Jacqueline Austermann – Curriculum Vitae

Columbia University, Lamont-Doherty Earth Observatory
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Academic positions

Associate Professor,	Department of Earth and Environmental Sciences, Columbia University, New York, USA	07/2023 – present
Parental leave 01/2025 – 05/2025		
Assistant Professor,	Department of Earth and Environmental Sciences, Columbia University, New York, USA	01/2018 – 06/2023
Parental leave 01/2022 – 05/2022		
Newton International Fellow,	Department of Earth Sciences, University of Cambridge, Cambridge, UK	10/2016 - 12/2017
Post-Doctoral Fellow,	Department of Earth and Planetary Sciences, Harvard University, Cambridge, USA	06/2016 - 09/2016

Education

Ph.D. in Earth and Planetary Sciences; Harvard University, Cambridge, USA 09/2011 – 05/2016
Dissertation: Imprints of geodynamic processes on the paleoclimate record
Advisor: Prof. Jerry X. Mitrovica

M.Sc. in Geophysics, Ludwig Maximilians Universität München, Germany 10/2009 – 09/2011
Thesis: The role of the Zagros orogeny in slowing down Arabia-Eurasia convergence since ~5 Ma
Advisors: Dr. Hans-Peter Bunge & Dr. Giampiero Iaffaldano

B.Sc. in Physics, Technische Universität Darmstadt, Germany 10/2006 – 09/2009

Honors and Awards

Paxman et al. (2023) is among top 10 most-cited papers published by AGU Advances in 2023 (Paxman was postdoc advisee)	2025
Named one of Science News 10 Scientists to watch	2022
Sloan Research Fellow ($75,000, 2-year fellowship)	2021 – 2023
CIG (Computational Infrastructure for Geodynamics) Distinguished Speaker	2020 – 2021
DEES Undergraduate Outstanding Professor Award	2020
Jason Morgan Early Career Award from the *American Geophysical Union*	2019
Co-author on 'best student paper' award from *Geophysical Journal International*	2018
Outstanding peer reviewer, Nature Geoscience	2017
Newton International Fellowship, The Royal Society	2016 - 2017
Certificate for Distinction in Teaching, Harvard University	2013, 2016
Harvard GSAS Merit Fellowship	2015
Graduate Fellowship by the Harvard Center for the Environment	2013 - 2014

James Mills Peirce Fellowship, Harvard University	2011
Master Fellowship of the Max Weber-Program Bavaria (Elite Network of Bavaria)	2009 - 2011
Bachelor and Master Fellowship of the Foundation of German Industry	2006 - 2011

Research Grants (Advisor for Postdoc)

External funding - current

Title: Modeling Earth from Atomic to Global Scale (MINERALS)
PI: Wentzcovitch, co-PIs Austermann, Ekstrom, Ren
Source of Support: Gordon and Betty Moore Foundation
Period: 11/2024 – 10/2028
Award (Lamont): Total $3,799,000.

Title: Collaborative Research: How much and why did Ice Sheets melt during the Last Interglacial (HISEAS)
PI: Austermann, co-PIs McManus, D'Andrea, Aschwanden (U of Alaska), Dumitru (U of Florida)
Source of Support: National Science Foundation (NSF) Frontiers Research in Earth Sciences (FRES)
Period: 9/2024 – 8/2029
Award (Lamont): Total $1,128,169.

Title: EAR-Climate: Mountain Glacier contribution to Sea Level CE 1900-2100
PI: Schaefer, co-PIs Austermann, Rupper (U of Utah), Brewer (U of Utah), Givens (Utah State)
Source of Support: National Science Foundation (NSF) Frontiers Research in Earth Sciences (FRES)
Period: 9/2022 – 8/2026
Award (Lamont): Total $2,699,998.

Title: Collaborative Research: Imaging the 3D Viscosity Structure of the Antarctic Mantle with Existing Observations from GPS and Relative Sea Level
PI: Lloyd, co-PIs Austermann, Mitrovica (Harvard)
Source of Support: NSF, Office of Polar Programs (OPP)
Period: 2/2022 – 1/2026
Award (Lamont): Total $437,788.

Title: Collaborative Research: Sensitivity of the West Antarctic Ice Sheet to 2º Celsius (SWAIS2C)
PI: Patterson (Binghamton U.), co-PIs Ash (William Marsh Rice U.), Austermann, Dodd (Northern Illinois U.), Harwood (U. of Nebraska-Lincoln), Leventer (Colgate U.), Winberry (Central Washington U.), Kingslake
Source of Support: NSF, Office of Polar Programs (OPP)
Period: 9/2022 – 9/2026
Award (Lamont): Total $516,683.

Title: Analysis of multi-decadal Fennoscandian geodetic data sets in an environment of present-day mass loss: Implications for Earth structure and sea-level change
PI: Davis, co-PIs Austermann, Wang (Ohio State)
Source of Support: National Aeronautics and Space Administration (NASA), Earth Science
Period: 8/2021 – 8/2025

Award (Lamont): $797,423.

Title: NNA Track 1: Predicting Coastal Responses to a Changing Greenland Ice Sheet
PI: Tinto, co-PIs Austermann, Bell, Porter, Kingslake
Source of Support: NSF, Navigating the New Arctic (NNA)
Period: 9/2019 - 8/2025
Award (Lamont): Total $2,986,095.

External funding - past

Title: Reconstructing last interglacial sea level based on models and observations from the Bahamas
PI: Austermann, co-PIs Raymo, Dyer
Source of Support: NSF, Marine Geology and Geophysics (MGG)
Period: 4/2019 - 3/2024
Award (Lamont): Total $473,042.

Title: Constraining the evolution of Last Interglacial sea level from radiometrically dated corals, ooids and caves on Crooked Island, Bahamas
PI: Dumitru, co-PIs Austermann, Raymo
Source of Support: NSF, Paleo Perspectives on Climate Change (P2C2)
Period: 6/2021 – 5/2024
Award (Lamont): Total $261,456.

Title: Collaborative Research: Understanding what we see in the lower mantle - mineral physics interpretation of seismic tomographic images
PI: Wentzcovitch, co-PIs Austermann, Ren, Ekstrom, Tromp (Princeton U.)
Source of Support: NSF, Cooperative Studies of the Earth's Deep Interior (CSEDI)
Period: 7/2020 – 6/2024
Award (Lamont): Total $745,000.

Title: Collaborative Research: Terrestrial hydrology during the last deglaciation
PI: Wickert (U. of Minnesota), co-PIs Austermann, Fan Reinfelder (Rutgers U), Ng (U. of Minnesota)
Source of Support: NSF, Paleo Perspectives on Climate Change (P2C2)
Period: 7/2019 - 6/2023
Award (Lamont): Total $274,132.

Title: NSFGEO-NERC: Adjoint tomography of mantle viscosity using deglacial sea level observations
PI: Austermann, co-PI Al-Attar (U. of Cambridge)
Source of Support: NSF, Geophysics
Period: 6/2020 – 5/2023
Award (Lamont): Total $408,003.

Title: Combining Data and Models of the Centralian Superbasin to Investigate Cratonic Basin Formation
PI: Austermann

Source of Support: Petroleum Res. Fund
Period: 10/2018 - 9/2020
Award (Lamont): Total $110,000.

External funding – pending

Title: Understanding the geodynamic evolution of the Antarctic mantle and crust since ice sheet inception
PI: Austermann, co-PI Kolawole, Lloyd
Source of Support: NSF, Polar Programs
Period: 2/2025 – 1/2028
Award (Lamont): Total $703,638.

Title: Collaborative Research: Deciphering MIS 5e sea-level changes using U-Th dated fossil corals and cave deposits from the Yucatán Peninsula
PI: Dumitru (U of Florida), co-PI Austermann, D'Andrea
Source of Support: NSF, P4Climate
Period: 6/2025 – 5/2028
Award (Lamont): Total $286,967.

Internal funding – past

Title: Constraining last interglacial sea level by mapping fossil corals and landforms on Hawaiian Islands
PI: Austermann
Source of Support: Columbia Lenfest Junior Faculty Awards
Period: 07/2023
Award: Total $10,960.

Title: Conference on improving our understanding of ice sheet and solid earth processes that drive changes in paleo sea level
PI: Austermann
Source of Support: Columbia Lenfest Junior Faculty Awards
Period: 12/2019
Award: Total $6,800.

Publications (Advisor for Postdoc, *Graduate student or Research Assistant*)

h-index: 26, # of citations: 2401 (03/27/25 on google scholar), ORCID: 0000-0003-3754-5082

in review

Lewright, L., **J. Austermann**, C. Piecuch, S. Adhikari, J.L. Davis, G.A. Milne, G.J.G. Paxman, *in rev*. Projecting 21st Century Sea-level Change Around Coastal Greenland.

2025

(67) Callaghan, K. L., A. Wickert, R. Barnes, **J. Austermann**, 2025. The Water Table Model (WTM) v2.0.1: Coupled groundwater and dynamic lake modelling, Geoscientific Model Development 18, 1463–1486, https://doi.org/10.5194/gmd-18-1463-2025.

2024

(66) *Creel, R.,* **J. Austermann**, 2024. Glacial isostatic adjustment driven by asymmetric ice sheet melt during the Last Interglacial causes multiple local sea-level peaks. Geology 53 (3): 253–258 doi: https://doi.org/10.1130/G52483.1

(65) *Creel, R.,* **J. Austermann**, R.E. Kopp, N.S. Khan, T. Albrecht, J. Kingslake, 2024. Global mean sea level likely higher than present during the Holocene. Nature Communications 15, 10731, https://doi.org/10.1038/s41467-024-54535-0

(64) *Hollyday, A.*, M. E. Raymo, **J. Austermann**, F. Richards, M. Hoggard, A. Rovere, 2024. Pliocene shorelines and the epeirogenic motion of continental margins: A target dataset for dynamic topography models. Earth Surface Dynamics vol. 12 883–905.

(63) *Chester, S.,* **J. Austermann**, W. J. D'Andrea, A. J. Lloyd, R. Creel, 2024. On the Origin of Holocene Sea-Level Transgressions in Formerly Glaciated Regions. Quaternary Science Reviews vol. 345 108986.

(62) Rubio-Sandoval, K., D. D. Ryan, S. Richiano, L. M. Giachetti, *A. Hollyday*, J. Bright, E. J. Gowan, M. Pappalardo, **J. Austermann**, D. S. Kaufman, A. Rovere, 2024. Quaternary and Pliocene sea-level changes at Camarones, central Patagonia, Argentina. Quaternary Science Reviews vol. 345 108999.

(61) *Williams, K.*, D. S. Stamps, **J. Austermann**, S. King, E. Njinju, 2024. Effects of Using the Consistent Boundary Flux Method on Dynamic Topography Estimates. Geophysical Journal International vol. 238 1137–1149.

(60) Balascio, N., W. J. D'Andrea, *R. C. Creel*, L. Marshall, M. Dia, S. Wickler, R. S. Anderson, **J. Austermann**, K. Vasskog, P. R. Nielsen, S. O. Dahl, 2024. Refining Holocene sea-level dynamics for the Lofoten and Vesterålen archipelagos, northern Norway: Implications for prehistoric human-environment interactions. Journal of Quaternary Science 39(4) 566-584, https://doi.org/10.1002/jqs.3604

(59) *Creel, R.,* F. Miesner, S. Wilkenskjeld, **J. Austermann**, P. P. Overduin, 2024. Glacial Isostatic Adjustment reduces past and future Arctic subsea permafrost. Nature Communications 15, 3232. https://doi.org/10.1038/s41467-024-45906-8

(58) *Antwerpen, R.*, **J. Austermann**, N. Young, D. Porter, L. Lewright, K. Latychev, 2024. Holocene Southwest Greenland Ice Sheet Behavior Constrained by Sea-Level Modeling, Quaternary Science Reviews, Volume 328, https://doi.org/10.1016/j.quascirev.2024.108553.

(57) Cleveland Stout, R., T. Pico, P. Huybers, J.X. Mitrovica, **J. Austermann**, 2024. Imprint of relative sea-level histories on Last Interglacial coral preservation. Geophysical Journal International, Volume 236, Issue 3, March 2024, Pages 1360–1372, https://doi.org/10.1093/gji/ggad476

(56) Lloyd, A., O. Crawford, D. Al-Attar, **J. Austermann**, M. J. Hoggard, F. D. Richards, F. Syvret, 2023. GIA imaging of 3D mantle viscosity based on paleo sea-level observations - Part I: Sensitivity kernels for an Earth with laterally varying viscosity, Geophysical Journal International, Volume 236, Issue 2, Pages 1139–1171, https://doi.org/10.1093/gji/ggad455

2023

(55) 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) (2023). Towards a Cenozoic History of Atmospheric CO_2, Science 382, eadi5177, doi: 10.1126/science.adi5177.

(54) Richards, F., S. L. Coulson, M. J. Hoggard, **J. Austermann**, B. Dyer, J. X. Mitrovica, 2023. Geodynamically corrected Pliocene shoreline elevations in Australia consistent with midrange projections of Antarctic ice loss, Science Advances, Vol 9, Issue 46, DOI: 10.1126/sciadv.adg3035

(53) Dumitru, O., B. Dyer, **J. Austermann**, M.R. Sandstrom, S.L. Goldstein, W. D'Andrea, M. Cashman, R. Creel, L. Bolge, M.E. Raymo, 2023. Last interglacial global mean sea level from high-precision U-series ages of Bahamian fossil coral reefs, Quaternary Science Reviews, Volume 318, https://doi.org/10.1016/j.quascirev.2023.108287.

(52) Rovere, A., T. Pico, F. Richards, M.J. O'Leary, J.X. Mitrovica, I.D. Goodwin, **J. Austermann**, K. Latychev, 2023. Influence of reef isostasy, dynamic topography, and glacial isostatic adjustment on sea-level records in Northeastern Australia. Communications Earth & Environment 4, 328, https://doi.org/10.1038/s43247-023-00967-3

(51) Weil-Accardo, J., P. Boyden, A. Rovere, N. Godeau, N. Jaosedy, A. Guihou, M. Humblet, M. N. Rajaonarivelo, **J. Austermann**, P. Deschamps, 2023. New dating and elevations of a fossil reef in Lembetabe, southwest Madagascar: eustatic and tectonic implications, Quaternary Science Reviews 313, https://doi.org/10.1016/j.quascirev.2023.108197

(50) Barnett*, R. L., **J. Austermann***, B. Dyer, M.W. Telfer, N.L.M Barlow, S.J. Boulton, A.S. Carr, *R.C. Creel*, 2023. Constraining the contribution of the Antarctic Ice Sheet to the Last Interglacial sea-level highstand. Science Advances 9, eadf0198. DOI:10.1126/sciadv.adf0198

* these two authors contributed equally

(49)** Paxman, G., H.C.P. Lau, **J. Austermann**, B.K. Holtzman, C. Havlin, 2023. Inference of the timescale-dependent apparent viscosity structure in the upper mantle beneath Greenland, AGU Advances, https://doi.org/10.1029/2022AV000751

** This work was highlighted in EOS: https://eos.org/editor-highlights/4d-viscosity-constraints-from-greenland

(48) *Hollyday, A.*, **J. Austermann**, A. Lloyd, M. Hoggard, F. Richards, A. Rovere, 2023. A revised estimate of early Pliocene global mean sea level using geodynamic models of the Patagonian slab window, Geochemistry, Geophysics, Geosystems, https://doi.org/10.1029/2022gc010648.

2022

(47) Austermann, J., A. Wickert, T. Pico, J. Kingslake, K.L. Callaghan, *R.C. Creel*, Glacial Isostatic Adjustment Shapes Proglacial Lakes Over Glacial Cycles, 2022. *Geophysical Research Letters* 49(24), https://doi.org/10.1029/2022gl101191.

(46) Bahadori, A., W.E. Holt, **J. Austermann**, L. Campbell, E.T. Rasbury, D.M. Davis, C.M. Calvelage, L.M. Flesch, The role of gravitational body forces in the development of metamorphic core complexes, 2022. *Nature Communications* vol. 13, 5646. https://doi.org/10.1038/s41467-022-33361-2

(45) Tawil-Morsink, K., **J. Austermann**, B. Dyer, O. Dumitru, W. F. Precht, M. Cashman, S. L. Goldstein, M. E. Raymo, 2022. Probabilistic investigation of global mean sea level during MIS 5a based on observations from Cave Hill, Barbados. *Quaternary Science Reviews*, 295(107783), https://doi.org/10.1016/j.quascirev.2022.107783.

(44) Creel, R.C., **J. Austermann**, N.S. Khan, W.J. D'Andrea, N. Balascio, B. Dyer, E. Ashe, W. Menke, 2022. Postglacial relative sea level in Norway, *Quaternary Science Reviews,* 282(107422), 107422.

(43)** Paxman, G.J.G., **J. Austermann**, *A. Hollyday*, 2022. Total Rebound: solid Earth isostatic response to the complete unloading of the Greenland and Antarctic Ice Sheets, *Scientific Reports* 12, 11399. https://doi.org/10.1038/s41598-022-15440-y

**In the top 100 (out of 3150) most downloaded Earth, Environment and Ecology papers in the journal in 2022.

(42) Bahadori, A., W.E. Holt, R. Feng, **J. Austermann**, K. Loughney, T. Salles, L. Moresi, R. Beucher, N. Lu, L. Flesch, C. Calvelage, T. Rasbury, D. Davis, A. Potochnik, W. Ward, K. Hatton, S. Haq, T. Smiley, K. Wooton, C. Badgley, 2022. Coupled influence of tectonics, climate, and surface processes on landscape evolution in southwestern North America. *Nature Communications* vol. 13. doi:10.1038/s41467-022-31903-2

(41) Pan, L., G.A. Milne, K. Latychev, S.L. Goldberg, **J. Austermann**, M.J. Hoggard, J.X. Mitrovica, 2022. The influence of lateral Earth structure on inferences of global ice volume during the Last Glacial Maximum. *Quaternary Science Reviews*, 290 (107644).

2021

(40) Paxman, G.J.G., K.J. Tinto, **J. Austermann**, 2021. Neogene uplift and landscape evolution in northern Greenland recorded by subglacial valley morphology. *JGR Earth Surface,* Vol. 126, Issue 12, https://doi.org/10.1029/2021jf006395

(39) Powell, E., L. Pan, M. Hoggard, K. Latychev, N. Gomez, **J. Austermann**, J.X. Mitrovica, 2021. The Impact of 3-D Earth Structure on Far-Field Sea Level Following Interglacial West Antarctic Ice Sheet Collapse, *Quaternary Science Reviews*, https://doi.org/10.1016/j.quascirev.2021.107256.

(38) Lau, H.C.P., **J. Austermann**, B. K. Holtzman, C. Havlin, A. Lloyd, C. Book, E. Hopper, 2021. Frequency Dependent Mantle Viscoelasticity via the Complex Viscosity: cases from Antarctica, *JGR Solid Earth*, https://doi.org/10.1029/2021JB022622.

(37) Daher, H., B.K. Arbic, J.G. Williams, J.K. Ansong, D.H. Boggs, M. Mueller, M. Schindelegger, **J. Austermann**, B.D. Cornuelle, E.B. Crawford, O.B. Fringer, H.C.P. Lau, S.J. Lock, A.C. Maloof, D. Menemenlis, J.X. Mitrovica, J.A.M Green, M. Huber, 2021. Long-term Earth-Moon evolution with high-level orbit and ocean tide models, *JGR Planets*, https://doi.org/10.1029/2021je006875.

(36) Austermann, J., M. Hoggard, K. Latychev, J.X. Mitrovica, 2021. The effect of lateral variations in Earth structure on last interglacial sea level, *Geophysical Journal International,* https://doi.org/10.1093/gji/ggab289.

(35) Dyer, B., **J. Austermann**, W.J. D'Andrea, *R.C. Creel,* M. R. Sandstrom, M. Cashman, A. Rovere, M.E. Raymo, 2021. Sea level trends across the Bahamas constrain peak Last Interglacial ice melt, *PNAS,* 118(33), e2026839118. https://doi.org/10.1073/pnas.2026839118.

(34) Dumitru, O.A., **J. Austermann**, V. J. Polyak, J. J. Fornós, Y. Asmerom, J. Ginés, A.Ginés, B. P. Onac, 2021. Sea-level stands over the past 6.5 million years from phreatic overgrowths on speleothems in Mallorcan caves, *Scientific Reports 11*, 261.

(33) Hoggard, M., **J. Austermann,** C. Randel, S. Stephenson, 2021. Observational estimates of dynamic topography through space and time. *AGU monograph* in In Mantle Convection and Surface Expressions (pp. 371–411). Wiley.

(32) Paxman, G.J.G, **J. Austermann**, K.J. Tinto, 2021. A fault-bounded palaeo-lake basin preserved beneath the Greenland Ice Sheet, *Earth and Planetary Science Letters*, Vol. 553:116647, doi:10.1016/j.epsl.2020.116647.

2020

(31) Rovere, A., M. Pappalardo, S. Richiano, M. Aguirre, R. M. Sandstrom, M. E. Raymo, **J. Austermann**, I. Castellanos, P. J. Hearty, 2020. Higher than present global mean sea level recorded by an Early Pliocene intertidal unit in Patagonia (Argentina). *Communications Earth & Environment*, 1(1). https://doi.org/10.1038/s43247-020-00067-6

(30) Mitrovica, J. X., **J. Austermann**, S. Coulson, J.R. Creveling, M. Hoggard, G.T. Jarvis, F.D. Richards, 2020. Dynamic Topography and Ice Age Paleoclimate. *Annual Review of Earth and Planetary Sciences,* Vol. 48:585-621, doi:10.1146/annurev-earth-082517-010225 (invited review).

(29) Austermann, J.**, C. Y. Chen, H. C. P. Lau, A. Maloof, K. Latychev, 2020. Constraints on mantle viscosity and Laurentide ice sheet evolution from pluvial paleolake shorelines in the western United States. *Earth and Planetary Science Letters 532,* doi:10.1016/j.epsl.2019.116006.

** This work was highlighted in EOS: https://eos.org/articles/an-ice-sheets-footprint-on-ancient-shorelines

2019

(28) Creveling, J. R., **J. Austermann,** A. Dutton, 2019. Uplift of Trail Ridge (Florida) by Karst Dissolution, Glacial Isostatic Adjustment, and Dynamic Topography. *Journal of Geophysical Research: Solid Earth 124,* doi:10.1029/2019JB018489

(27) *Dumitru*, O.A.*, **J. Austermann***, V. J. Polyak, J. J. Fornós, Y. Asmerom, J. Ginés, A. Ginés, B. P. Onac, 2019. New constraints on Pliocene sea level and ice volume from precisely dated speleothems. *Nature,* doi: 10.1038/s41586-019-1543-2.

*these two authors contributed equally

(26) Capron, E., A. Rovere, **J. Austermann**, Y. Axford, N.L.M. Barlow, A.E. Carlson, A. de Vernal, A. Dutton, R.E. Kopp, J.F. McManus, L. Menviel, B.L. Otto-Bliesner, A. Robinson, J.D. Shakun, P.C. Tzedakis, E.W. Wolff, 2019. Challenges and research priorities to understand interactions between climate, ice sheets and global mean sea level during past interglacials. *Quaternary Science Reviews* 219, p. 308-311 (not peer-reviewed).

(25) Coulson, S., T. Pico, **J. Austermann**, R. Moucha J. X. Mitrovica, 2019. The Role of Isostatic and Gravitational Effects in the Dynamics of the Messinian Salinity Crisis. *Earth and Planetary Science Letters 525,* doi:10.1016/j.epsl.2019.115760

(24) Austermann, J., A. Forte, 2019. The importance of dynamic topography for understanding past sea level changes. *Past Global Changes Magazine*, 27(1), doi.org/10.22498/pages.27.1.18 (not peer reviewed).

2018

(23) Lau, H. C. P., **J. Austermann**, J. X. Mitrovica, O. Crawford, D. Al-Attar, K. Latychev, 2018. Inferences of mantle viscosity based on ice age data sets: The effect of geographically sparse data on radial viscosity profiles. *Journal of Geophysical Research - Solid Earth,* doi.org/10.1029/2018JB015740.

(22) Pohl, A., **J. Austermann**, 2018. The sea-level fingerprint of Late Ordovician ice-sheet collapse. *Geology*, doi:10.1130/G40189.1

(21)** *Crawford, O.,* D. Al-Attar, J. Tromp, J. X. Mitrovica, **J. Austermann**, H. C. P. Lau, 2018. Quantifying the sensitivity of post-glacial sea level change to laterally varying viscosity. *Geophysical Journal International,* doi:10.1093/gji/ggy184.

** 'best student paper' award from *Geophysical Journal International* in 2018

(20) Fischer, H., et al., 2018. Paleoclimate constraints on a future warmer world, *Nature Geoscience*, doi:10.1038/s41561-018-0146-0.

(19) K. Ferrier, Q. Li, T. Pico, **J. Austermann**, 2018. Water storage in marine sediment: Implications for modeling sea-level change, paleo-ice volume, and the global seawater budget, *Geophysical Research Letters*, doi: 10.1002/2017GL076592.

2017

(18) Rooney, A. D., **J. Austermann**, E. F. Smith, Y. Li, D. Selby, C. M. Dehler, M. D. Schmitz, K. E. Karlstrom, F. A. Macdonald, 2017. Coupled Re-Os and U-Pb geochronology of the Tonian Chuar Group, Grand Canyon, *GSA Bulletin,* doi:10.1130/B31768.1.

(17) Ferrier, K., **J. Austermann**, J.X. Mitrovica, T. Pico, 2017. Incorporating sediment compaction into a gravitationally self-consistent model for ice age sea-level change. *Geophysical Journal International* ggx293, doi: 10.1093/gji/ggx293.

(16) *Dendy, S.,* **J. Austermann**, J. Creveling, J.X. Mitrovica, 2017. Sensitivity of Last Interglacial Sea Level High Stands to Ice Sheet Configuration During Marine Isotope Stage 6. *Quaternary Science Reviews* 171, p. 234-244.

(15) Austermann, J., J.X. Mitrovica, P. Huybers, A. Rovere, 2017. Detection of a Dynamic Topography Signal in Last Interglacial Sea Level Records. *Science Advances* 3(7), doi:10.1126/sciadv.1700457.

(14) Daradich, A., P. Huybers, J.X. Mitrovica, N.-H. Chan, **J. Austermann**, 2017. The Influence of True Polar Wander on Glacial Inception in North America. *Earth and Planetary Science Letters.* 461, 96-104.

2016

(13) Hay, C., H.C.P. Lau, N. Gomez, **J. Austermann,** E. Powell, J.X. Mitrovica, K. Latychev, D. Wiens, 2016. Sea-level fingerprints in a region of complex Earth structure: The case of WAIS. *Journal of Climate*, doi: 10.1175/JCLI-D-16-0388.1.

(12) Lau, H.C.P., J.X. Mitrovica, **J. Austermann**, O. Crawford, D. Al-Attar, K. Latychev, 2016. Inferences of Mantle Viscosity Based on Ice Age Datasets: I. Radial Structure. *Journal of Geophysical Research: Solid Earth*, doi:10.1002/2016JB013043.

(11) D'Alpoim Guedes, J., **J. Austermann**, J.X. Mitrovica, 2016. Lost foraging opportunities for East Asian hunter-gatherers due to rising sea level since the Last Glacial Maximum. *Geoarcheology*, doi:10.1002/gea.21542.

2015

(10) Austermann, J., J.X. Mitrovica, 2015a. Calculating gravitationally self-consistent sea level changes driven by dynamic topography. *Geophysical Journal International* 203(3), 1909-1922.

(9) Austermann, J., D. Pollard, J.X. Mitrovica, R. Moucha, A.M. Forte, R.M. DeConto, D. Rowley, M.E. Raymo, 2015b. The impact of dynamic topography change on Antarctic Ice Sheet stability in the Pliocene. *Geology* 43, 927-930, doi:10.1130/G36988.1.

(8) Rovere, A., P.J. Hearty, **J. Austermann**, J.X. Mitrovica, J. Gale, R. Moucha, A. Forte, M.E. Raymo, 2015. Mid-Pliocene shorelines of the US Atlantic coastal plain – an improved elevation database with comparison to Earth model predictions. *Earth Science Reviews* 145*,* 117-131.

(7) Creveling, J.R., J.X. Mitrovica, C.C. Hay, **J. Austermann**, R.E. Kopp, 2015. Revisiting tectonic corrections applied to Pleistocene sea-level Highstands. *Quaternary Science Reviews* 111, 72-80.

2014

(6) Austermann, J., B.T. Kaye, J.X. Mitrovica, P. Huybers, 2014. A statistical analysis of the correlation between Large Igneous Provinces and Lower Mantle Seismic Structure. *Geophysical Journal International* 197, 1-9, doi: 10.1093/gji/ggt500.

(5) Hay, C., J.X. Mitrovica, N. Gomez, J.R. Creveling, **J. Austermann**, R. Kopp, 2014. The sea-level fingerprints of ice-sheet collapse during interglacial periods. *Quaternary Science Review* 87, 60-69.

2013

(4) Austermann, J., J.X. Mitrovica, K. Latychev, G.A. Milne, 2013a. Barbados-based estimate of ice volume at Last Glacial Maximum affected by subducted plate. *Nature-Geoscience* 6, 553-557.

(3) Austermann J., G. Iaffaldano, 2013b. The role of the Zagros orogeny in slowing down Arabia-Eurasia convergence since ~5 Ma. *Tectonics* 32, 351-363.

before 2013

(2) Austermann J., Z. Ben-Avraham, P. Bird, O. Heidbach, G. Schubert, J. Stock, 2011. Quantifying the forces needed for the rapid change of Pacific plate motion at 6 Ma. *Earth and Planetary Science Letters* 307, 289-297.

(1) Schmelzeisen, M., **J. Austermann**, M. Kreiter, 2008. Plasmon mediated confocal dark-field microscopy. *Optics Express* 16, 17826-17841.

Invited Conference and Workshop Talks (meetings with regular participation not shown)

Austermann, J., The Interplay of Mantle Viscosity, Ice Sheet Evolution and Sea-Level – Discussion leader, Gordon Research Conference, Interior of the Earth, Volatiles, Melt and Viscosity: Consequences

for Mantle Evolution and Climate System Interactions, 2025, South Hadley, Massachusetts, USA.

Austermann, J., B. Dyer, A. Rovere, R. Creel, N. Barlow, O. Dumitru, O. Pollard, N. Gomez, M. Raymo, A. Dutton, Fingerprinting the timing and magnitude of melt contributions to Last Interglacial sea level, Changelings Meeting at the Comer Climate Conference, 2024, Leeward Farm, Wisconsin, USA.

Austermann, J., B. Dyer, A. Rovere, R. Creel, N. Barlow, O. Dumitru, O. Pollard, N. Gomez, M. Raymo, Fingerprinting melt contributions during the Last Interglacial, Palsea Conference, 2024, Santa Barbara, USA.

Austermann, J., G. Paxman, H. Lau, L. Lewright, Glacial isostatic adjustment around Greenland: The possible imprint of transient deformation on sea level and GPS observations and why it matters for future sea level change, Gordon Research Conference on Rock deformation, 2024, Bates College, USA.

Austermann, J., Solving the sea level equation: Earth's response to ice and ocean load changes, Clinic at Community Surface Dynamics Modeling Systems Annual Meeting, 2024, Montclair, USA.

Austermann, J., et al., Using GNSS Observations to better Understand Mantle Rheology, Ice Sheet History, and Sea Level Change around Greenland. American Geophysical Union Fall Meeting, 2023, San Francisco, USA. Invited talk.

Austermann, J., Sea Level for Society - Opportunities and Challenges in Coproducing Knowledge with Local Communities, GIA training school, 2023, Gävle Sweden.

Austermann, J., Invitation to speak at the Caltech Seismolab Centenial Symposium "Envisioning the Future of Geophysics", 2022, Pasadena, USA. Declined due to maternity leave.

Austermann, J., Panelist at the National Academy of Sciences community workshop: Identifying New Community-Driven Science Themes for NSF's Support of Paleo Perspectives on Climate Change (P2C2), 2021, online.

Austermann, J., Keynote presentation at the CSDMS 2021 Annual Meeting: Changing Landscapes and Seascapes: Modeling for Discovery, Decision-making and Communication, 2021, online.

Austermann, J., Sea level and Solid Earth Deformation, Fall Meeting of the National Academies of Sciences, Engineering, and Medicine's Committee on Solid Earth Geophysics, 2020, online.

Austermann, J., Modeling Glacial isostatic adjustment and dynamic topography, CoChE - Coastal Changes and Evolution Summer School, 2019, Sardinia, Italy.

Austermann, J., D. Al-Attar, W. Bangerth, M. Hoggard, Sensitivity kernels for geodynamic surface observables based on adjoint methods, American Geophysical Union Fall Meeting, 2018, San Francisco, USA. Invited talk.

Austermann, J., C. Y. Chen, H. C.P. Lau, K. Latychev, Investigating ice peripheral bulge dynamics in the western US using paleo lake shorelines, American Geophysical Union Fall Meeting, 2018, San Francisco, USA. Invited talk.

Austermann, J., A. Rovere, T. Lorscheid, Estimates of last interglacial global mean sea level from an extended sea level database and improved solid Earth models, Joint workshop PALSEA – QUIGS, Climate, ice sheets and sea level during past interglacial periods, 2018, Galloway, New Jersey, USA.

Austermann, J., Constraining mantle convection and linking it to long term climate change, Workshop on Convection in Nature, 2018, Princeton, New Jersey, USA.

Austermann, J., H.C.P. Lau, D. Al-Attar, C. Chen, Probing lateral variations in Earth's viscosity across timescales, Workshop on Glacial isostatic adjustment and elastic deformation, 2017, Reykjavic, Iceland.

Austermann, J., J.X. Mitrovica, P. Huybers, A. Rovere, S. Dendy, Sea level changes during the last interglacial, PAGES/OCCR workshop "Lessons learnt from paleoscience on a possible 1.5 – 2°C warmer

world in the future", 2017, Bern, Switzerland.

Austermann, J., Meltwater Pulses: Corals during the last deglaciation, Comer Climate Conference, 2016, Wisconsin, USA.

Austermann, J., J.X. Mitrovica, P. Huybers, A. Rovere, The role of mantle convection in understanding sea level and cryospheric changes during past warm periods, 12th International Conference on Paleoceanography, 2016, Utrecht, Netherlands.

Austermann, J., Sea level and glacial isostatic adjustment, Antarctica's Cenozoic Ice and Climate History, IODP Workshop at Texas A&M University, 2016, College Station, USA.

Austermann, J., H. Lau, J.X. Mitrovica, Towards reconciling viscosity inversion, CIDER Community Workshop, 2016, Marshall, USA.

Austermann, J., D. Pollard, J.X. Mitrovica, R. Moucha, A.M. Forte, R. DeConto, D.B. Rowley, M.E. Raymo, The impact of dynamic topography change on Antarctic Ice Sheet stability during the Mid-Pliocene Warm Period, American Geophysical Union Fall Meeting, 2015, San Francisco, USA. Invited talk.

Austermann, J., J.X. Mitrovica, D. Pollard, R. Moucha, A.M. Forte, R. DeConto, D.B. Rowley, A. Rovere, M.E. Raymo, The impact of dynamic topography on mid-Pliocene ice volume estimates, PALSEA Meeting: "Data-Model Integration and Comparison", 2015, Tokyo, Japan.

Austermann, J., J.X. Mitrovica, K. Latychev, A. Rovere, R. Moucha. Ice age sea level change on a dynamic Earth. American Geophysical Union Fall Meeting, 2014, San Francisco, USA. Invited talk.

Austermann, J., B.T. Kaye, J.X. Mitrovica, P.J. Huybers. Correlating large igneous provinces with lower mantle seismic structure – where is the plume generation zone? American Geophysical Union Fall Meeting, 2014, San Francisco, USA. Invited talk.

Invited Department talks

2024 Harvard University, Geophysics Seminar (BiSEPPS)
2024 NASA Goddard Flight Center, Colloquium
2023 Rutgers University, Colloquium
2023 NASA Goddard Institute for Space Studies, Sea level seminar
2023 University of Miami, Geotopics Seminar
2023 Stanford University, Geophysics Seminar (2 talks)
2022 Syracuse University, K. Douglas Nelson Seminar
2022 Western Washington University, Seminar series
2022 Dartmouth University, Seminar series
2022 State University of New York at New Paltz, Harrington lecture
2021 University of South Florida, Department seminar
2021 University of Texas, Austin, DeFord lecture
2021 Rice University, Department seminar
2021 University Illinois Urbana-Champaign, Department seminar
2021 ETH Zürich, Department seminar
2021 UCLA, Geophysics and Tectonics seminar
2021 Virginia Tech, Departmental Colloquium
2021 Lehigh University, Departmental Colloquium
2021 University of Alabama, CIG Distinguished Speaker

2020 Washington University, Departmental Colloquium
2020 University of Hawaii, CIG Distinguished Speaker
2020 University of Southern California, Paleo/Environmental Seminar
2020 University of Victoria, Department Seminar
2020 Montclair State University, Sustainability Seminar Series
2019 MIT, PAOC colloquium
2019 Yale University, Department colloquium
2019 Binghampton University, Department seminar
2018 Georgia Tech, Department seminar
2018 University of Heidelberg, Department seminar
2017 Geoforschungszentrum (GFZ) Potsdam, Special seminar
2017 University of Oslo, CEED seminar
2017 University of Bergen, Department seminar
2017 University of Durham, Department seminar
2017 University of Oxford, Department seminar
2017 ETH Zürich, Department seminar
2017 Ludwig-Maximilians Universität Munich, Geophysics Seminar
2016 Princeton University, Department seminar
2016 University of Chicago, Department seminar
2016 Brown University, Department seminar
2015 Massachusetts Institute of Technology, Department seminar
2015 Lamont-Doherty Earth Observatory, Columbia University, Colloquium
2015 University of Cambridge, Bullard Seminar Series
2015 MARUM – Center for Marine Environmental Sciences, University of Bremen, Special seminar
2015 University of California, Berkeley, Seismological Laboratory Seminar
2014 Princeton University, Brown Bag Seminar

Selected Media Coverage

Documentary:

NANO New York is sinking (2023) by 3Sat
Surviving Hothouse Earth (2022) by ZDF and Arte

Interviews:

Tough Times with Lou Young (Podcast) (2023)
The Gothamist (2021): *"Could A Surfside Building Disaster Happen On The NY Or NJ Coast?"*
Live Science (2020): *"How will sea levels change with climate change?"*

Selected news articles about peer-reviewed papers:

SciTechDaily (2021): *"Future Sea Level Rise: What Are We Missing, and How Much Should It Scare Us"*
Vice (2020): "*A Vast Ancient Lake Is Hidden Deep Under Greenland's Ice, Scientists Discover*"
EOS (2020): *"An Ice Sheet's Footprint on Ancient Shorelines"*
Fox News (2019): *"Past sea-level rise? Scientists find evidence several million years old"*
Science Daily (2019): *"Evidence for past high-level sea rise"*
LA Times (2013): *"Ice mass the size of Greenland overlooked in climate models"*

Earth Institute State of the Planet:

"Sea Level Rise: A Crash Course for All" (2023)
"International Team to Drill Deep Through Antarctic Ice Into Ancient Sediments" (2021)
"Some Past Sea Levels May Not Have Been as High as Thought, Says Study of Rising and Sinking Landmasses"(2021)
"Scientists Have Discovered an Ancient Lake Bed Deep Beneath the Greenland Ice" (2020)
"Greenland Rising: The Future of Greenland's Waterfront" (2020)
"Should New York build a storm surge barrier?" (2019)
"Team deciphers sea-level rise from last time Earth's CO2 was as high as today" (2019)
"A world warmer by just 2°C will be very different from today" (2018)
"How high can seas rise? On a tropical isle, the answers are not always obvious" (2018)

Supervision (at Lamont unless noted otherwise)

Research Staff:

Dr. Konstantin Latychev (part-time Staff Associate), 2/2018 – 2/2021

Dr. Konstantin Latychev (consultant), 2/2023 – 1/2026

Postdoctoral Researcher:

Dr. Ben Stoker, 1/2025 – 12/2026
Dr. Fiona Clerc (co-advised with Roger Buck, Jonny Kingslake), 9/2022 – 8/2024
now a postdoctoral researcher at Stanford University
Dr. Evelyn Powell (co-advised with Jim Davis, Andrew Lloyd), 2/2022 – 8/2024
Dr. Oana Dumitru (co-advised with Maureen Raymo, Steve Goldstein), 2/2020 – 12/2023
now an Assistant Professor at the University of Florida
Dr. Alireza Bahadori, 1/2022 – 10/2023
now an Associate Editor at Nature Geoscience
Dr. Andrew Lloyd, 1/2020 – 06/2023
now an Assistant Research Professor at Lamont-Doherty Earth Observatory
Dr. Kerry Callaghan, 2/2021 – 12/2022
now an Assistant Professor at the University of Illinois, Chigaco
Dr. Guy Paxman (co-advised with Kirsty Tinto), 12/2019 – 4/2022
now an Assistant Professor (Research) at Durham University
Dr. Mark Hoggard (co-advised with Jerry X. Mitrovica, Harvard U.), 1/2018 – 12/2020
now an ARC DECRA Research Fellow at the Australian National University

Graduate Students:

Sam Chester (co-advised with Billy D'Andrea), 9/2022 – 2027
Lauren Lewright (primary advisor), 9/2022 - 2027
Casey Brayton (advising 1 thesis chapter, primary advisor: Kirsty Tinto), 9/2020 – 2026
Raf Antwerpen (advising 1 thesis chapter, primary advisor: Marco Tedesco), 9/2020 – 8/2024
Andrew Hollyday (primary advisor), 7/2019 – 3/2025
Roger Creel (primary advisor), 9/2018 – 11/2023
now a postdoctoral fellow at Woods Hole Oceanographic Institution

Graduate student committee member (in addition to the students above):

Apollonia Arellano (2023 - 2028)
Red Stein (2022 - 2027)

Bennett Slibeck (2021 - 2026)
Syaf Rusedi (2021 - 2024), Nanyang Technological University, external member
Jingyi Zhuang (2019 - 2024)

Graduate Examination Committee (in addition to the students above):
Sarah Giles (primary advisor: Nick Cristie-Blick), 2023
Jaewon Lee (primary advisor: Yutian Wu), 2023
Jennifer Angel-Amaya (primary advisor: Lex van Geen), 2023
Dana Raiter (primary advisor: Lorenzo Polvani), 2022
Ingrid Izaguirre (primary advisor: Bärbel Hönisch), 2021
Tess Walther (primary advisor: Nicolas Young), 2021
Allie Balter (primary advisor: Joerg Schaeffer), 2020
Corey Lesk (primary advisor: Radley Horton), 2020
Joohee Kim (primary advisor: Steve Goldsetin), 2020
Shanice Bailey (primary advisor: Ryan Abernathey), 2020

Research Assistants:
Kalila Morsink, 9/2019 – 2/2020
Cameron Book, 7/2018 – 9/2018
Cody Randel, 5/2018 – 8/2018
Sarah Dendy (at Harvard University), 2015 – 2016

Thesis students:
Bridget Craig (undergraduate thesis), 9/2019 – 5/2020
Kalila Morsink (undergraduate thesis), 9/2018 – 5/2019
Raf Antwerpen (master's thesis), 9/2019 – 8/2021

Fieldwork

Pleistocene corals and shorelines on Hawaii (Austermann PI)	2023
Last interglacial corals and shorelines on the Bahamas (Austermann PI)	2019
Surveying Pleistocene corals on Barbados (Austermann participant)	2018

Teaching

Columbia University (n = students enrolled, * denotes estimates; a = students advised 1:1; X = average overall score, 5.0 is highest score)

EESC W 3904 Independent Research in Climate System Science (n = 4)	fall 2024
EESC W 3801 Environmental Science Research Seminar (n = 63, a = 7, X = 5.0)	spring 2024
EESC W 4235 Sea Level Change (n = 8, X = 5.0)	spring 2023
EESC W 3801 Environmental Science Research Seminar (n = 60*, a = 7, X = 4.67)	spring 2023
EESC W 3800 Environmental Science Research Seminar (n = 60*, a = 6, X = 5.0)	fall 2022
EESC W 4235 Sea Level Change (n = 13, X = 5.0)	spring 2021
EESC W 3901 Environmental Science Research Seminar (n = 60*, a = 6, X = 4.71)	spring 2021
EESC W 3800 Environmental Science Research Seminar (n = 60*, a = 5, X = 4.83)	fall 2020
EESC W 4235 Sea Level Change (n = 8, X = not assessed due to COVID)	spring 2020

received the DEES Undergraduate Outstanding Professor Award for this class

EESC GR 9600 Seminar in Paleoclimatology (n = 9, X = 5.0)	fall 2019
EESC W 4235 Sea Level Change (n = 11, X = 5.0)	spring 2019
EESC W 3801 Environmental Science Research Seminar (n = 56, a = 8, X = 4.20)	spring 2019
EESC W 3800 Environmental Science Research Seminar (n = 59, a = 7, X = 4.57)	fall 2018

Harvard University

EPS 261 Sea Level Change (TA - teaching assistant)	2016
EPS 205 Geophysics: A Primer (TA)	2014
EPS 109 Earth Resources and the Environment (TA)	2013

Technische Universität Darmstadt

Experimental Physics; Optics (TA)	2009
Linear Algebra for Physicists (TA)	2007

Service to the University, Profession, and Public

Service to the Department

DEES Student Awards Committee (lead)	2023/2024
DEES Graduate Program Committee	since 2022
DEES Diversity Committee	since 2022
DEES Nominating Committee for Associate Chair	2021, 2024
DEES Student Awards Committee	2019, 2021
DEES Graduate admissions committee	2018-2021
Cambridge University, Department Equality and Diversity Committee	2017

Service to Lamont-Doherty Earth Observatory

Lamont 75 Anniversary Advisory Committee	2024
Lamont Diversity, Equity, and Inclusion (LDEI) Task Force	2020
Lamont Vision Committee (within SGT and Lamont-wide)	2020
Lamont Geodynamics seminar series	2018-2020

Service to the University

Climate School, Academic planning Earth and Ecosystems Group	2022/2023
Advisory Committee for High Performance Computing at Columbia	2019-2022
Earth Institute, Postdoctoral Selection Committee	2020

Service to the Profession

Secretary of the Tectonophysics Section of the American Geophysical Union (2023 – 2024). Coordinating OSPA (Outstanding Student Presentation Award). Reviewing student travel grant applications. Initiated caregiver awards; set up process and reviewed applications. The American Geophysical Union (AGU) is an international, nonprofit scientific association whose mission is to promote discovery in Earth and space science for the benefit of humanity. AGU has nearly 60,000 members in 137 countries.

Working group leader – PALSEA (2018 – 2023). One of four leaders, treasurer and ECR (Early Career Researcher) liaison of the PAGES (Past Global Changes) and INQUA (International Union for Quaternary Research) working group PALeo constraints on future SEA level rise, palseagroup.weebly.com. PALSEA is an international working group that holds annual meetings for approximately 50 participants. PALSEA is acknowledged in around 20 publications each year for its community building capacity.

Principal Developer of the open source code ASPECT (2017-2021), which is the Advanced Solver for Problems in Earth's ConvecTion: github.com/geodynamics/aspect (active since 2014, principal developer since 2017). ASPECT is an NSF supported computational code intended to solve the equations that describe thermo-chemical convection in the context of Earth's mantle. The ASPECT software has been cited 177 times (as of 01/15/2024).

Developing teaching material: As part of the GeoContext group (geo-context.github.io/) we have developed short storytelling teaching modules that highlight the complicated social and political backdrop that accompanied past geologic discoveries. The aim of these modules is to acknowledge and highlight this aspect of the Earth Sciences in classes.

CIG (Computational Infrastructure for Geodynamics) committees: Science Steering Committee 2025-2026; nomination committee for CIG leadership 2020, 2021 (executive committee and science steering committee); nomination committee for CIG Distinguished Speaker Series 2021. CIG is a community-driven, externally funded organization that advances Earth science by developing and disseminating software for geophysics and related fields. CIG hosts and supports over 15 internationally and widely used geophysical codes.

CSDMS (Community Surface Dynamics Modeling System) Scientific Program Committee for Annual meeting (2023). CSDMS is a diverse community of experts promoting the modeling of earth surface processes by developing, supporting, and disseminating integrated software modules. CSDMS has approximately 2372 members (as of 01/15/2024).

NSF proposal evaluation panel participant (2023)

Organized meetings:

- *Improving understanding of ice sheet and solid earth processes driving paleo sea level change;* PALSEA-SERCE 2021 meeting, 13th-16th September 2021; online; Lead organizer.
- *PALSEA Express,* online workshop, 14th – 15th September 2020
- *Using ecological and chronological data to improve proxy-based paleo sea level reconstructions*; PALSEA 2019 workshop, 21st – 23rd July 2019; Trinity College, Dublin

Session convener & chair:

- Everything Last Interglacial: Climate, Sea Level, and Ice (AGU 2024)
- Interaction between geodynamic, surface and climate processes through space and time (AGU 2024)
- Investigations of Ice Sheets, Solid Earth, and Sea Level from a Glacial Isostatic Adjustment Perspective (AGU 2023)
- Linkages between paleoclimate, paleoceanography, polar wander, and tectonic changes during the Paleogene (AGU 2021)
- In and out of the ice age: Sea level, ice sheets, and climate during glacial-interglacial transitions (AGU 2020)
- Centennial Session: One Hundred Years of Ice Sheet and Sea Level Science (AGU 2019)
- Mapping and interpreting sea-level change through time and space (INQUA 2019)
- Sea level and ice sheet reconstructions over glacial cycles (AGU 2018)
- Reconciling Observations and Predictions of Dynamic Topography on Earth (AGU 2016)

Manuscripts reviewed for: Nature, Nature Geosciences, Nature Communications, Science Advances, Geology, JGR: Solid Earth, Geophysical Journal International, Earth and Planetary Science Letters, Quaternary Science Reviews, Tectonica, Tectonophysics, G3 (Geochemistry, Geophysics, Geosystems), Geoscience Letters, West Australian Basins Symposium, Earth Science, Systems and Society

Proposals reviewed for: NSF Marine Geology and Geophysics, NSF Antarctic Earth Sciences, NSF Frontiers of Earth Sciences, NSF Geoinformatics, NSF Geophysics, PRF (Petroleum Research Fund) Doctoral New Investigator Grant, The Icelandic Research Fund

White paper: IDP / Summit-SCO Greenland Scientific Traverse Planning Workshop: NW Greenland Traverse, co-organizer of the white paper with Guy Paxman and Erich Osterberg, 2021.

Service and Dissemination to the Public

Earth Observations - Conversations with Lamont Scientists: Sea level and coastal change	2025
Lecture at INSPIRE Community Program for High School students	2024
Lamont Neighbors Reception	2024
Climate Reality Project, Metro New York Chapter, Member meeting: *"Sea level rise in New York City"*	2023
Lamont Public lecture: "*How Much Will Sea Level Rise? Diving into the Past to Predict Future Change*"	2023
Lamont Open House, exhibit: Sea level change – Back to the future	since 2022
Presentation for Columbia's Office of Postdoctoral Affairs: "*How to give a job talk*"	2022
Lamont Open House, Ted talk: *Solid facts and missing pieces: What rocks can tell us about sea level change*	2021
Waterfront Alliance's Climate Week NYC event *"Art at the BlueLine: A Conversation on Climate and Social Resilience with Artists"*	2021
Science-on-Hudson lecture at Nevis Labs "*How much will sea level rise? Diving into the past to model future change*"	2021
Earth Institute Live K12 series "*Tropical Tales of Polar Ice*"	2021
The Brooklyn Rail Earth Day event *"The Sound of Science: Artists and Scientists Discuss Climate Change"*	2021
SciArt website: http://scisound.com/	2020
Participation in "*Exploring SciArt: Between Climatology and Composition*" sponsored by the German Consulate	2020
Participation in "*Sea Level Change: a SciArt Concert and Lecture*" at the NYC Climate week	2020
Participation in "*Keepin' Sustainability Alive Inside*" series from the NYC Department of Education	2020
Panel discussion on NY storm surge barriers, Columbia Law School	2019
Lamont Open House	2019
Columbia University Academic Career Panel for Postdocs and PhD Students	2019
American Museum of Natural History, Earth Fest	2019
Explorer's Club, career talk	2019

Lamont Open House	2018
American Museum of Natural History, Sun and Earth Day	2018
The Oxford Colloquium	2017
Harvard Science in the News, Day Conference	2016
Harvard Science in the News, Graduate student lecture series	2015
Harvard Science in the News, Science by the Pint	2014
Judge for the 8th Grade Cambridge Street Upper School Climate Change project	2014