

# PaleoSynthesis

## Newsletter 09/2020



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### Preface

Welcome to **PaleoSynthesis** and thank you for your interest in our project. You may receive many newsletters but we hope that ours is special. Should you not be interested in further newsletters, just unsubscribe.

We are all facing new challenges with the Covid-19 crisis and among them is how to organize workshops and conferences in the future. This is especially relevant because workshops and summer schools are central to our project and the first [call for proposals](#) is already out (deadline October 15, 2020). We will work with participants to ensure everyone's safety while continuing to deliver strong educational and scientific outputs.

[Wolfgang & Manuel](#)



**Introduction** The PaleoSynthesis project commenced last October. With funding from the [Volkswagen Foundation](#) our overarching goal is involving the entire community; we want to make paleontology reach a new level in terms of strategic development and international collaboration.

Our activities in the first 10 months included the election of a Scientific Advisory Board. The board will evaluate workshop proposals and is involved in the recruitment of postdocs. Advisory Board Members are introduced below.

### Contact person

Hi, I am [Barbara](#).

Originally, I am a paleontologist that started working on Jurassic gastropods from the Northern Calcareous Alps (Bavaria, Germany) for the diploma and the thesis mapping. I then continued to work in the Upper Carboniferous for my PhD. The Buckhorn Asphalt Quarry Lagerstätte was my new "home" and



the research involved a broad spectrum of topics ranging from, e.g., isotope studies of bioerosion in molluscs or predation on cephalopods.

Finishing my PhD thesis in 2012, I was able to continue research with a grant by the FAU to study bioerosion in *Nautilus* shells before stepping back in time again. My last project focused on the Late Paleozoic Ice Age, and especially on the Finis Shale of Texas.

Now I am excited to be in charge of the logistics and monitoring of the PaleoSynthesis project.

## Our PostDoc - your scientific contact



My research interests include paleoecology and conservation paleobiology. I was first drawn to paleontology by molluscan predator-prey interactions and this continues to be one focus of my research. During my PhD at Cornell University, I studied the molluscan community in the Colorado River estuary, with an emphasis on understanding how interactions and struc-

ture in the community changed due to recent human actions.

**Scientific Advisory Board** The [advisory board](#) is one of the major components of our project. We have seven great experts on the board including young and experienced scientists with an even gender balance. In the following the board members introduce themselves.



### **Kenneth de Baets**

*Research Assistant, Friedrich-Alexander University Erlangen-Nuremberg*

I am interested in a broad range of topics integrating fossil evidence into studies on developmental, ecological and evolutionary questions. My research is focused on macroevolution, particularly on the relative contribution (e.g., parasitism) and abiotic factors (e.g., climate) in driving large-scale evolutionary patterns. Other interests are quantitative methods in paleontology, paleobiology and stratigraphy more generally. My main tools for these purposes are cephalopods and parasitic helminths, but I also work on variety of other invertebrates and vertebrates. I am committed to make our community more diverse and our research more open.



### **Mike Benton**

*Professor of Vertebrate Paleontology, University of Bristol, UK*

I worked on databases and macroevolution of fossil vertebrates for some time and am particularly interested in Triassic tetrapods, the end-Permian mass extinction and the origin of dinosaurs. Currently, I am working with my postdocs and PhD students in two funded projects, one on recovery from the end-Permian mass extinction (NERC) and another on the drivers of macroevolution based around tetrapod phylogeny (ERC Advanced). In particular I am interested in the application of phylogenetic comparative methods and Bayesian modelling approaches to exploring questions around drivers of evolution, scaling and rates of events, and selectivity of

mass extinctions. So far I supervised more than 75 PhD students.

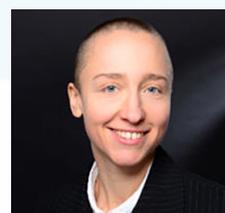
[Jansen](#)



### **Melanie Hopkins**

*Associate Curator, Division of Paleontology & Richard Gilder Graduate School, AMNH, New York, NY, USA*

I am an Associate Professor and Associate Curator of Invertebrate Paleontology at the AMNH whose research focuses on patterns and processes of morphological evolution, including the roles of both development and ecology in directing evolution over long time scales. I primarily work on trilobites but have also worked on other marine invertebrate groups. I did my Bachelor at Stanford University and my PhD at the University of Chicago.



### **Emilia Jarochowska**

*Research Assistant, Friedrich-Alexander University Erlangen-Nuremberg*

I am a palaeobiologist interested in two research fields: (1) stratigraphic palaeobiology, or the influence of the stratigraphic processes and architecture on biological informations; and (2) biomineralization in early vertebrates. I am dedicated to support ECRs and minorities in palaeobiology, in promoting palaeobiology and scientific literacy to the public, and in strengthening collaborations between palaeobiology and other disciplines.



### **Christian Klug**

*Curator at the University Zurich, Institute for Paleontology and Geology, Switzerland*

I am interested in the palaeobiology of cephalopods. Currently, I have research projects on the early evolution of nautiloids from the Cambrian to the Devonian and of gnathostomes from the Late Devonian. Together with my

workgroup, we analyse the palaeoecology mainly of Devonian ecosystems of the Devonian from macroecological processes to alpha diversity-studies. I am motivated to come up with new approaches to address palaeobiological questions in novel ways. Similarly, I like applying methods from other fields to fossil materials. Like Prof. Seilacher, I enjoy exploring other groups of organisms and trying out new methods together with my colleagues.



**Lee Hsiang Liow 廖瑤庠**

*Associate Professor at the NHM & Centre for Ecological and Evolutionary Synthesis, Department of Biosciences, University of Oslo, Norway*

I am a paleobiologist and evolutionary biologist. I have worked on the estimation of diversification rates using fossil data and developing approaches on inferring correlational and causal links between time series of origination and extinction rates and their putative abiotic drivers. A large part of my current research is focused on unravelling the evolutionary history of a group of marine colonial invertebrates, bryozoans, including dynamics

**Big Questions** Our “Call for Big Questions” resulted in contributions from > 70 paleontologists from more than 15 countries. Respondents selected the topics they perceived to be of utmost importance from a list including: Biodiversity Research, Biomineralization, Biostratigraphy, Climate Change Paleontology, Conservation Paleobiology, Drivers of Extinction, Growth and Development, Micro-/Paleoceanography, Phylogeny, Physiology, Stratigraphic Paleobiology, and Taxonomy. The most commonly selected topics were Climate Change Paleontology (19.4%), Conservation Paleobiology (16.5%), and Drivers of Extinction (16.0%), and Biodiversity Research (13.1%). Selection of these tightly connected topics reflects a broad interest in understanding how species, communities, and ecosystems change in response to abiotic and biotic factors. Respondents also submitted their own **Big Questions for research in Paleontology**. Using the same topics as above, the > 180 submitted questions were categorized most commonly as Biodiversity Research (29.5%), Conservation Paleobiology (16.9%), Climate Change Paleontology (9.8%), Phylogeny (9.8%), and Drivers of Extinction (8.7%).

**Workshops** Despite the Covid-19 crisis we have entered the workshop phase! These workshops will be run by the scientific community, that is, by **YOU!** So, tell us, what’s most important to you?

The Paleosynthesis Center will provide financial and scientific support as well as local logistics to host your workshop in Erlangen. **How to apply?** A template and full details on the application process are available on the [Paleosynthesis Center portal](#). Deadline for the proposals is October 15, 2020. Due to the corona crisis we kindly ask the applicants to submit solutions to be able to hold the workshop remotely if necessary.

of their overgrowth interactions in both the fossil record and Recent material. I am currently most interested in using life history traits to forge empirical and conceptual links between micro and macroevolution.



**Erin Saupe**

*Associate Professor of Palaeobiology, University of Oxford, UK*

My research addresses fundamental questions on the origin, maintenance, and conservation of biological diversity. I integrate biological data with information from the fossil record to elucidate the controls on community and species’ responses to environmental change across various spatial and temporal scales. The goal is to use these data to inform conservation decisions today, as part of the burgeoning field of conservation paleobiology. My research is generally question-, rather than methods-, driven, but I apply a diverse toolkit to investigating these lines of research, which includes quantitative techniques such as modelling, genetics, and environmental reconstructions.

Common, exemplar questions include, *How has biodiversity changed over time? How does life respond to changing climate? How can we use the past as context for the present and as a guide for the future? Can we use the fossil record to identify species at risk of extinction and ecosystems approaching tipping points? And, how have rates of speciation changed over time and what factors contribute to these changes?*

Several valuable considerations also emerged in the less populated categories (< 5%). For example, several respondents raised the issue that Paleontology would benefit from more study on fundamental issues relating to taxonomy and preservational bias. An “Other” category was included to capture questions that did not fit elsewhere. This category provided suggestions for integration of new methodologies to enhance the analytical rigor of Paleontology and greater reflection on community engagement and practices of diversity and inclusion. More conceptually, others addressed issues of data continuity relating to differences in scale. Each of these elements would make valuable contributions to workshops conducted by the Paleosynthesis Center.

