Thomas Laepple

Quantitiative interpretation of paleoclimate data

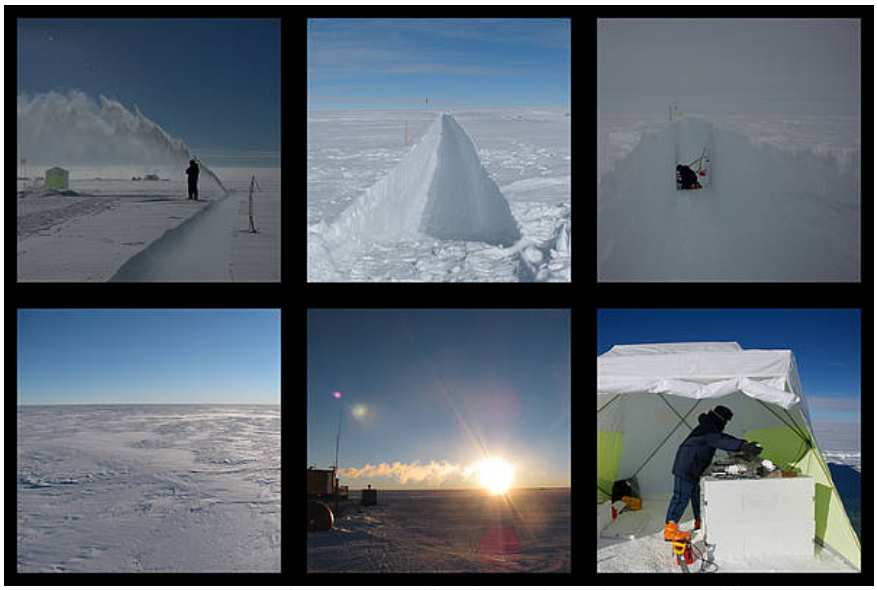
Thomas Laepple (Photo: Ergenzinger)

I enjoy to work across disciplines and to combine observational data, statistics and modeling. My current research focus is the estimation of climate variability and the mean temperature changes in the current warm period, the Holocene. This knowledge is relevant for predicting the spread of future climate changes and allows a direct test of climate models.

In the ECUS project, I'm coordinating a small team of researchers and students and work on a better use of the paleoclimate record to sharpen our knowledge about the climate system.

Thomas Münch

Interpretation of temperature signals derived from ice cores



Trench campaign at Kohnen station (Photos: Thomas Münch, Sepp Kipfstuhl) (Photo: Thomas Münch)

Ice cores are a key archive to reconstruct millennial-scale climate changes in temperature, but are, due to the inherent noise levels of the proxy data, less reliable in recording the smaller Holocene climate variations. However, quantitative knowledge of the natural Holocene polar climate variability is a key to determine the range of plausible future anthropogenic climate change.

My Ph.D. project aims at improving our understanding of the climate signal and the non-climate variability recorded in water isotopes from polar ice cores. Currently, I use extensive isotope data obtained from the two-dimensional sampling of snow trenches at Kohnen station, Antarctica, to disentangle these two contributions. Of my work I particularly like to combine the observations with statistical modeling and numerical approaches to understand the physics of the ice-core proxy recorder system.

Maria Reschke

Signal content of proxy records

One of the aims of my PhD project is to estimate the signal content of proxy records and the effect of time uncertainty on paleoclimate reconstructions. For this, I am statistically analyzing the temporal and spatial relationship between a global set of Holocene temperature proxy records from different archives (mainly marine sediments) and climate model simulations.

Andrew Dolman

Climate proxy uncertainty

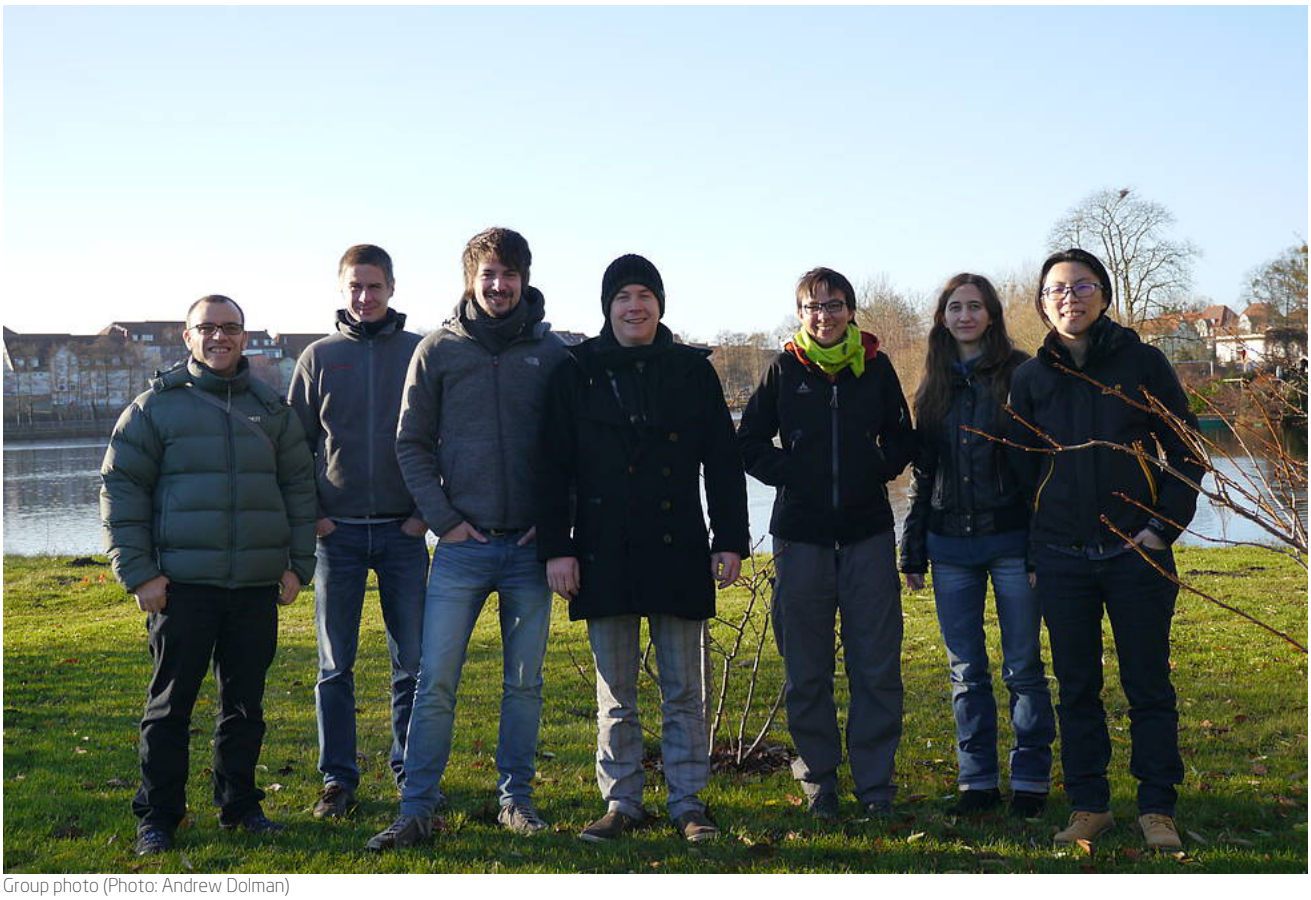
I am an ecologist with a focus on working with environmental data, statistics and models. In previous projects I have studied the response of phytoplankton to nutrient enrichment and their impact on water quality in lakes and rivers, and prior to this I worked on the dynamics of coral cover and its impact on reef associated fishes.

My current work, as part of the PalMod project, is about quantifying and understanding uncertainty in climate proxies. To do this we are constructing proxy system models to simulate the creation of climate proxies. We can analyse the structure of the error introduced during the proxy creation process and this enables us to better understand the error in real climate proxies.

Alexandra Zuhr

Analysing stable isotopes from ice cores

For my master thesis I use isotope data obtained from ice cores from the East Antarctic Plateau. To distinguish between the climate signal and the non-climate variability I am averaging across isotopic profiles form several cores. For this I have to understand the physics of the ice-core proxy record system.



Group photo (Photo: Andrew Dolman)