

KATHARINA METHNER – CURRICULUM VITAE

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Research Interests

Reconstructing Cenozoic paleoaltimetry and paleoclimate using isotope geochemical approaches (stable isotope, clumped isotope and triple oxygen geochemistry) and sedimentological tools.

Professional Experience

Since 2020 Feodor Lynen Fellowship of the Humboldt Foundation for a Visiting PostDoc, Stanford University

2016-2019 Research Associate, Senckenberg Research Institute and Natural History Museum Frankfurt & Senckenberg Biodiversity and Climate Research Centre

2/2017-5/2017 Research Associate, Landes-Offensive zur Entwicklung Wissenschaftlich-ökonomischer Exzellenz (LOEWE) program at the Hessen State Ministry for Higher Education, Research and the Arts (delegated from Senckenberg)

Education

2016 Dr. rer. nat. (summa cum laude), Goethe Universität Frankfurt, Germany
Dissertation title: *Recovering Eocene paleotopography and paleoclimate of the North American Cordillera through integrated stable isotope and clumped isotope analyses*

9/2010-5/2016 PhD candidate at the Senckenberg Biodiversity and Climate Research Centre, Frankfurt, Germany

2010 Dipl. Geowiss. (diploma 1.2), Leibniz University of Hannover, Germany
Thesis: *Fluid flow and kinematics in a Cordilleran detachment zone (1.1)*

10/2004-4/2010 Study of Earth Sciences, Leibniz University Hannover (D) and University of Berne (CH)

Awards

2017 nominee of the Leibniz Association for Leibniz dissertation award

2016 Wolfgang Strutz dissertation award

2016 „Award of Freunde und Förderer“ at Goethe University Frankfurt for the best dissertation in natural sciences

Lectures

2020 Invited keynote talk at AGU Fall Meeting 2020

2020 Invited seminar lecture at University of California Berkeley, USA

2020 Seminar lecture at Stanford University, USA

2019 Invited seminar lecture at University of Bern, Switzerland

2017 Invited keynote talk at JpGU-AGU 2017, Tokio, Japan

2017 Invited seminar lecture at Kyoto University, Japan

22 contributions on international conferences (AGU, EGU, Goldschmidt, JpGU-AGU, DGGV, EuroClay, Desert Symposium) and workshops (SGN Geobiodiversity Conference, ICIW, MioMeet, Humboldt Meeting, AlpArray)

Professional Affiliations

AGU, EGU, GSA, DGGV

Teaching Experience and Student Supervision

Teaching Assistant: “Research Proposal Development and Delivery” (4 SWS), Stanford University
Single lectures: “System Erde” (Bsc.), “Tektonik und Klima” (Msc.), Goethe University Frankfurt
Tutorial associated to the master course “Tektonik und Klima” (2 SWS), Goethe University Frankfurt
Advisor BSc. thesis (C. Schreiber, R. Prinzen, L. Jork, Goethe University Frankfurt)
Advisor on guest student (D. Guven, Middle East Technical University Ankara)
Co-advisor PhD thesis (E. Krsnik, Goethe University Frankfurt)
Hosting students (high school and middle school level during internships and “Girl’s Day”)

Outreach

Contributions to museum exhibits: Flüsse/Fließsysteme (2020), Edmonds Urzeitreich (2020)
Public lectures and panel discussions as part of the Senckenberg outreach and communications programme

Synergistic Activities

2020 Guest editor: Frontiers in Earth Sciences Research Topic: Reaching New Heights: Recent Progress in Paleotopography; <https://tinyurl.com/y85fdo6p>
2019 Special Session organizer EGU, Vienna “Final Descent into the Icehouse from the MMCO: Causes and Consequences” (later merged with “Climate Change in the geological record: what can we learn from data and models?”)

National and international collaborators

Andreas **Mulch** (PhD & Postdoctoral advisor; Senckenberg and Goethe Univ Frankfurt), C. Page **Chamberlain** (PhD & Postdoctoral advisor; Stanford Univ), Catherine **Badgley** (Univ of Michigan), Katherine **Loughney** (Univ of Georgia), Fritz **Schlunegger** (Universität Bern), Oliver **Kempf** (swisstopo), Todd **Ehlers** (Univ Tübingen), Jens **Fiebig** (Goethe Univ Frankfurt), Axel **Gerdes** (Goethe Univ Frankfurt), Jeremy **Caves Rugenstein** (Colorado State Univ), Theresa **Schwartz** (Colorado School of Mines), Olaf **Lenz** (Senckenberg), Volker **Wilde** (Senckenberg), Christian **Teysier** (Univ of Minnesota), Micah **Jessup** (Univ of Tennessee), Horst **Zwingmann** (Univ Kyoto), Yuan **Gao** (China Univ of Geosciences Beijing), Daniel E. **Ibarra** (Brown University)

Funded Projects

2020 LOEWE priority program “VeWa” – Project B2 “Kontinentale Paläoklima- & Biodiversitätsentwicklung” (3.77 Mio. € as co-PI on VeWa; anticipated B2 project ~233.000 €)
<https://www.vewa-project.de/>
2017 DFG SPP AlpArray “Neogene Paleoelevation and Paleoclimate of the Central Alps –Linking Earth Surface Processes to Lithospheric Dynamics”, ME-4955/1-1 (24.375,-€ as PI; 185.000 € as co-PI on MU2845/6-1), <http://www.spp-mountainbuilding.de/about/index.html>
2016 Senckenberg Alumni Programme (research visit) (1.500,-€)
2011 LOEWE Centre BiK-F Outgoing (research visit) (1.500,-€)

Laboratory Skills

Clumped isotope thermometry, stable isotope analyses, triple oxygen analyses; Thermo Finnigan MAT 253, MAT 253+, with peripherals: GasBenchII, TC/EA, Flash EA, self-constructed automated carbonate acid digestion and gas purification system (Hofmann’s Auto Line, HAL); sample preparation: hydrous silicates, carbonates, bioapatite

Fieldwork experience

Paleocene and Eocene sedimentary sequences in the Cordilleran Rocky Mountains (Montana, Idaho, Wyoming) and Washington Cascades (several seasons; 13 weeks); Miocene sedimentary sequences in Cordilleran Rocky Mountains and its foreland (Montana, Idaho, Colorado, Nebraska, New Mexico) as well as in the Mojave Desert (California) (4 seasons; 8 weeks); Oligocene-Miocene terrestrial sediments of the Swiss Molasse, Switzerland (4 seasons, 4 weeks)