

## *Curriculum Vitae*

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 ResearcherID: C-7062-2014  
 Date of birth: 22.04.1977  
 Nationality: German

### **Employment**

2019 - Associate Professor, Department of Earth Sciences, University of Bergen, Norway and Research leader, Bjerknes Centre for Climate Research, Bergen  
 2015-2019 Researcher, Department of Earth Sciences, University of Bergen, Norway  
 2014 Oberassistent, Geological Institute, Department of Earth Sciences, ETH Zürich, Switzerland  
 2010- 2014 Postdoctoral Researcher, Geological Institute, Department of Earth Sciences, ETH Zürich, Switzerland  
 2009- 2010 Guest researcher  
 Department for Meteorology and Oceanography, University of Oslo, Norway  
 2007- 2009 Postdoctoral Research Scholar  
 Department of Earth and Planetary Sciences, California Institute of Technology, Pasadena, California, USA  
 2006- 2007 Postdoctoral Researcher  
 Department of Environmental Sciences, ETH Zürich, Switzerland

### **Education**

2006 PhD, Department of Earth Sciences, ETH Zürich, Switzerland  
**PhD thesis:** "Late Quaternary changes in nitrogen fixation and climate variability recorded by sediments from the Gulf of Mexico and the Caribbean Sea"  
 Supervision: Prof. Gerald Haug (GFZ Potsdam), Prof. Hans Thierstein (ETH Zürich), Prof. Daniel Sigman (Princeton University)  
 2002 Diplom (Master) in Geoecology  
 Faculty of Biology, Chemistry and Earth Sciences, University of Bayreuth, Germany

### **Career breaks**

2010 Maternity leave (1 year)  
 2012 Maternity leave (4 months)  
 2011- 2014 80 % position to accommodate childcare

### **Major research grants, fellowships, and awards**

2017-2021 Researcher Project; Norwegian Research Council  
 2015 Marie Heim-Vögtlin Award; Swiss National Science Foundation (SNF)  
 2015- 2020 ERC Starting Grant  
 2015- 2019 Bergen Research Foundation Recruitment Grant

- 2015 Co-PI, Norwegian National Infrastructure grant "FARLAB" for major upgrade of the stable isotope laboratory at the University of Bergen
- 2012- 2014 Marie-Heim-Vögtlin Postdoc grant from SNF, 2 years
- 2008- 2010 Postdoctoral Fellowship from German Research Foundation (DFG), 2 years
- 2007- 2008 Postdoctoral Fellowship from SNF, 1 year

### Organization of scientific meetings

- 2018 Co-theme chair for theme 8 "Climate of the Past, Present, Future" at the international Goldschmidt Conference for Geochemistry, Boston, US
- 2017 Co-chair of session CL1.17 "The speleothem archive: understanding processes and interpreting Quaternary climate change", EGU Vienna
- 2016 Member of the science committee, 5<sup>th</sup> International Clumped Isotope Workshop, St. Petersburg, FL, USA
- 2015 Co-convenor of clumped isotope session, Goldschmidt conference, Prague
- 2014 Member of organizing committee for the 4<sup>th</sup> International Clumped Isotope Workshop, ETH Zürich, Switzerland

### Commissions of trust

- 2019 PhD evaluation committee for Susanne Alfken, University of Bremen
- 2019 PhD evaluation committee for Henrik Sadatzki, University of Bergen
- 2018 PhD committee member ("rapporteur") for Marion Peral, LSCE, Gif-sur-Yvette, France
- 2017 - Member of the scientific advisory board, MARUM Center for Marine Environmental Science, University of Bremen, Germany

### Institutional responsibilities

- 2019 - Research leader at Bjercknes Centre for Climate Research, Research theme "Climate Hazards" (~50 members)
- 2018 - Leading working group on tipping points, Bjercknes Centre for Climate Research
- 2017-2018 Establishment and interim lead of research theme "Climate Hazards" at the Bjercknes Centre
- 2010- 2014 Elected co-chair of the department-wide association of scientific staff, ETHZ
- 2003- 2004 Elected representative of scientific staff at the Geological Institute, ETH Zürich

### Referee service

*Journals:* Nature, Nature Communications, PNAS, Geology, Paleoceanography, Geochimica et Cosmochimica Acta, JGR-Oceans, Quaternary Science Reviews, Chemical Geology, Global and Planetary Change, Quaternary Research, Biogeosciences, Climate of the Past, G-cubed

*Grant proposals:* German Research Foundation, US National Science Foundation, South African National Research Foundation, Global Exploration Fund (National Geographic)

### Fieldwork:

- Mar 2018 Leading fieldwork in caves of Mulu National Park, Borneo, Malaysia (2 weeks)
- Dec 2008 Research cruise to the Tasman Sea (6 weeks); collection of deep sea corals
- Aug 2008 Fieldwork in Mulu National Park, Borneo, Malaysia (Co-lead, 3 weeks)
- May 2003 IMAGES cruise PICASSO, Caribbean Sea (10 days), sediment coring
- July 2002 IMAGES cruise PAGE 127, Gulf of Mexico (1 month), sediment coring

## Outreach and communication

- 2018 Presentation for His Royal Highness Crownprince Haakon and His Excellency, President of Slovakia, Andrej Kiska, at the Bjerknes Center for Climate Research, Bergen: “New tools for old climate”
- 2018 Contribution to exhibition “tidsmaskin in naturen” (nature’s time machine) at political festival week in Arendal, Norway
- 2018 Instagram presence (@muluclimatescience) during fieldwork in Borneo
- 2017 Lecture for the Norwegian Chemical Society about clumped isotope thermometry
- 2017 Public science lecture for the Geological Society of Zürich: “Natürliche Datenlogger im Untergrund”
- 2016, 2017 Invited talks for university board: “New ways to reconstruct old climate”, University of Bergen
- 2016 Public science lecture and podcast for “Forskning i front” event, University of Bergen: “Climate detectives: deciphering clues from underground”
- 2005 Project responsible for exhibit “Nachrichten aus dem Untergrund” at ETH science fair, explaining the use of sediments as archives

## Other communication

- 2018 Invitation to speak for UiB’s university board in the context of strategy revisions
- 2015 Invitation by Norwegian Ministry of Education and Research to speak before Prime Minister Erna Solberg, the Minister of Education, and invited guests about supporting excellence and recruiting young scientists.

## Invited talks at international conferences

- Plenary lecture “Clumped isotope thermometry in Cenozoic paleoceanography”, International Conference of Paleoceanography, Sydney, 2019.
- Meckler, A.N., Bernasconi, S.M., Ziegler, M., Tripathi, A.: Clumped isotope thermometry as new tool for paleoceanography. Plenary keynote lecture, GeoTiro, Innsbruck, 2016.
- Meckler, A.N., Ziegler, M., Millán, I., Breitenbach, S.F.M., Kele, S., Benning, L.G., Rodriguez-Blanco, J.D., Bernasconi, S.M.: Improving carbonate clumped isotope thermometry for application to foraminifera-based paleoceanography. AGU Fall Meeting, San Francisco, 2014.
- Meckler, A.N., Röhl, U., Martínez-García, A., Adkins, J.F., and Haug, G.H.: Controls of the Northern Hemisphere Hadley circulation over the last five glacial cycles. AGU Fall Meeting, San Francisco, 2012.
- Meckler, A.N., Clarkson, M.O., Adkins, J.F., Eiler, J.M., and Cobb, K.M.: Three glacial-interglacial cycles in a speleothem record from Borneo. INQUA, Bern, 2011.

## Teaching Experience

### Classes / Lectures

- 2019 - Course responsible for for undergraduate class GEOV110 (10 ECTS), “Introduction to marine and terrestrial Quaternary Geology”
- 2017 - Graduate writing and presentation skills class GEOV300 (5 ECTS); course responsible in 2018.
- 2016 - 2018 Lecture “Milankovitch theory and Pleistocene climate” for GEOV110
- 2017 - 2018 Lab/exercise module on stable isotopes in foraminifera for GEOV110

- 2016 - 2019 Lecture "Clumped isotope thermometry" for graduate class GEOV342 "Radiogenic and Stable Isotope Geochemistry", University of Bergen; in 2018 additional lecture on nitrogen isotopes
- 2013 - 2014 Co-teaching (1/3) of graduate class "Climate history and Paleoclimatology", ETH Zürich
- 2011- 2012 Guest lecture "Tropical Paleoclimate" for graduate class "Climate history and Paleoclimatology", ETH Zürich
- 2006 Guest lecture "The marine nitrogen cycle in the past" and teaching assistance for graduate class "Global Biogeochemical Cycles and Climate", ETH Zürich

### **Supervision**

- 2016 - Main supervision of 6 master students (Kristine Sleen Jenssen, Anna Hauge Braaten, Diana Elena Caldarescu, Torill Brekken, Marit Løland, Julie Knutsen), Department of Earth Science, University of Bergen
- 2018 - Main supervision of PhD candidate Anna Hauge Braaten and Postdoc Alvaro Fernandez Bremer
- 2015 - Main supervision of 2 PhD candidates (Thomas Leutert and Niklas Meinicke) and three Postdocs (Dr. Alison Piasecki, Dr. Sze Ling Ho, Dr. Sevasti Modestou), Department of Earth Science, University of Bergen
- 2013- 2014 Main supervision of 1 Master student (Thomas Leutert) and 2 Bachelor students (Katja Rutz, Simone Zaugg), Geological Institute, Department of Earth Sciences, ETH Zürich, Switzerland

### **International Summer Schools**

- 2017 International Summer School on Speleothem Science, Burgos, Spain: Remote lecture "Clumped isotopes in speleothems"

### **Participation in pedagogical courses:**

- Basic University Pedagogics, 10 ECTS, University of Bergen, ongoing
- "Hot moments in teaching and learning", 5 ECTS, University of Bergen, 2018
- Supervision training course, 5 ECTS, University of Bergen, 2016
- Leadership and how to succeed in the Scientific Community, 2 days, ETH Zürich, 2011
- Rhetoric communication: Forms of discourse, 2 days, ETH Zürich, 2005
- Language and speaking in academic education, 2 days and 2 evenings, ETH Zürich, 2004
- Visualization of teaching content, 1 day, ETH Zürich, 2004
- Teaching and learning with the WWW: Tools and techniques, 2 days, ETH Zürich, 2003

## Publications

Total number of publications: 24

Total number of citations (excluding self-citations): 702

H-index: 15

(from Web of Science, Oct 25, 2019)

- Hollis, C.J., Dunkley Jones, T., Anagnostou, E., Bijl, P.K., Cramwinckel, M.J., Cui, Y., Dickens, G.R., Edgar, K.M., Eley, Y., Evans, D., Foster, G.L., Frieling, J., Inglis, G.N., Kennedy, E.M., Kozdon, R., Laurentano, V., Lear, C.H., Littler, K., **Meckler, A.N.**, Naafs, B.D.A., Pälike, H., Pancost, R.D., Pearson, P., Royer, D.L., Salzmann, U., Schubert, B., Seebeck, H., Sluijs, A., Speijer, R., Stassen, P., Tierney, J., Tripathi, A., Wade, B., Westerhold, T., Witkowski, C., Zachos, J.C., Zhang, Y.G., Huber, M. and Lunt, D.J., 2019, The DeepMIP contribution to PMIP4: methodologies for selection, compilation and analysis of latest Paleocene and early Eocene climate proxy data, incorporating version 0.1 of the DeepMIP database, *Geoscientific Model Development*, 12, 3149-3206, <https://doi.org/10.5194/gmd-2018-309>
- Leutert, T.J., Sexton, P.F., Tripathi, A., Piasecki, A., Ho, S.L., **Meckler, A.N.**, 2019, Diagenetic effects on clumped isotope temperatures in fossil benthic and planktic foraminifera, *Geochimica et Cosmochimica Acta* 257, 354-372.
- Piasecki, A., Bernasconi, S.M., Grauel, A.-L., Hannisdal, B., Ho, S.L., Leutert, T.J., Marchitto, T.M., Meinicke, N., Tisserand, A., **Meckler, A.N.**, 2019, Application of Clumped Isotope Thermometry to Benthic Foraminifera, *Geochemistry, Geophysics, Geosystems*, doi: 10.1029/2018GC007961.
- Deplazes, G., **Meckler, A.N.**, Peterson, L.C., Hamann, Y., Aeschlimann, B., Günther, D., Martínez-García, A., Haug, G.H., in press, Fingerprint of tropical climate variability and sea level in sediments of the Cariaco Basin during the last glacial period, *Sedimentology*, doi: 10.1111/sed.12567.
- Bernasconi, S.M., Müller, I.A., Bergman, K.D., Breitenbach, S.F.M., Fernandez, A., Hodell, D.A., Jaggi, M., **Meckler, A.N.**, Millán, I., Ziegler, M., 2018, Reducing uncertainties in carbonate clumped isotope analysis through consistent carbonate-based standardization, *Geochemistry, Geophysics, Geosystems*, doi: 10.1029/2017GC007385.
- Bischoff, T., Schneider, T., **Meckler, A.N.**, 2017, A Conceptual Model for the Response of Tropical Rainfall to Orbital Variations, *Journal of Climate* 30, 8375-8391.
- Meckler, A.N.**, 2016, An extended yardstick for climate variability, News & Views article, *Nature* 534, 626-628.
- Meckler, A.N.**, Affolter, S., Dublyansky, Y.V., Krüger, Y., Vogel, N., Bernasconi, S.M., Frenz, M., Kipfer, R., Leuenberger, M., Spötl, C., Carolin, S., Cobb, K.M., Moerman, J., Adkins, J.F., Fleitmann, D., 2015, Glacial–interglacial temperature change in the tropical West Pacific: A comparison of stalagmite-based paleo-thermometers, *Quaternary Science Reviews* 127, 90-116.
- Kele, S., Breitenbach, S.F.M., Capezzuoli, E., **Meckler, A.N.**, Ziegler, M., Milan, I., Kluge, T., Deak, J., Hanselmann, K., John, C.M., Yan, H., Liu, Z.H., Bernasconi, S.M., 2015, Temperature dependence of oxygen- and clumped isotope fractionation in carbonates: A study of travertines and tufas in the 6-95 degrees C temperature range, *Geochimica et Cosmochimica Acta* 168, 172-192.
- Moerman, J.W., Cobb, K.M., Partin, J.W., **Meckler, A.N.**, Carolin, S., Adkins, J.F., Lejau, S., Malang, J., Clark, B., Tuen, A.A., 2014, Transformation of ENSO-related rainwater to dripwater  $\delta^{18}\text{O}$  variability by vadose water mixing, *Geophysical Research Letters* 41, 7907–7915.

- Meckler, A.N.**, Ziegler, M., Millán, I., Breitenbach, S.F.M., Bernasconi, S.M., 2014, Long-term performance of the Kiel carbonate device with a new correction scheme for clumped isotope measurements, *Rapid Communications in Mass Spectrometry* 28, 1705-1715.
- Marinova, M.M., **Meckler, A.N.**, McKay, C.P., Holocene freshwater carbonate structures in the hyper-arid Gebel Uweinat region of the Sahara Desert (Southwestern Egypt), *Journal of African Earth Sciences* 89, 50-55.
- Straub, M., Sigman, D.M., Ren, H., Martínez-García, A., **Meckler, A.N.**, Hain, M., Haug, G.H., 2013, Changes in North Atlantic nitrogen fixation controlled by ocean circulation. *Nature* 501, 200-203.
- Meckler, A.N.**, Sigman, D.M., Gibson, K.A., François, R., Martínez-García, A., Jaccard, S.L., Röhl, U., Peterson, L.C., Tiedemann, R., Haug, G.H., 2013, Deglacial pulses of deep-ocean silicate into the subtropical North Atlantic Ocean. *Nature* 495, 495-498.
- Galbraith, E.D., Kienast, M., and NICOPP working group members, 2013, The acceleration of oceanic denitrification during deglacial warming, *Nature Geoscience* 6, 579-584.
- Meckler, A.N.**, Clarkson, M.O., Cobb, K.M., Sodemann, H., and Adkins, J.F., 2012, Interglacial hydroclimate in the tropical West Pacific through the late Pleistocene. *Science* 336, 1301-1304.
- Meckler, A.N.**, Ren, H., Sigman, D.M., Gruber, N.P., Plessen, B., Schubert, C.J., Haug, G.H., 2011. Deglacial nitrogen isotope changes in the Gulf of Mexico: Evidence from bulk sedimentary and foraminifera-bound nitrogen in Orca Basin sediments. *Paleoceanography*, 26, PA4216.
- Bailey, J.V., Raub, T.D., **Meckler, A.N.**, Harrison, B.K., Raub, T.M.D., Green, A.M., Orphan, V.J., 2010. Pseudofossils in relict methane seep carbonates resemble endemic microbial consortia. *Palaeogeogr.. Palaeoclim. Palaeoecol.* 285 (1-2), pp. 131-142.
- Ren, H., Sigman, D.M., **Meckler, A.N.**, Plessen, B., Robinson, R.S., Rosenthal, Y., Haug, G.H., 2009. Foraminiferal Isotope Evidence of Reduced Nitrogen Fixation in the Ice Age Atlantic Ocean. *Science* 323, pp. 244-248.
- Meckler, A.N.**, Schubert, C.J., Hochuli, P.A., Plessen, B., Birgel, D., Flower, B.P., Hinrichs, K.-U., Haug, G.H., 2008. Glacial to Holocene terrigenous organic matter input to sediments from Orca Basin, Gulf of Mexico – a combined optical and biomarker approach. *Earth and Planetary Science Letters* 272, pp. 251-263.
- Meckler, A.N.**, Haug, G.H., Sigman, D.M., Plessen, B., Peterson, L.C., and Thierstein, H.R., 2007. Detailed sedimentary N isotope records from Cariaco Basin for terminations I and V: Local and global implications. *Global Biogeochemical Cycles* 21, GB4019.
- Deutsch, C., Sigman, D.M., Thunell, R.C., **Meckler, A.N.**, Haug, G.H., 2004. Isotopic constraints on glacial/interglacial changes in the oceanic nitrogen budget. *Global Biogeochemical Cycles* 18, GB4012.
- Meckler, A.N.**, Schubert, C.J., Cowie, G.L., Peiffer, S., and Dittrich, M. 2004. New organic matter degradation proxies: Valid in lake systems? *Limnology and Oceanography* 49 (6), pp. 2023-2033