

# 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 Earth's 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](#)

## 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<sup>7</sup>

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<sup>2</sup>

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

## CONTACT

 [gregor.mathes@uni-](mailto:gregor.mathes@uni-bayreuth.de)

[bayreuth.de](http://bayreuth.de)

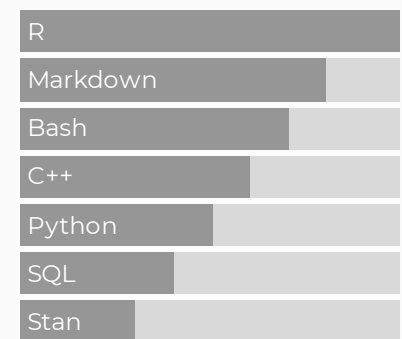
 [Twitter](#)

 [Github](#)

 [My Website](#)

 [in LinkedIn](#)

## LANGUAGE SKILLS



*Last updated on 2021-05-12.*



## PUBLICATIONS

2021

### **Siberian Trap outgassing triggered five million years of elevated atmospheric CO<sub>2</sub>**

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 Kaneohe Bay, O'ahu, Hawai'i**

Pacific Conservation Biology

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

2020

### **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](#)<sup>3</sup>

2020

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

PeerJ

- Anne-Maria Schweizer, Anna Leiderer, Veronika Mitterwallner, Anna Walentowitz, **Gregor H. Mathes**, Manuel J. Steinbauer
- [Read the paper here](#)<sup>4</sup>



## SOFTWARE DEVELOPMENT

2020

### **CPNR**

Conservation Paleobiology Symposium

- R package to access CPN tutorials via R
- [website](#)<sup>5</sup>

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

- 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<sup>6</sup>
- 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

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

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"

2019  
|  
2017

### Lecturer

Friedrich-Alexander University Erlangen-Nuremberg

📍 Erlangen

- Invited talks on carbonate microfacies during the internationally renowned Flügel-Course<sup>7</sup>
- 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

- Current  
|  
2016

● **Geologic field trips**  
 Franconian Switzerland  
 📍 Nuremberg

  - Organiser of educational and interdisciplinary excursions for school classes.
- Current  
|  
2017




● **Public talks**  
 Various

  - Various talks about climate change given at schools and colleges
- 2020

● **Online lectures**  
 The Halifax Academy  
 📍 West Yorkshire



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

Trying to make my research 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.

- 2019 • **Lange Nacht der Wissenschaften**  
Friedrich-Alexander University Erlangen-Nuremberg  Erlangen
- Organiser of a big science outreach event at the Geoscience faculty
  - Lange Nacht der Wissenschaften<sup>8</sup>
- 2019 | 2018 • **Erlanger Markttage**  
Friedrich-Alexander University Erlangen-Nuremberg  Erlangen
- Co-Organiser of a science outreach event in Erlangen
  - Markttage des Wissens<sup>9</sup>
- 2019 • **Kinderuniversität**  
Friedrich-Alexander University Erlangen-Nuremberg  Nuremberg
- Co-Organiser of a science outreach event for children in Nuremberg
  - Kinderuni Nürnberg<sup>10</sup>



## ATTENDED WORKSHOPS

- 2019 • **UFZ-Winterschool: Ecologic modelling**  
Helmholtz Zentrum  Leipzig
- A two week in presence coding school on ecological models with C++
- 2019 • **RangeShiftR workshop**  
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/assozierte-wissenschaftler/gregor-mathes/>
- 3: <https://rdcu.be/cdMkz>
- 4: <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0249268>

- 5: <https://ischi94.github.io/cpnr/>
- 6: <http://htmlpreview.github.io/?https://github.com/Ischi94/palass-poster/blob/main/poster-mathes.html>
- 7: <https://www.gzn.nat.fau.eu/palaeontology/outreach/flugel-course/>
- 8: <https://www.nacht-der-wissenschaften.de/>
- 9: <https://www.275.fau.de/2018/06/09/markttage-des-wissens-mai-und-juni-2018/>
- 10: [https://www.nuernberg.de/internet/kuf\\_kultur/kinderuni.html](https://www.nuernberg.de/internet/kuf_kultur/kinderuni.html)