Curriculum vitae

Dr. Bärbel Hönisch

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EDUCATION AND PROFESSIONAL EXPERIENCE

2019-present	Tenured Professor, Dept. of Earth & Environmental Sciences, Columbia University, NY
2014-2019	Tenured Associate Professor, Dept. of Earth & Environmental Sciences, Columbia University, NY
2013-2014	Associate Professor, Dept. of Earth & Environmental Sciences, Columbia University, NY
2007-2013	Assistant Professor, Dept. of Earth & Environmental Sciences, Columbia University, NY
2005-2006	Research Scientist at the Center for Marine Environmental Studies (Marum), Bremen University; Adjunct Associate Research Scientist at the Lamont-Doherty Earth Observatory, Palisades, NY, and Visiting Scientist at SUNY Stony Brook, Stony Brook, NY.
2003-2005	Associate Research Scientist at the School of Earth and Environmental Sciences, Queens College, Flushing, NY; Adjunct Associate Research Scientist at the Lamont-Doherty Earth Observatory, Palisades, NY, and Visiting Scientist at SUNY Stony Brook, Stony Brook, NY.
2002-2003	Postdoctoral Research Scientist at the Lamont-Doherty Earth Observatory, Palisades, NY, and Visiting Scientist at SUNY Stony Brook, Stony Brook, NY.
2002	Dr. rer. nat. (Ph.D. in Natural Sciences). Thesis title: Stable isotope and trace element composition of foraminiferal calcite - from incorporation to dissolution, Alfred Wegener Institute for Polar and Marine Research, Bremerhaven, Germany. Advisors: Dr. J. Bijma, Prof. D.A. Wolf-Gladrow.
1999	Diplom (masters) in Marine Biology (secondary subjects: Geology, Ecology). Thesis title: Occurrence and isotopic composition of otoliths from Walvis Ridge sediments, University of Bremen, Germany. Advisors: Prof. V. Smetacek, Prof. G. Wefer.
1995	Vordiplom (BA) in Biology, University of Bielefeld, Germany.

AWARDS AND RECOGNITIONS

2024	NSF Frontiers in Ocean Science Symposium speaker
2021	AGU Emiliani Lecturer
2021	Provost Leadership Fellow, Columbia University
2018	Willi Dansgaard Award, AGU
2018	Marie Tharp Lecturer, GEOMAR
2016	Lenfest Distinguished Faculty Award ($75,000 award)
2015	Lehigh University Foster Hewett Speaker
2013	LDEO Best Mentor Award ($2,000 award)
2012	Women in Science and Engineering (WISE) Distinguished Lecturer, University of Southern California
2011-2012	Ocean Leadership Distinguished Lecturer, Consortium for Ocean Leadership

TEACHING AND MENTORING ACTIVITIES

Courses taught

- EESC UN1009 Global Warming for Global Leaders, Spring 2022, 2024, 2026
- EESC W4937 Cenozoic Paleoceanography, Spring 2021, 2023, 2025
- EESC V1003 Climate and Society, Spring 2017, 2018, 2019
- EESC W4926 Chemical Oceanography, Spring 2007, 2009, 2011, 2013
- EESC V1030 Introduction to Oceanography, annually, Fall 2007-2024 https://summer.sps.columbia.edu/news/oceanography-students-learn-broad-overview-what-happening-our-planet
- EESC V4920 Paleoceanography, Fall 2009, Spring 2012, Spring 2014, Spring 2016
- EESC G9600 Seminar in Paleoclimatology (Mid-Pleistocene Transition), Spring 2014
- EESC G9802 Seminar in Geochemistry, Spring 2008
- Urbino Summer School in Paleoclimatology, lecturing on ocean acidification, ocean carbonate chemistry and paleo-CO_2, 2014, 2015, 2017-2019, 2025
- Short virtual course: Isotopes in Ocean, Earth, and Environmental Research, lecturing on Boron proxies, 2021
- Summer school: Experimental Methods in Culturing Planktic Foraminifers, Catalina Island, CA, July 23-August 3, 2007.

RECENT PROFESSIONAL SERVICE ACTIVITIES

- Chair, Department of Earth and Environmental Sciences of Columbia University, 2026-2029
- Steering Committee and Management Team member TIMES Initiative, 2026-2029
- Royal Netherlands Institute for Sea Research (NIOZ), Scientific Advisory Committee, 2026-2029
- Alfred-Wegener Institute for Polar and Marine Research, Scientific Advisory Board, Vice Chair: 2025. Chair: 2026-2029
- Member of European Science Foundation College of Experts (2018-present)
- GEOMAR Scientific Advisory Board, 2018 – 2025

- Workshop organization:
  - August 2025, TIMES kick-off workshop (Steering Committee Member), Carnegie Institute, Washington D.C., 80 participants, link to workshop press release
  - October 2024, USSP: Targeting Pacific Highs for Past records of Warm Climates, Stone Lab, Ohio State University (Steering Committee Member), 30 participants
  - September 2022, Interglacials of the 41-kyr world, LDEO, 40 participants.
  - February 2019, paleo-CO_2 across the Cenozoic; Austin Wildflower Center, TX, expert vetting and revision of published paleo-CO_2 estimates from terrestrial and marine paleo-proxies, 19 participants
  - May 2018, paleo-CO_2 across the Cenozoic; Lake Arrowhead Conference Center, CA, forms part of an NSF-funded Research Coordination Network, 35 participants
  - March 2017, paleo-CO_2 across the Cenozoic; LDEO, NY; forms part of an NSF-funded Research Coordination Network, 60 participants, laid the foundation for a new and improved paleo-CO_2 database
  - August 2010, Paleocean Acidification, 55 participants; Catalina Island, CA; resulted in a review paper in Science (Hönisch et al. 2012)

PROFESSIONAL ORGANIZATION MEMBERSHIP

- American Geophysical Union
- The Geochemical Society
- European Geosciences Union

OTHER PROFESSIONAL ACTIVITIES

Field work

2023 Culture experiments with living planktic foraminifers at the Wrigley's Institute for Environmental Studies, Validating trace metal proxies under early Cenozoic seawater conditions, Santa Catalina Island, California.

2022 Culture experiments with living planktic foraminifers at the Wrigley's Institute for Environmental Studies, Validating trace metal proxies under early Cenozoic seawater conditions, Santa Catalina Island, California.

2015 Culture experiments with living planktic foraminifers at the Department of Marine Sciences, Isla Magueyes Laboratories, Puerto Rico.

2013 Culture experiments with living planktic foraminifers at the Wrigley's Institute for Environmental Studies, Validating trace metal proxies under early Cenozoic seawater conditions, Santa Catalina Island, California.

2010 Culture experiments with living planktic foraminifers at the Department of Marine Sciences, Isla Magueyes Laboratories, Puerto Rico.

2008 Culture experiments with living planktic foraminifers at the Wrigley's Institute for Environmental Studies, Validating the B/Ca and Mg/Ca proxy, Santa Catalina Island, California.

2006 Culture experiments with living planktic foraminifers at the Department of Marine Sciences, Isla Magueyes Laboratories, Puerto Rico.

2004 Culture experiments with living planktic foraminifers at the Wrigley's Institute for Environmental Studies, Validating the $\delta^{11}B$ and U/Ca proxy, Santa Catalina Island, California.

2000 Foraminifer collection and culturing at Wrigley's Institute for Environmental Studies, Validating the $\delta^{11}B$ and U/Ca proxy, Santa Catalina Island, California.

1997 Sampling and analysis of benthic floral and faunal species composition, Strait of Magellan, Universidad de Magallanes, Punta Arenas, Chile.

Research cruise experience

2000 PELAGIA expeditions 153P, 154P and 157P to the South Atlantic and Indian Ocean: seawater carbonate chemistry and plankton tow collection. The task included supervision of a graduate student.

1998 METEOR expedition 41/1 to the South Atlantic: light attenuation measurements, dinoflagellate isolation and sediment sampling.

1997 VICTOR HENSEN expedition UV IV to the North Sea: water chemistry and UV-experiments with the sunshine simulator.

1996 VICTOR HENSEN expedition UV III to the North Sea: water chemistry sampling.

Research Diving and Boating

2022: Safe Boating course approved by National Association of State Boating Law Administrators (NASBLA) and recognized by the US Coast Guard

2022: California Boater Card

2000: AAUS research diving qualification

SCHOLARSHIPS AND EXTERNAL FUNDING

Heising-Simons Foundation #2026-6679, "Completing the Phanerozoic paleo-CO_2 archive", Bärbel Hönisch (PI), $69,059, 7/2026-6/2027

LDEO Climate Center grant Bärbel Hönisch (PI) and Phoebe Salowey (co-PI) - Quantifying the capacity of the ocean to absorb atmospheric CO_2, $ 11,980, 2025-2027.

NSF EAR 21-21649 "Collaborative Proposal: *CO_2PIP* — A community project to advance and standardize approaches to paleo-CO_2 reconstruction and build the next-generation Phanerozoic record", PIs: I. Montanez (UC Davis), G. Bowen (U. Utah), D. Royer (Wesleyan), D. Breecker (U. Texas, Austin), K. Huntington (U. Washington), B. Hönisch, S. Feiner, L. Chilton (LDEO and Columbia University), $455,144 to LDEO, 08/01/2021-07/31/2025.

NSF OCE 21-03461 "Experimental refinement of the boron isotope proxy in planktic foraminifera – temperature, asymbiotic sensitivity, and seawater elemental composition", B. Hönisch (PI), $658,363, 06/01/2021-05/31/2024; Supplement 2231211 to L. Haynes (co-PI) and B. Hönisch (PI), $83,467, 06/01/2021-05/31/2024.

PAGES workshop support " Interglacials of the 41kyr-world and the Middle Pleistocene Transition", B. Hönisch (PI), Jerry McManus, Chronis Tzedakis, $12,000, 11/13/2021-10/30/2022.

LDEO Climate Center grant "Reconstructing ocean carbon storage changes from the Eocene to the Oligocene, 38-28 Ma", B. Hönisch (PI) and Ingrid Izaguirre (co-PI, GRA), $11,000, 1/1/2021-12/31/2022.

Helmholtz Distinguished Professorship, "Warmer Climates and their Environmental Consequences – an Eocene-Oligocene Perspective on Future Earth", EUR 600,000/year, awarded 11/2019, declined.

Heising-Simons Foundation, "paleopCO_2 – A Scientifically Rigorous and Accessible CO_2 'Keeling Curve' for Geologic Time", B. Hönisch (PI), V. Ferrini (co-PI), $315,738, 1/1/2019-12/31/2021, 3-year award.

USGS Technical Liaison, "Boron isotope measurements on Arctic ocean benthic foraminifers", B. Hönisch, $13,860; 9/1/2018-8/31/2019.

NSF OCE 16-57974, "Collaborative Research: Taking the reliability of Cenozoic boron isotope pH and pCO_2 reconstructions to the next level", B. Hönisch (PI), A. Ridgwell (co-PI), $390,558, 3-year award

NSF OCE 16-57848: "Collaborative Research: An Eocene perspective on future recovery rates of climate and ocean chemistry", R. Zeebe (PI), J. Zachos (co-PI), B. Hönisch (co-PI), $85,421, 3-year award

Center for Climate and Life: "Carbon Uptake & Ocean Acidification", B. Hönisch (PI), Peter deMenocal (co-PI), 7/1/2016-6/30/2018, $257,820

LDEO Climate Center grant "Workshop on Improving Reconstructions of Cenozoic pCO_2 Change", B. Hönisch (PI), K. Dyez, P. Polissar, $ 10,000, 2016-2017.

LDEO Climate Center grant "*Deep Pacific Carbonate Chemistry Across the Mid-Pleistocene Transition*", Laura Haynes (PI) and Bärbel Hönisch (co-PI), $ 10,000, 2016-2019.

NSF OCE 16-36079 RCN: Improving reconstructions of Cenozoic pCO_2 and temperature change," Bärbel Hönisch (PI), Pratigya J. Polissar (co-PI), $202,828, 10/1/2016-9/30/2020.

LDEO Climate Center grant "Mapping the distributions of boron isotopes within planktic foraminifera", Katherine Allen (PI) and Bärbel Hönisch (co-PI), $ 8,416, 2015-2019.

CU Research Faculty Support Program "Upgrade of Sediment and Microscope Laboratory at LDEO", B. Hönisch (PI), S. Hemming (co-PI), J. McManus (co-PI), $3,527.

Max Kade CU15-0199 "Paleo-pH reconstruction across the Middle Eocene Climatic Optimum (MECO) using boron isotopes ($\delta^{11}B$) in planktonic foraminifera from Walvis Ridge (ODP Site 1263) and the Kerguelen", Iris Möbius and Bärbel Hönisch, $55,200, 4/1/2015-3/30/2016.

NSF OCE 14-36079, "Thermohaline circulation and deep ocean carbonate chemistry across the mid-Pleistocene transition", L. Pena (PI), B. Hönisch (co-PI), M. Raymo, S. Goldstein, $696,199, 9/1/2014-8/31/2017

LDEO Climate Center grant "Isotopic characterization of Dead Sea water sources for paleoclimate reconstruction", Y. Kiro, S. Goldstein, B. Hönisch (co-PI), $8,000; 2014-2015.

USGS Technical Liaison, "Boron isotope measurements on Arctic Ocean benthic foraminifers", B. Hönisch (PI) & J. Farmer (co-PI), $13,770; 9/9/2013-9/30/2014.

NSF OCE-12-32987, "Testing geochemical proxy relationships under variable paleo-seawater chemical compositions", B. Hönisch (PI), $418,862; 9/1/2012-8/31/2016.

NSF OCE-12-20554, "Ocean Acidification: Collaborative Research: Establishing The Magnitude Of Sea-Surface Acidification During the Paleocene-Eocene Thermal Maximum", B. Hönisch (PI), $111,935; 9/1/2012-8/31/2016.

LDEO Climate Center grant "What is the Source of Tropical Marine Foraminifera in the Hudson River?", D. Abbott (PI), B. Hönisch (co-PI), $8,000; 2012-2013.

LDEO Climate Center grant "Experimental Evaluation of the pH-Dependence of Boron-Adsorption onto Clay Minerals and Implications for the secular evolution of seawater $\delta^{11}B$ and [B]", J. Ruprecht (PI), B. Hönisch (co-PI), $8,000, 2011-2016.

LDEO Climate Center grant "Using Boron Isotopes in Benthic Foraminifers to Evaluate Intermediate Water PCO_2 Changes in the Western Pacific Ocean over the past 30,000 Years", L. Lo (PI), B. Hönisch (co-PI), $7,800, 2011-2012.

ARC-DP110103158, "Calcification and shell chemistry response of Southern Ocean planktic foraminifers to ocean acidification and changing climates", S.M. Eggins, W. Howard, B. Hönisch, H.J. Spero, G. Dunbar, 2010-2014, A$360,000

NSF OCE-10-41133, "Ocean Acidification - Category 1: Calibration and application of the boron isotope seawater-pH indicator in deep-water corals", B. Hönisch (PI), $439,526; 9/15/2010-8/31/2016.

LDEO Climate Center grant "Calibrating past changes in coccolithophore calcification", Marie Tharp research support for Debora Iglesias-Rodriguez, B. Hönisch (PI), $6,850; 2010-2011.

PAGES workshop support, "Workshop on Paleo-ocean Acidification and Carbon Cycle Perturbation Events, B. Hönisch (PI), $5,000; 6/1/2010-9/31/2010.

NSF OCE-10-32374, "Workshop on Paleo-ocean Acidification and Carbon Cycle Perturbation Events", B. Hönisch (PI), $33,376, 6/1/2010-5/31/2013.

LDEO Climate Center grant "Ground-truthing the B/Ca proxy in tropical planktic foraminifer shells: Investigating the effects of pH, temperature, salinity and carbonate ion". K. Allen (PI), B. Hönisch (co-PI), $8,000; 2010-2011.

Royal Society of England International travel grant to M. Siddall (PI) and B. Hönisch (co-PI) for Hönisch to visit Bristol University for 1 month. Purpose: Cenozoic sea level estimates and boron isotope method comparison, GBP 600.-; 2009-2010.

NSF OCE-09-03014 “Collaborative Research: Reconstructing deep-sea acidification during the Paleocene-Eocene Thermal Maximum”, B. Hönisch (PI), $68,185; 7/1/2009-6/30/2011.

LDEO Climate Center grant “Corals as recorders of ocean acidity: Seasonal variation and ocean acidification from the Industrial Revolution to the present”. D. Chacko (PI), B. Hönisch (co-PI), B. Linsley (co-PI), $8,000; 2009-2010.

LDEO Climate Center grant “Evaluating the potential of boron isotopic composition of brachiopod calcite as a proxy for Phanerozoic seawater pH and secular variation in $\delta^{11}B_{seawater}$”. B. Hönisch (PI), N.G. Hemming (co-PI), S. Hemming (co-PI), T. Rasbury (co-PI), D. Penman (co-PI), $8,000.-; 2009-2010.

NSF OCE-0751764: “Validation of the B/Ca proxy for surface seawater pH and application to measure anthropogenic ocean acidification”. B. Hönisch (PI), $337,724.-, 3/5/2008-2/28/2014.

NSF OCE-0623621 "Reconstructing the role of CO_2 in climate change throughout the Cenozoic Step 1: The mid-Pleistocene transition". B. Hönisch (PI), N.G. Hemming (co-PI), W.S. Broecker (co-PI), $196,581.-; 9/1/2006-8/30/2010.

Helmholtz Young Investigator Group “*p*AGE: *p*aleo Acidity and CO_2-reconstructions from marine GEochemical archives”. B. Hönisch (PI), €1,832,595.-; 2006-2011. Declined in favor of faculty position at Columbia University.

DFG Ho 3285/1-1 “Validating the boron isotope/paleo-*p*H proxy in benthic foraminifera”. B. Hönisch (PI), €154,190.-; 1/1/2005-12/31/2006.

LDEO Climate Center grant (funded by the Vetlesen Foundation) for foraminifera culturing on Santa Catalina Island, California, USA. B. Hönisch (PI) and N. G. Hemming (co-PI), $8,000.-; 2004.

Socfac grant for $\delta^{11}B$ analysis and method comparison at Southampton Oceanography Centre. B. Hönisch (PI); 2002.

DAAD graduate student travel award for foraminifera culturing at Santa Catalina Island, California, USA. B. Hönisch (PI); 2000.

DAAD undergraduate student travel award for practical training at the Instituto de la Patagonia, Universidad da Magallanes, Punta Arenas, Chile. B. Hönisch (PI). DM 1,500.-; 1997.

PUBLICATIONS: google scholar

* indicates my students, § indicates my postdocs

Annabella Amato, Phoebe Salowey, Siri Storstein-Norgaard, Ingrid Izaguirre, Julianne Chin-Drachman, Yoon Kim, Lianna Pront, Alexia Pryor, M. Kkelsey Lane, Jennifer Fehrenbacher, Laura Haynes, Timothy Kenna[1], Louise Bolge, and **Bärbel Hönisch**, " Refining the Boron Isotope Proxy in Planktic Foraminifera: An Exploration of Discrepancies between Culture Experiments and *in situ* Calibrations", in prep.

Abhishek Chaterjee, Leticia Barbero, Maria Tzortziou, Eric Sundquist, Kathy Tedesco et al. (including **B. Hönisch**), "3rd U.S. Decadal Carbon Cycle Science Plan", in prep.

Jennifer Kasbohm, Thomas Westerhold, **Bärbel Hönisch**, Anna Joy Drury Adriane Lam, Deborah N. Tangunan et al., invited *Perspectives* article: "TIMES Initiative", Nature Communications, in prep.

Jannik Martens[§], **Bärbel Hönisch**, Helen K. Coxall, Matt O'Regan, Flor Vermassen, Martin Jakobsson, Beizhan Yan and Sarah Hurley, "Towards understanding archaeal lipid biomarker (GDGT) distributions in central Arctic Ocean sediments", Geochimica et Cosmochimica Acta, in press

Jesse R. Farmer, **Bärbel Hönisch**, Jannik Martens, Matt O'Regan and Thomas M. Cronin, "Reduced Ventilation of the Deep Arctic Ocean During the Last Glacial Period", in press.

Haynes, L., Fehrenbacher, J., Lane, M.K., **Hönisch, B.**, Poniatowski, E., Izaguirre, I., Kim, Y., 2026. Planktic Foraminifera Calcification Increases in Response to Ocean Alkalinity Enhancement. J. Geophys. Res. Biogeosciences 131, e2025JG009603. https://doi.org/10.1029/2025JG009603

Past Global Changes Magazine, Volume 34, No. 1: "The Essence of Time", editors: Jennifer Kasbohm, Thomas Westerhold, **Bärbel Hönisch**, Adriane Lam, Anna Joy Drury, Deborah Tangunan and Iván Hernández-Almeida, 2026.

Bärbel Hönisch, E. Anagnostou, C. Borrelli, S. Sosdian, V. Taylor and A. Woodhouse, "Tiny fossils track oceanographic secrets of geologic time", PAGES Magazine, Volume 34, No. 1, doi.org/10.22498/pages.34.1.80, 2026.

Jennifer Kasbohm, Anna Joy Drury, **Bärbel Hönisch**, Adriane Lam, Deborah N. Tangunan, Thomas Westerhold, "Introducing TIMES: The Time-Integrated Matrix for Earth Sciences", PAGES Magazine, Volume 34, No. 1, doi.org/10.22498/pages.34.1.4, 2026.

Timothy D. Herbert, D. Evans, **B. Hönisch**, E.L. McClymont, M. Peral, J.Sepúlveda, K.K. Śliwińska, V.E. Taylor, Synchronizing marine temperature records to study climate change in the past", PAGES Magazine, Volume 34, No. 1, doi.*org/10.22498/pages.34.1.24,* 2026.

Pacific Highs Working Group (Elizabeth M. Griffith*, Thomas Westerhold*, **Bärbel Hönisch**, William W. Sager, James Zachos, Donald Penman, Tali L. Babila, Sietske J. Batenburg, Chiara Borrelli, Flavia Boscolo-Galazzo, Yuhao Dai, Edoardo Dallanave, Shamar C. Chin, Dustin T. Harper, Shannon J. Haynes, Brian T. Huber, Brittany N. Hupp, Kevin Konrad, Adriane R. Lam, Christopher M. Lowery, Kenneth G. MacLeod, Neil Mitchell, Pratigya J. Polissar, Batoul Saad, Elizabeth C. Sibert, Victoria E. Taylor, Alexandra Villa, Simon C Brassell, Serena Dameron, Kelsey E. Doiron, Jesse Farmer, Junichiro Kuroda, Mitchell Lyle, A., Christina Ravelo, Julio Sepúlveda, Chijun Sun, Lucien Nana Yobo, Maureen H. Walczak, Yi Wang, Yunlang Zhang), "Pacific Highs: a treasure trove of past warm climate archives", Paleoceanography and Paleoclimatology 40, e2025PA005133.

Westerhold, T., C. Agnini, F. Hilgen, **B. Hönisch**, A.N. Meckler, H. Pälike, B. Wade, J.C. Zachos, S. Sosdian, "Timing is everything", Paleoceanography and Paleoclimatology, 2024, 39, e2024PA004932. https://doi.org/10.1029/2024PA004932

Telesca, L., B.K. Linsley, L. Witek, **B. Hönisch**, "Biomineralization and biomechanical trade-offs under heterogeneous environments in the eastern oyster *Crassostrea virginica*", Journal of Molluscan Studies, Volume 90, Issue 4, November 2024, eyae033, https://doi.org/10.1093/mollus/eyae033

Hönisch B., Witkowski C.R., Penman D.E., Harper D.T., Henehan M.J. and P. Polissar, "Paleo-atmospheric CO2 reconstructions from deep-ocean sediments", Past Global Changes Magazine 32(2), 86-87, 2024

Lane, M.K., J. Fehrenbacher, **B. Hönisch**, L. Haynes, B.C. Crump, "Advancing individual foraminifer analysis by combining molecular, morphometric, and trace element geochemistry", Journal of Foraminiferal Research 54, 342-354 (2024).

Harper, D.T., **B. Hönisch**, G.J. Bowen, R.E. Zeebe, L.L. Haynes, D. E. Penman, J.C. Zachos, "Long- and short-term covariance of sea surface temperature and atmospheric CO_2 during the late Paleocene and early Eocene (59 to 53 Ma), Proceedings of the National Academy of Sciences **121**, e2318779121 (2024).

Steinthorsdottir, M. I.P. Montañez, D.L. Royer, B.J.W. Mills, and **B. Hönisch**, "Chapter 9.8: Phanerozoic Atmospheric CO_2 Reconstructed with Proxies and Models: Current Understanding and Future Directions", in Reference Module in Earth Systems and Environmental Sciences, Elsevier, https://doi.org/10.1016/B978-0-323-99762-1.00074-7.

*Anderson, L.B., **Hönisch, B.**, Coxall, H.K. and Bolge, L. (2024) Atmospheric CO2 Estimates for the Late Oligocene and Early Miocene Using Multi-Species Cross-Calibrations of Boron Isotopes. Paleoceanography and Paleoclimatology 39, e2022PA004569.

The Cenozoic CO_2 Proxy Integration Project ($CenCO_2PIP$) Consortium (Bärbel Hönisch, Dana L. Royer, Daniel O. Breecker, Pratigya J. Polissar, Gabriel J. Bowen, Michael J. Henehan, Ying Cui, Margret Steinthorsdottir, Jennifer C. McElwain, Matthew J. Kohn, Ann Pearson, Samuel R. Phelps, Kevin T. Uno, Andy Ridgwell, Eleni Anagnostou, Jacqueline Austermann, Marcus P. S. Badger, Richard S. Barclay, Peter K. Bijl, Thomas B. Chalk, Christopher R. Scotese, Elwyn de la Vega, Robert M. DeConto, Kelsey A. Dyez, Vicki Ferrini, Peter J. Franks, Claudia F. Giulivi, Marcus Gutjahr, Dustin T. Harper, Laura L. Haynes, Matthew Huber, Kathryn E. Snell, Benjamin A. Keisling, Wilfried Konrad, Tim K. Lowenstein, Alberto Malinverno, Maxence Guillermic, Luz María Mejía, Joseph N. Milligan, John J. Morton, Lee Nordt, Ross Whiteford, Anita Roth-Nebelsick, Jeremy K. C. Rugenstein, Morgan F. Schaller, Nathan D. Sheldon, Sindia Sosdian, Elise B. Wilkes, Caitlyn R. Witkowski, Yi Ge Zhang, Lloyd Anderson, David J. Beerling, Clara Bolton, Thure E. Cerling, Jennifer M. Cotton, Jiawei Da, Douglas D. Ekart, Gavin L. Foster, David R. Greenwood, Ethan G. Hyland, Elliot A. Jagniecki, John P. Jasper, Jennifer B. Kowalczyk, Lutz Kunzmann, Wolfram M. Kürschner, Charles E. Lawrence, Caroline H. Lear, Miguel A. Martínez-Botí, Daniel P. Maxbauer, Paolo Montagna, B. David A. Naafs, James W. B. Rae, Markus Raitzsch, Gregory J. Retallack, Simon J. Ring, Osamu Seki, Julio Sepúlveda, Ashish Sinha, Tekie F. Tesfamichael, Aradhna Tripati, Johan van der Burgh, Jimin Yu, James C. Zachos, Laiming Zhang): "Towards a Cenozoic History of Atmospheric CO_2", Science 382, eadi5177,

doi: 10.1126/science.adi5177 (2023). Reprint link: https://www.science.org/stoken/author-tokens/ST-1598/full

*Haynes, L., **B. Hönisch**, K. Holland, S.M. Eggins, Y. Rosenthal, "Calibrating Planktic Foraminiferal Mg/Ca for Application Across the Cenozoic", Paleoceanography and Paleoclimatology **38**, e2023PA004613.

Xiong, Z., T. Li, **B. Hönisch**, T.J. Algeo, L. Bradtmiller, M. Cane, C. Laj, F. Wang, Z. Lu, B. Qin, F. Chang, X. Gong, "Monsoon- and ENSO-driven surface-water pCO_2 variation in the tropical West Pacific since the Last Glacial Maximum'. Quaternary Science Reviews 289, 107621.

Boer, W., S. Nordstad, M. Weber, R. Mertz-Kraus, **B. Hönisch**, J. Bijma, M. Raitzsch, D. Wilhelms-Dick, G. L. Foster, H. Goring-Harford, D. Nürnberg, F. Hauff, H. Kuhnert, F. Lugli, H. Spero, M. Rosner, P. van Gaever, L. J. de Nooijer, G.-J. Reichart, "A new calcium carbonate nano-particulate pressed powder pellet NFHS-2-NP for LA-ICP-OES, LA-(MC)-ICP-MS and μXRF". Geostandards and Geoanalytical Research, doi: 10.1111/ggr.12425.

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Steinthorsdottir, Margret, Royer, Dana L., Montañez, Isabel P., Bowen, Gabriel J., Breecker, Daniel O., and **Hönisch, Bärbel**, " *CO2 Proxy Integration Project (CO2-PIP): a new community project for quantifying atmospheric CO2 over the Phanerozoic",* 11th European Palaeobotany and Palynology Conference, Abstracts, Program and Proceedings, Stockholm, Sweden, June 19-22, 2022.

Anderson, L.B., **B. Hönisch**, H.K. Coxall, "A multi-million-year reconstruction of atmospheric CO_2 from the late Eocene "Warmhouse" to the Oligocene "Coolhouse", ICP14, Bergen, Norway, 2022.

Ezat, M.M., A. Westgård, F. Sykes, J. Meilland, G. Foster, N. El bani Altuna, C. Larkin, T. Chalk, T. Rasmussen, L. Skinner, A. Piotrowski, M. Kucera, J. Olsen, F. Muschitiello, L. Smik, S. Belt, J. Groeneveld, **B. Hönisch**, R. Stein, K. Fahl, A. Milton, U. Hoff, "An Arctic perspective on glacial ocean and climate changes", ICP14, Bergen, Norway, 2022.

Harper, D.T., E. Anagnostou, **B. Hönisch**, G. Bowen, " Exploring approaches to extinct planktic foraminifera $\delta^{11}B$ vital effects: Implications for Paleocene-Eocene Thermal Maximum and Eocene Thermal Maximum 2 pCO_2 reconstructions", ICP14, Bergen, Norway, 2022.

Harper**,** D., **B. Hönisch**, G. Bowen, R. Zeebe, L. Haynes, J. Zachos. *$\delta^{11}B$-based records reveal close coupling of late Paleocene and early Eocene (59 to 53 Ma) climate and*

atmospheric paleo-CO_2, 12th International Conference on Climate and Biotic Events of the Paleogene (CBEP) 2022. Abstract A-184.

Isabel P Montañez, Gabriel Bowen, Dan Breecker, **Bärbel Hönisch**, Sophia I Macarewich, Margret Steinthorsdottir and Dana Royer, "*Opportunities and Challenges in Paleo-CO_2 Reconstruction and Implications for Advancing our Understanding the Paleo-Earth System",* endowed Biogeochemistry Lecture, Goldschmidt 2022, July 12, 2022, Honolulu, HI.

Hönisch, B., Keynote lecture, "Towards a Keeling curve for Geologic Time", International workshop "Climate Change and Carbon Cycle – C^{4}", Pisa, Italy, June 22-24, 2022.

Royer, D., Margret Steinthorsdottir, Isabel Montanez, Daniel Breecker, Gabriel Bowen, **Bärbel Hönisch**, and Katharine Huntington, " *CO2PIP--A community project to advance and standardize approaches to paleo-CO_2 reconstruction"*. 39th Meeting of the Paleobotanical C. May 6, 2022, Little Oak Spring, VA

Hönisch, B., Keynote lecture, "Atmospheric CO_2 evolution over the Cenozoic", PhanTASTIC workshop (online over zoom), September 13 and 15, 2021.

Hönisch, B., "Community Efforts to Document and Refine Paleoreconstructions", Emiliani Lecture, AGU, New Orleans, 2021.

Anderson, L.B., **B. Hönisch**, H.K. Coxall, "New Oligo-Miocene estimates of surface ocean pH and atmospheric carbon dioxide based on cross-calibrations of boron isotopes in planktic foraminifera", AGU, New Orleans, 2021.

Izaguirre, I. and **B. Hönisch**, "Exploring the Relative Effects of $\Delta[CO_3^{2-}]$ and $[B]_{sw}$ on Benthic Foraminifer B/Ca Ratios", AGU, New Orleans, 2021.

Montañez, I. D. Royer, D.O. Breecker, G. Bowen, **B. Hönisch**, K. Huntington, S. Feiner, L. Chilton, "CO2PIP— A community project to advance and standardize approaches to paleo-CO2 reconstruction and to build the next-generation Phanerozoic", GSA, Portland, 2021, https://doi.org/10.1130/abs/2021AM-369694

Hönisch, B., National Academy of Sciences, Engineering and Medicine workshop: A Research Strategy for Ocean-based Carbon Dioxide Removal and Sequestration, "Paleocean pH and calcification", panelist, January 2021

*Haynes, L.L., **B. Hönisch**, "The Seawater Carbon Inventory at the Paleocene-Eocene Thermal Maximum", AGU, 2020.

§Whiteford, R., **B. Hönisch**, V. Ferrini, and the paleo-CO_2 Research Coordination Network, "Compiling Estimates of Cenozoic CO_2 from Multiple Proxies", Goldschmidt, Hawaii, 2020.

Flöter, S., J. Fietzke, M. Gutjahr, J. Farmer, **B. Hönisch**, G. Nehrke, A. Eisenhauer, „Isotopic and elemental mapping of bamboo corals – Reference to calcification mechanism and proxy applications", EGU, Vienna, 2020.

Gottschalk, J., R.F. Anderson, A.P. Hasenfratz, **B. Hönisch**, S.L. Jaccard, J.F. McManus, L.C. Skinner, C. Waelbroeck, G. Winckler, "Perturbations in Antarctic bottom water formation in the Atlantic sector of the Southern Ocean during the last peak interglacial period", EGU, Vienna, 2020.

INVITED SEMINAR AND SYMPOSIUM PRESENTATIONS

2026 20th anniversary Ocean Carbon & Biogeochemistry (OCB) symposium, virtual, Big Picture Talk

2026 CO_2 then and now - What can we learn from the past?, The Earth, a dynamic planet: a tribute to Xavier Le Pichon, Collège de France, Paris

2025 Columbia Undergraduate Scholars Program, Columbia University, New York

2024 2nd Oldenburg Climate Symposium: Climate, People, Ocean - Learning from the past, Keynote lecture

2024 Rutgers University, New Brunswick

2024 University of Connecticut, Storrs

2024 "On Thin Ice: Global Impact of Climate Change in the Arctic", joint online event organized by the University of Cologne and the German Center for Research and Innovation New York, gave a virtual tour of the LDEO core repository

2024 Dartmouth College

2024 University of Colorado, Boulder

2023 Harvard University

2023 Brown University

2022 University of Connecticut

2022 The Climate Reality Project, https://www.youtube.com/watch?v=zvmfglqXq8A

2022 Oregon State University, USA.

2021 Northwestern University, USA.

2021 University College London, UK.

2021 University of Washington, Chemical Oceanography Seminar, USA.

2020 Eco Festival, Kingsborough Community College, New York, USA.

2019 University of Bern, Switzerland.

2019 Alfred-Wegener Institute, Germany

2018 UC Santa Cruz, USA.

2018 Marie Tharp Lecture Series, GEOMAR, Germany.

2017 Brooklyn High School of the Arts, Brooklyn, USA.

2017 American Museum of Natural History, Educators evening, New York, USA.

2016 4th International Symposium on the Ocean in a high CO_2 world, PLENARY TALK, Hobart, Tasmania

2016 Brown University, USA

2015 D. Foster Hewett Symposium on Ocean Acidification, Lehigh University, USA

2014 Penn State, USA

2014 2nd CliMates International Summit, Columbia University

2014 Gordon Conference on Ocean Global Change Biology, New Hampshire, USA

2014 LDEO Public Lecture Series, Palisades, USA

2013 NASA GISS, New York, USA.

2013 Massachusetts Institute of Technology, Bostin, USA.

2013 USC Women in Science and Engineering (WiSE) Distinguished Lecture, University of Southern California, USA.
2013 Packer Collegiate Institute, K-12 School in Brooklyn NY.
2012 Ocean Leadership Distinguished Lecturer: Case Western University, USA
2012 Ocean Leadership Distinguished Lecturer: San Diego State University, USA
2012 Ocean Leadership Distinguished Lecturer: University of South Florida, USA
2012 Ocean Leadership Distinguished Lecturer: Rice University, USA
2012 Ocean Leadership Distinguished Lecturer: University of Houston, USA
2012 Ocean Leadership Distinguished Lecturer: Binghampton University, USA
2012 Ocean Leadership Distinguished Lecturer: University of New England, USA.
2011 Rutgers University, USA.
2011 Dalhousie University, Halifax, Canada.
2010 Smith Lecture Series, University of Michigan, USA.
2010 Cambridge University, UK.
2009 Boston University, USA.
2009 Princeton, USA.
2009 Canberra, RSES, ANU, Australia.
2008 NYCiSchool, New York.
2008 Texas A&M, College Station.
2007 Georgia Institute of Technology.
2007 Crafoord Prize-Winner Ceremony, Lund, Sweden.
2007 Rutgers University.
2007 Metuchen Elementary School, New Jersey.
2006 Massachusetts Institute of Technology, Boston, USA
2005 International University Bremen, Germany
2005 Alfred Wegener Institute, Bremerhaven, Germany
2005 Yale University, New Haven, USA
2005 Rutgers University, New Brunswick, USA
2004 Woods Hole Oceanographic Institution, Woods Hole, USA

SELECT PRESS COVERAGE

June 2025, AFP Fact Check - US think tank misleads on ocean acidification threat
May 2025, ABC News - Why too much carbon dioxide harms the planet
September 2024, AFP Fact check - Posts mislead on climate impact of human-caused CO2
September 2024, State of the Planet - Ancient Ocean Sediments reveal Analog to Human Influenced Warming
December 2023, Purpose Driven Innovation Ecosystem, YouTube - Climate Change and the Science of paleo-CO2
December 2023, The Rational View, Podcast with Dr. Al Scott - Dr. Bärbel Hönisch tells how scientists know what CO2 levels were millions of years ago
December 2023, Agence France-Presse - Current carbon dioxide levels last seen 14 million years ago

March 2016, Christian Science Monitor, http://www.csmonitor.com/Science/2016/0321/Our-carbon-emissions-top-even-those-of-56-million-years-ago-scientists-say?cmpid=push013
March 2012: Unprecedented Ocean Acidification Underway, Mother Jones http://motherjones.com/blue-marble/2012/03/ocean-acidification-unprecedented
March 2012: Study: Oceans Acidifying Faster Than They Have in Past 300 Million Years, On Earth Blog, http://www.onearth.org/blog/oceans-acidifying-faster-than-300-million-years