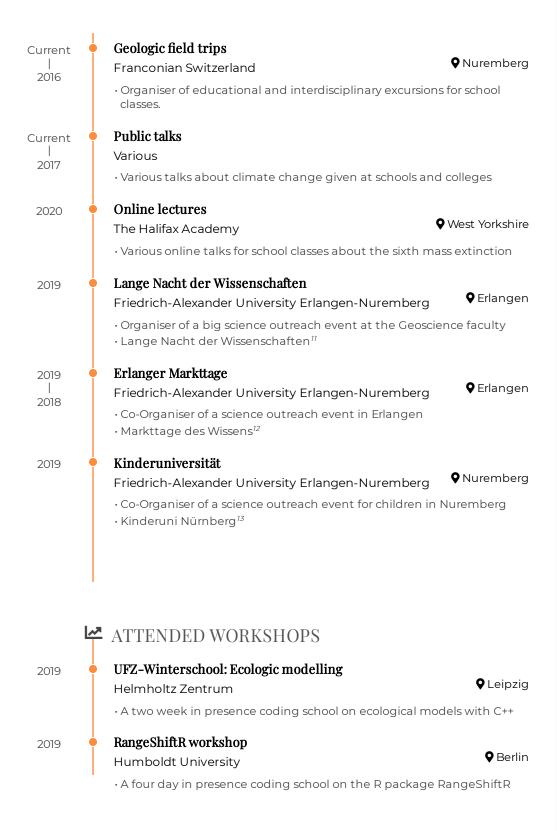
- The Faculty of Sciences hosted FAU's first International Science Slam. Presentation title: Warning: the following presentation may contain foraminifera

💬 SCIENCE OUTREACH

Trying to make my reseach accessible and public, I am engaging in various open science efforts. Please feel free to contact me if you want me to come to your school, company, or conference.

Geologic field trips

Current | 2016

Franconian Switzerland

📍 Nuremberg

· Organiser of educational and interdisciplinary excursions for school classes.

Public talks

Current | 2017

Various

· Various talks about climate change given at schools and colleges

Online lectures

2020

The Halifax Academy

📍 West Yorkshire

· Various online talks for school classes about the sixth mass extinction

Lange Nacht der Wissenschaften

2019

Friedrich-Alexander University Erlangen-Nuremberg

📍 Erlangen

· Organiser of a big science outreach event at the Geoscience faculty
· Lange Nacht der Wissenschaften[11]

Erlanger Markttage

2019 | 2018

Friedrich-Alexander University Erlangen-Nuremberg

📍 Erlangen

· Co-Organiser of a science outreach event in Erlangen
· Markttage des Wissens[12]

Kinderuniversität

2019

Friedrich-Alexander University Erlangen-Nuremberg

📍 Nuremberg

· Co-Organiser of a science outreach event for children in Nuremberg
· Kinderuni Nürnberg[13]

📈 ATTENDED WORKSHOPS

UFZ-Winterschool: Ecologic modelling

2019

Helmholtz Zentrum

📍 Leipzig

· A two week in presence coding school on ecological models with C++

RangeShiftR workshop

2019

Humboldt University

📍 Berlin

· A four day in presence coding school on the R package RangeShiftR

2018 ● **International Course on Organofacies Analysis**
Friedrich-Alexander University Erlangen-Nuremberg ⬤ Erlangen
· A five day in presence workshop on organofacies analysis using
  microscopy techniques.

🔗 LINKS

 1: https://www.spowi5.uni-bayreuth.de/de/team/Mathes/index.php
 2: https://www.gzn.nat.fau.de/palaeontologie/team/assoziierte-wissenschaftler
    /gregor-mathes/
 3: https://rdcu.be/cdMkz
 4: https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0249268
 5: https://www.pnas.org/content/118/36/e2105769118
 6: https://ischi94.github.io/cpnr/
 7: https://gregor-mathes.netlify.app/slides/cpeg/2021_09_08_cpeg#1
 8: https://gregor-mathes.netlify.app/slides/2021_05_20_imerp
 9: http://htmlpreview.github.io/?https://github.com/Ischi94/palass-poster/blob
    /main/poster-mathes.html
10: https://www.gzn.nat.fau.eu/palaeontology/outreach/flugel-course/
11: https://www.nacht-der-wissenschaften.de/
12: https://www.275.fau.de/2018/06/09/markttage-des-wissens-mai-und-juni-2018/
13: https://www.nuernberg.de/internet/kuf_kultur/kinderuni.html