

# Bryce A. Mitsunaga

[bryce\\_mitsunaga@g.harvard.edu](mailto:bryce_mitsunaga@g.harvard.edu)

[bmitsunaga.com](http://bmitsunaga.com)

Harvard University, Department of Human Evolutionary Biology  
11 Divinity Avenue, Cambridge, MA 02138

## Education

Brown University	Ph.D., Earth, Environmental, and Planetary Sciences	09/2018	02/2024
	M.S., Earth, Environmental, and Planetary Sciences	09/2018	05/2020
University of California, Los Angeles	M.S., Geochemistry	09/2015	06/2018
Williams College	B.A., Geosciences	09/2009	06/2013
Mansfield College, University of Oxford	Visiting Student	10/2011	06/2012

## Employment History

Harvard University	Postdoctoral scholar (w/ Dr. Kevin Uno)	03/2024	
International Ocean Discovery Program	Organic geochemist, IODP Expedition 397: Iberian Margin Paleoclimate	10/2022	12/2022
Yale University	Research assistant (w/ Dr. Ruth Blake)	06/2015	09/2015
Iris Environmental	Staff scientist	01/2014	04/2015
American Geosciences Institute	<i>Earth Magazine</i> extern	07/2013	09/2014
Williams-Mystic Marine Science Center	Research assistant (w/ Dr. Lisa Gilbert)	06/2012	08/2012

## Research Fellowships & Grants

Geological Society of America Graduate Student Research Grant		05/2023
IODP Post-Expedition Activity Award		05/2023
Institute at Brown for Environment and Society Graduate Research, Training, and Travel Award		04/2023
Geological Society of America Graduate Student Research Grant		06/2022
International Association of Geochemistry PhD Student Research Grant		05/2017
National Science Foundation Graduate Research Fellowship		06/2016

## Refereed Journal Articles – Published, Accepted

- Mitsunaga, B., Ouertani, S., Lupien, R., Stubbs, B., Deino, A., Kingston, J., Stockhecke, M., Brown, E., Russell, J., 2023, High-latitude, Indian Ocean, and orbital influences on eastern African hydroclimate

across the Plio-Pleistocene boundary. *Paleoceanography and Paleoclimatology*.  
<https://doi.org/10.1029/2023PA004671>.

- Bricker, H., Bateman, J., Elliott, B., **Mitsunaga, B.**, Mering, J., Foster, J., Yanes, Y., Oches, E., Eagle, R., Tripathi, A., 2023, A multi-region study of carbonate clumped isotope data from terrestrial snails. *Palaeogeography, Palaeoclimatology, Palaeoecology*. <https://doi.org/10.1016/j.palaeo.2023.111754>.
- Hodell, D., Abrantes, F., Alvarez Zarikian, C., **Expedition 397 Scientists**, 2023, Expedition 397 Preliminary Report: Iberian Margian Paleoclimate. International Ocean Discovery Program. <https://doi.org/10.14379/iodp.pr.397.2023>.
- Lopez-Maldonado, R., Bateman, J., Ellis, A., Bader, N., Ramirez, P., Arnold, A., Ajoku, O., Lee, H., Jesmok, G., Upadhyay, D., **Mitsunaga, B.**, Elliott, B., Tabor, C., Tripathi, A., 2023, Paleoclimate changes in the Pacific Northwest over the past 36,000 years from clumped isotope measurements and model analysis. *Paleoceanography and Paleoclimatology*. <https://doi.org/10.1029/2021PA004266>.
- **Mitsunaga, B.**, Novak, J., Zhao, X., Dillon, J., Huang, Y., Herbert, T., 2022, Alkenone  $\delta^2\text{H}$  values – a viable seawater  $\delta^2\text{H}$  proxy? New core-top  $\delta^2\text{H}_{\text{C}37:3}$  and  $\delta^2\text{H}_{\text{C}37:2}$  values suggest inter-alkenone and alkenone-water hydrogen isotope fractionation are independent of temperature and salinity. *Geochimica et Cosmochimica Acta*. <https://doi.org/10.1016/j.gca.2022.10.024>.
- Li, L., Fan, M., Davila, N., Jesmok, G., **Mitsunaga, B.**, Tripathi, A., Orme, D., 2018, Carbonate clumped and oxygen isotope evidence for late Eocene high elevation of the east-central Tibetan Plateau. *GSA Bulletin*. <https://doi.org/10.1130/B32060.1>.

### Refereed Journal Articles – In Revision, Submitted, in Preparation

- **Mitsunaga, B.**, Ouertani, S., Lupien, R., Stubbs, B., Deino, A., Kingston, J., Stockhecke, M., Brown, E., Russell, J., Higher rainfall, expanding grasslands: Evidence for an enhanced seasonal precipitation regime in Plio-Pleistocene eastern Africa. Submitted, *Geology*.
- **Mitsunaga, B.**, Jewell, A., Buchanan, S., Crocker, A., Herbert, T., Russell, J., Plio-Pleistocene decoupling of the Northwest African summer and winter monsoons. In prep.
- **Mitsunaga, B.**, Mering, J., Li, T., Bateman, J., Burford, S., Eagle, R., Li, G., Tripathi, A., Isotopic and petrographic analyses of pedogenic carbonates across the Pleistocene-Holocene boundary in the Chinese Loess Plateau. In revision, *Geochemistry, Geophysics, Geosystems*.

### Invited Talks

- **Mitsunaga, B.**, Lupien, R., Jewell, A., Ouertani, S., Buchanan, S., Stubbs, B., Deino, A., Kingston, J., Stockhecke, M., Brown, E., Crocker, A., Herbert, T., Russell, J., 2023, On the heterogeneity of Plio-Pleistocene African hydroclimate: Processes and patterns from North (ODP Site 659) and East (Baringo-Tugen Hills-Barsemoi Basin) Africa, Geological Society of America Annual Meeting.

### Talks

- **Mitsunaga, B.**, Lupien, R., Jewell, A., Ouertani, S., Buchanan, S., Stubbs, B., Deino, A., Kingston, J., Stockhecke, M., Brown, E., Crocker, A., Herbert, T., Russell, J., 2023, On the heterogeneity of Plio-Pleistocene African hydroclimate: Processes and patterns from North (ODP Site 659) and East (Baringo-Tugen Hills-Barsemoi Basin) Africa, XXI International Union for Quaternary Research Congress.
- **Mitsunaga, B.**, Ouertani, S., Lupien, R., Stubbs, B., Deino, A., Kingston, J., Stockhecke, M., Brown, E., Russell, J., 2022, A wetter East Africa at 3 Ma? Lipid biomarker records of Plio-Pleistocene hydroclimatic change from the Baringo-Tugen Hills-Barsemoi Basin, Kenya, 7<sup>th</sup> International Hominid Sites and Paleolakes Drilling Project meeting.
- **Mitsunaga, B.**, Ouertani, S., Lupien, R., Stubbs, B., Deino, A., Kingston, J., Stockhecke, M., Brown, E., Russell, J., 2022, A wetter East Africa at 3 Ma? Lipid biomarker records of Plio-Pleistocene hydroclimatic

change from the Baringo-Tugen Hills-Barsemoi Basin, Kenya, Brown University Climate & Environment (“Lunch Bunch”) seminar.

- **Mitsunaga, B.**, Novak, J., Zhao, X., Dillon, J., Huang, Y., Herbert, T., 2020, Alkenone-specific  $\delta^2\text{H}$ : A New Global Core Top Dataset and Its Implications for Paleo-Salinity and -Seawater  $\delta^2\text{H}$  Reconstructions, Fall 2020 Meeting of the American Geophysical Union.
- **Mitsunaga, B.**, Dillon, J., Zhao, X., Herbert, T., 2020, Alkenone-specific  $\delta^2\text{H}$ : A new global core-top dataset and its implications for paleo-salinity and -seawater  $\delta^2\text{H}$  reconstructions, Brown University Climate & Environment (“Lunch Bunch”) seminar.

## Posters

- **Mitsunaga, B.**, Jewell, A., Buchanan, S., Crocker, A., Herbert, T., Russell, J., 2022, An orbital-scale reconstruction of changes in North African Rainfall, 2.5-3.1 Ma, using *n*-alkane-specific  $\delta^2\text{H}$  values from ODP Site 659. Fall Meeting of the American Geophysical Union.
- **Mitsunaga, B.**, Novak, J., Zhao, X., Dillon, J., Huang, Y., Herbert, T., 2022, Alkenone-specific  $\delta^2\text{H}$ : A New Global Core Top Dataset and Its Implications for Paleo-Salinity and -Seawater  $\delta^2\text{H}$  Reconstructions, Organic Geochemistry Gordon Research Conference.
- **Mitsunaga, B.**, Stubbs, B., Lupien, R., Deino, A., Kingston, J., Stockhecke, M., Brown, E., Russel, J., 2019, A Leaf Wax Biomarker Record of Plio-Pleistocene Environmental Change from the Baringo Basin (Tugen Hills), Kenya, Fall Meeting of the American Geophysical Union.
- **Mitsunaga, B.**, Mosenfelder, J., Tripathi, A., 2017, Quantifying the  $\Delta_{63-\Delta_{47}}$  offset: Determining mineral- and temperature-dependent acid fractionation factors through mass spectrometric analyses of stochastically-reordered carbonates, Fall Meeting of the American Geophysical Union.
- **Mitsunaga, B.**, Mosenfelder, J., Tripathi, A., 2017, Quantifying the  $\Delta_{63-\Delta_{47}}$  offset: Determining mineral- and temperature-dependent acid fractionation factors through mass spectrometric analyses of stochastically-reordered carbonates, Geological Society of America Annual Meeting.
- **Mitsunaga, B.**, Burford, S., Mering, J., Eagle, R., Tripathi, A., 2016, A reconstruction of temperature and  $\delta^{18}\text{O}$  data since the Last Glacial Maximum using soil and gastropods from the Chinese Loess Plateau, Fall Meeting of the American Geophysical Union.
- **Mitsunaga, B.**, Burford, S., Mering, J., Eagle, R., Tripathi, A., 2016, A reconstruction of temperature and  $\delta^{18}\text{O}$  data at the Last Glacial Maximum using soil and gastropods from the Chinese Loess Plateau, 5<sup>th</sup> International Clumped Isotope Workshop.
- **Mitsunaga, B.**, Mering, J., Petryshyn, V., Dunbar, R., Cohen, A., Liu, X., Kaufman, D., Eagle, R., Tripathi, A., 2014, A clumped isotope calibration for lacustrine carbonates, Geological Society of America Annual Meeting.
- **Mitsunaga, B.**, Mering, J., Petryshyn, V., Dunbar, R., Cohen, A., Liu, X., Kaufman, D., Eagle, R., Tripathi, A., 2014, A clumped isotope calibration for lacustrine carbonates, Fall Meeting of the American Geophysical Union.
- **Mitsunaga, B.**, Mering, J., Petryshyn, V., Dunbar, R., Cohen, A., Liu, X., Kaufman, D., Eagle, R., Tripathi, A., 2014, A clumped isotope calibration for lacustrine carbonates, 4th Annual International Workshop on Clumped Isotopes.

## Teaching Assistantships

Brown University	EEPS 1110: Descriptive Coastal and Estuarine Oceanography	01/2022	05/2022
	EEPS 1310: The Global Water Cycle	01/2021	05/2021
University of California, Los Angeles	EPSS 1: Introduction to Earth Science	09/2015	12/2015

## Undergraduate Mentorship

- Brown University: Nat Feikes, Adin Richards, Wylie de Groff, Samantha Ouertani, Brandon Stubbs
- Rice University: Solana Buchanan
- University of California, Los Angeles: Hayley Bricker, Nathan Davila, Savannah Trewman, Sean Burford, Benjamin Tran
- Williams College: Jorge Castro

## Science Communication

- UCLA oceanographer suggests new way to test how global warming impact endangered corals, 2015, California Metal Photography, [http://californiametalphoto.com/ocean\\_acidification\\_coral\\_reefs.pdf](http://californiametalphoto.com/ocean_acidification_coral_reefs.pdf).
- Crustal temperature explains uneven distribution of lunar impact craters, 2014, *Earth Magazine*, print.
- Undergraduates build and launch a satellite to measure atmospheric drag, 2013, *EARTH Magazine*, <http://www.earthmagazine.org/article/undergraduates-build-and-launch-satellite-measure-atmospheric-drag>.
- Arsenic in wells in Vietnam suggests dig-deep approach has issues, 2013, *EARTH Magazine*, <http://www.earthmagazine.org/article/arsenic-wells-vietnam-suggests-dig-deeper-approach-has-issues>.
- Blogging on EARTH: A letter from field camp, 2013, *EARTH Magazine*, <http://www.earthmagazine.org/article/blogging-earth-letter-field-camp>.

## Workshops & Short Courses Attended

University of Nairobi	7 <sup>th</sup> International Hominid Sites and Paleolakes Drilling Program workshop	07/2022
Chicago	International Ocean Drilling Program Science Mission Requirements workshop	05/2022
University of Arizona	5 <sup>th</sup> International Hominid Sites and Paleolake Drilling Program workshop	01/2019
Arizona State University	Secondary Ion Mass Spectrometry Workshop	01/2018
University of Minnesota Twin Cities	LacCore Drilling and Coring Summer Institute	07/2017
Urbino, Italy	9 <sup>th</sup> International Course on Foraminifera	06/2016

## Outreach & Scientific Service

- Co-convener, African Paleoclimate session, Fall 2023 Meeting of the American Geophysical Union
- Peer reviewer at *Climate of the Past* (n = 1), *Nature Communications* (n = 1)
- Co-convener, Water Isotopes session, Fall 2022 Meeting of the American Geophysical Union
- AGiLE (AAPI in Geosciences: Inclusivity, Leadership, and Experience) REU coordinator
- Brown University
  - Department of Earth, Planetary, and Space Sciences graduate student association (“GeoClub”) first-year mentor coordinator, 2021-2023
  - GeoClub co-president, 2019-2020
  - Leadership Alliance Study Group leader, 2019

- University of California, Los Angeles
  - Exploring Your Universe! 2017 – Team leader, Rocks, Minerals, and Fossils exhibit
  - Exploring Your Universe! 2016 – Team leader, Rocks and Minerals exhibit
  - Exploring Your Universe! 2015 – Team leader, Dinosaurs and Fossils exhibit

### **Professional Memberships**

- American Geophysical Union
- Geological Society of America

### **Geochemical and Computational Skillsets**

- Organic geochemical instrumentation
  - ASE, GC-FID, -MS, -IRMS (Delta V Plus), EA IsoLink
- Inorganic geochemical instrumentation
  - Thermo 253 Plus, Nu Perspective IRMS
- Coding languages: Python, MATLAB
- Time series and spectral analyses
- Manipulation of large spatiotemporal environmental datasets and climate model output