

Janet E. Burke

Michigan State University
Center for Integrative Studies in General Sciences
North Kedzie Hall
East Lansing, MI 48824
burkej25@msu.edu

PROFESSIONAL APPOINTMENTS

Assistant Professor - Fixed Term, Integrative Studies in General Sciences, Michigan State University	Present
Instructor, Integrative Studies in General Sciences, Michigan State University	8/2023 – 08/2024

EDUCATION

Michigan State University

NSF-OCE Postdoctoral Fellow, Earth and Environmental Sciences (advisors: Dalton Hardisty and Jennifer Fehrenbacher – Oregon State University)	01/2022 – 12/2023
Research Associate, Earth and Environmental Sciences (advisor: Dalton Hardisty)	03/2020 – 12/2021

Yale University

PhD. in Geology and Geophysics (now Earth and Planetary Science) Committee: Pincelli Hull (advisor), Noah Planavsky, Derek Briggs, Ellen Thomas	09/2014 – 03/2020
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Smith College

B.A. in Biological Sciences, Environmental Science Minor	09/2011 – 01/2014
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Montgomery College – Germantown Campus

A.A. in General Studies 2011 Valedictorian	09/2008 – 05/2011
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FELLOWSHIPS, AWARDS AND HONORS

CISGS Ralph and Allison Taggart Endowed Teaching Award	2025
Michigan State University Epistemic Justice Fellowship	2025
National Science Foundation Ocean Sciences Postdoctoral Research Fellowship	2022 - 2024
National Science Foundation Graduate Research Fellowship	2015 – 2019
Yale University Hammer Prize for Outstanding Geology Graduate Student	2019
Yale Institute for Biospheric Studies Doctoral Improvement Grant	2017
Naturalis Biodiversity Centre Martin Fellowship	2017
Bermuda Institute of Ocean Science Grant-in-Aid of Research	2016
Yale Institute for Biospheric Studies Doctoral Pilot Grant	2016
Paleontological Society MAPS Outstanding Student Research Award	2016
Cushman Foundation for Foraminiferal Research Sliter Research Award	2015
Phi Beta Kappa Society	2014
Phi Theta Kappa Hites Scholarship	2011
Montgomery College Board of Trustees Scholarship	2011

TEACHING

Instructor of Record – Michigan State University, Center for Integrative Studies in General Sciences

Spring 2026

ISP203A – Global Change

Section 005, 147 students

Section 007, 61 students

ISE322 – Foundational Earth Systems for Secondary Science Education

Section 001, 20 students

Fall 2025

ISP203A – Global Change

Section 005, 141 students

Section 007, 167 students

Section 009, 165 students

ISB202 – Applied Environmental and Organismal Biology

Section 008, 49 Students

Summer 2025

ISB 202 Applied Environmental and Organismal Biology

Section 840, 16 Students

Spring Semester 2025

ISP203A-Global Change

Section 005, 158 students

Section 007, 74 students

Section 011, 131 students

Fall Semester 2024

ISP203A-Global Change

Section 004, 166 students

Section 007, 165 students

Section 009, 170 students

Spring Semester 2024

ISP203A-Global Change

Section 005, 147 students

Section 007, 80 students

Section 011, 123 students

Fall Semester 2023

ISP203A-Global Change

Section 004, 174 students

Teaching Fellow – Yale University, Department of Earth and Planetary Sciences (formerly Geology and Geophysics)

G&G 274 “Fossil Fuels and Energy Transitions” (Fall 2014)

G&G 125 “History of Life” (Spring 2014)

G&G 010 “Earth, Energy, and Environment” (Fall 2018)

MENTORSHIP AND SUPERVISORY EXPERIENCE

Undergraduate Learning Assistant Supervisor

Nickolas Myronenko (Fall 2025), Veda Chandrasekar (Fall 2025), Kevin Jones, (2024-Present), Jessica Jurge (2024-Present), Taylor Popp (2024-Present), Fletcher Kirkwood (2024), Thasi Msibi (2024), Dellta Waldburger (2023)

Laboratory Supervisor

Olivia Wheeler, Laboratory Assistant

2023-2024

Fletcher Kirkwood, Laboratory Assistant

2022-2023

Jordan Pack, Laboratory Assistant

2020-2022

Fieldwork Supervisor

Santa Catalina Island 2023 – Watts Dietrich (Michigan State, Grad.), Rachel Alcorn (North Carolina State, Grad.), Ollie Laub (Utah State, Grad.), Olivia Wheeler (Michigan State Undergrad.)

Bermuda 2018 – Daniel Gaskell (Yale University, Grad.)

Project Advisor

Olivia Wheeler, “Effects of Variable Iodine Treatments on the Growth Rates of Planktonic Foraminifera, 2023

Section First Prize Winner, MSU University Undergraduate Research and Arts Forum

Jordan Pack, “Constraints on mid-Miocene seawater and sediment chemistry from foraminiferal tests of the eastern Pacific”, 2021

Intern Supervisor

Yale Peabody Museum EVOLUTIONS Internship Program

2016

Georgianna Driver (undergraduate), Aliyah Shabazz (HS Student), Gabriela Villanueva (HS Student)

FIELD WORK AND PROFESSIONAL DEVELOPMENT

Field Work:

Lead: Culturing Planktonic Foraminifera in Catalina, California 2023

Planned and executed NSF-funded four-week expedition with 6 participants

Lead: Culturing Live-Caught Planktonic Foraminifera in Bermuda 2018 2018

Obtained funding, planned, and executed three-week expedition for 2 participants

Co-Lead: Culturing Live-Caught Planktonic Foraminifera in Bermuda 2016 2016

Obtained partial funding, assisted in planning and execution of three-week expedition for 5 participants

Workshops and Short Courses:

National Science Teaching Association, Course: The Three Dimensions of Teaching and Learning 2026

Michigan State University, CISGS AI Curriculum Workshop May 2024

Lansing Community College Guest Lecture Program 2023

AGU LANDInG - LANDInG Postdoctoral Research Fellows Program 2021-2022

DEI leadership training for NSF Fellows

University of Michigan - NEXTPROF Science Workshop 2022

Training for future science faculty

Center for Integration of Research, Teaching and Learning 2021

Course: *An Introduction to Evidence-Based Undergraduate STEM Teaching*

Foraminiferal Research Consortium (FRESCO)

Workshop: *Living Benthic Foraminifera in Coastal Environments Summer School* 2017

Scientific Committee on Oceanic Research (SCOR)

Final Workshop & Short Course on *Culturing of Planktonic Foraminifera* 2015

International Ocean Discovery Program

Short Course: *The Virtual Drillship Experience* 2014

OUTREACH AND COMMUNITY CONTRIBUTIONS

Peer Reviewer:

Journal of Micropaleontology, Frontiers in Ecology and Evolution, Proceedings of the Royal Society B, PLoSOne, Journal of Foraminiferal Research, Geobiology, NSF Ocean Sciences Division, Geochemistry Geophysics, Geosystems

Committee Participation:

Michigan State University, General Education Modernization Project, Design Cohort

Michigan State University, General Education Modernization Themed Committee – Future Generative Technologies

Michigan State University, Environmental Justice and Climate Action Pedagogy Faculty Learning, Co-Chair (2024-2025)

Pal(a)eoPERCS International Lecture Series, Steering Committee

Michigan State University College of Natural Sciences Annual Awards Committee

In-Class Mentor: *New Haven Public Schools*, Science Fair in-class mentor and judge

Scientist Volunteer:

SciCurious, MSU Museum, Spring 2026

MSU Climate Change Action Theater Festival, Fall 2025

East Lansing Public Library, National Fossil Day, 2024

Darwin Discovery Day, Michigan State University Museum, 2023-2024

Michigan State University, SciFest 2021

Yale Peabody Museum Dinosaur Days

Yale Peabody Museum PaleoBowl

Smithsonian NMNH “Meet the Scientist” Event, 2013

PUBLICATIONS AND PRESENTATIONS

Peer Reviewed Publications

Burke, Janet E., Keyi Cheng, Donald E. Penman, Andy Ridgwell, Dalton S. Hardisty. "Miocene ocean circulation shifted expansive oxygen deficient zones to the Atlantic", in press for *Nature Communications* (2026).

Watsawan Chanchai, Lyle L. Nelson, Emily .F Smith, Dalton S. Hardisty, Mary C. Lonsdale, **Janet E. Burke**, Kimberly V. Lau. "Localized and Transient Oxygenation of Shallow Oceans of Southwestern Laurentia at the Ediacaran–Cambrian Boundary", *Geobiology*, 24:1 (2026).

Alcorn, Rachel Christine, Jorge Feliciano Ontiveros-Cuadras, Anjaly Govindankutty Menon, Nicolaas Glock, Eric J. Tappa, **Janet Burke**, María Luisa Machain-Castillo, and Catherine V. Davis. "Nonlinear Expansion of the Eastern Tropical North Pacific Oxygen Minimum Zone During the Last Deglaciation." *Authorea Preprints* (2025).

Burke, Janet E., Elder L. E., Maas, Amy E., Gaskell, Daniel E., Clark, E.G., Hsiang, A. Y., Foster, G.L., Hull, P.M. (2025). Low Allometric Scaling of Respiration Rates May Explain Gigantism in Pelagic Protists. *Limnology and Oceanography*.

Hashim, M. S., **Burke, J. E.**, Hardisty, D. S., & Kaczmarek, S. E. (2022). Iodine incorporation into dolomite: Experimental constraints and implications for the iodine redox proxy and Proterozoic Ocean. *Geochimica et Cosmochimica Acta*.

Burke, Janet E., Willem Renema, Ralf Schiebel, Pincelli M. Hull. (2018). Three-Dimensional Analysis of Inter- and Intraspecific Variation in Ontogenetic Growth Trajectories in Planktonic Foraminifera. *Marine Micropaleontology*, 101794.

Clark, Elizabeth, Fezzaa, K., **Burke, J.E.**, Racicot, R.A., Shaw, J.O., Westacott, S., Briggs, D.E.G. (2019). A farewell to arms: using x-ray synchrotron imaging to investigate autotomy in brittle stars. *Zoomorphology*, 138 (3), 419-424.

Burke, Janet E., Renema, W., Henahan, M.J., Elder, L.E., Davis, C.V., Maas, A.E., Foster, G.L., Schiebel, R., Hull, P.M. (2018). Factors Influencing Porosity in Planktonic Foraminifera. *Biogeosciences*, 15(21), 6607-6619.

Hsiang, Allison Y., Nelson, K., Elder, L., Sibert, E., Kahanamoku, S., **Burke, J.E.**, Kelly, A., Liu, Y., Hull, P.M., (2017). AutoMorph: Accelerating morphometrics with automated 2D and 3D image processing and shape extraction, *Methods in Ecology and Evolution*, 9(3), 605-612.

Burke, Janet E. and Hull P.M. (2017). Effect of gross morphology on modern planktonic foraminiferal test strength under compression. *Journal of Micropalaeontology*, 36(2): 174-182.

Henahan, Michael J., Evans, D., Shankle, M., **Burke, J.E.**, Foster, G. L., Durrant, J., Anagnostou, E., Chalk, T. B., Stewart, J. A., Alt, C. H. S., and Hull, P. M.: Size-dependent response of foraminiferal calcification to seawater carbonate chemistry, *Biogeosciences*, 14(13): 3287.

Conferences and Symposium Presentations

Burke, Janet, Vered Weiss, David Lee Baylis. Panel Presentation: "Beyond Monsters: Building Community in a Monstrous Team-Taught Course", MSU Spring TALKS. East Lansing, USA. May 2026.

Richmond, Kelly, Markham, Laura, and **Burke, Janet E.** Workshop: "Making Climate Justice Matter: Active Learning for Any Discipline", MSU Spring TALKS. Oral Presentation and Workshop Facilitation. East Lansing, USA. May 2025.

Burke, Janet E., PaleoPERCS Seminar Series. "Investigating and Applying the Foraminiferal Iodine-to-Calcium Proxy using Living and Fossil Foraminifera". Online. July, 2024.

Burke, Janet E. (2024). "REDISTRIBUTION OF MARINE OXYGEN DEFICIENT ZONES DURING THE MID-MIOCENE". *North American Paleontological Convention*. Ann Arbor, Michigan, USA. Poster Presentation.

Burke, Janet E., Fehrenbacher, J., Hardisty, D. (2022). Experimental and Diagenetic Assessment of the Foraminiferal Iodine-to-Calcium Proxy. Oral Presentation. *AGU Fall Meeting 2022*. Chicago, IL.

Chanchai, W., Smith, E., Nelson, L.L., Lonsdale, M., Hardisty, D., **Burke, J.**, Lau, K.V. A Carbonate Multi-Proxy Investigation of Oceanic Oxygenation across the Ediacaran–Cambrian boundary. Poster Presentation. (2022) *Goldschmidt Conference*, Honolulu, HI.

Burke, Janet E., and Dalton S. Hardisty. 2021. Foraminiferal I/Ca Reveals Regional Variation in Eastern Tropical Pacific Oxygen Deficient Zone Intensity Across the Miocene Climatic Optimum. Poster Presentation. *American Geophysical Union Fall Meeting (2021)*, New Orleans, LA.

Hashim, M., **Burke, J.E.**, Hardisty, D.S., Kaczmarek, S.E. 2021. Iodine Incorporation into Dolomite: Insights from Dolomitization Experiments and Implications for the Iodine Redox Proxy. Oral Presentation. *American Geophysical Union Fall Meeting (2021)*, New Orleans, LA.

Burke, Janet E., Elder L. E., Maas, Amy E., Gaskell, Daniel E., Clark, E.G., Hsiang, A. Y., Foster, G.L., Hull, P.M. (2020). Can Low Allometric Scaling of Respiration Rates May Explain Gigantism in Pelagic Protists? Oral Presentation. *Geological Society of America*, Virtual Meeting.

Burke, Janet E., Renema, W., Schiebel, R., Hull, P.M. (2019). Growth Rate Dynamics Underlying Planktonic Foraminiferal Morphology. Oral Presentation. *North American Paleontological Conference 2019*, Riverside, CA.

Burke, Janet E., Renema, W., Henahan, M.J., Elder, L.E., Davis, C.V., Maas, A.E., Foster, G.L., Schiebel, R., Hull, P.M. (2019). Correlates and Paleoecological Significance of Porosity of Planktonic Foraminifera. Oral Presentation, *Northeast Geobiology Symposium 2019*, Amherst, MA.

Burke, Janet E., Renema, W., Henahan, M.J., Elder, L.E., Davis, C.V., Maas, A.E., Foster, G.L., Schiebel, R., Hull, P.M. (2018). Factors Influencing Porosity in Planktonic Foraminifera. Oral Presentation, *FORAMS 2018*, Edinburgh, UK.

Burke, Janet E. and Pincelli M. Hull. (2016). Through the Walls: Biotic and Abiotic Determinants of Planktonic Foraminiferal Porosity in Core Top Assemblages. Poster. *International Conference on Paleoceanography*, Utrecht, The Netherlands.

Burke, Janet E. and Pincelli M. Hull. (2015). Exploring Variation in Planktonic Foraminiferal Test Morphology: Community Level Porosity Trends and Implications. Poster Presentation. *SCOR Meeting and Workshop on the Culturing of Planktonic Foraminifera*, Santa Catalina Island, CA.

Burke, Janet E. and Pincelli M. Hull. (2015). Through the Walls: Biotic and Abiotic Determinants of Planktonic Foraminiferal Porosity in Core Top Assemblages. Poster. *Geological Society of America Conference*, Baltimore, MD.

Burke, Janet E., A.K. Behrensmeyer, C. Badgley, H. J. Barry, SK Lyons. (2014). “Assessing Biases of Sampling and Scale in Miocene Vertebrate Assemblages from Northern Pakistan”. Poster. *North American Paleontological Convention*, Gainesville, FL.

Guest Lecturer or Invited Speaker

MSU All Integrative Studies Spring Meeting – with Vered Weiss and David Baylis, Spring 2026

MSU ISS205 – Guest Lecture, “Life On The Edge: Extreme Adaptations to Extreme Environments,” Fall 2025

MSU IAH207 – Guest Lecture, “Life On The Edge: Extreme Adaptations to Extreme Environments,” Fall 2025

MSU CIRCLE Workshope – Panelist, with Vered Weiss and David Baylis, Spring 2025

Pal(a)eoPERCS International Lecture Series – Invited Speaker, Spring 2025

Utah State University – Guest Speaker, Penman Lab, Spring 2023

Other Publications

Burke, Janet E. 2018. Fossil Focus: Planktonic Foraminifera – Small Fossils, Big Impacts. *Palaeontology Online*: 8(2). <https://www.palaeontologyonline.com/>

Burke, Janet E. 2013. Reid Bertone-Johnson: A Life For Design. *{CEEDS Magazine}*, Smith College, Spring 2013.

INTERNSHIPS

Smithsonian Institution, *National Museum of Natural History, Washington, DC* 2013

Natural History Research Experience Intern

Supervisor: Anna K. Behrensmeyer

National Oceanic and Atmospheric Administration

National Centers for Coastal Ocean Sciences, Silver Spring, Maryland

2012

Agnes Shedd Andreae Intern - Legislative Communications

RESEARCH INTERESTS

Using the Fossil Record to Reconstruct Global Change

- ❖ Paleooceanography and Marine Paleoecology
- ❖ Paleoproxy development and ground-truthing
- ❖ Foraminiferal ecology, morphology, and physiology
- ❖ 3D imaging and morphometrics