

## Kelly Ann Gibson

University of South Carolina Aiken, Biology and Geology  
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EDUCATION	Ph.D. Marine Geology and Geophysics University of Miami, RSMAS, Miami FL Advisor: Dr. Larry Peterson Dissertation: <i>"Rapid Climate Change in the Tropics: A Half-Million Year Long Geochemical Record from the Cariaco Basin, Venezuela"</i>	2006-2012
	B.S. Geology The College of William and Mary, Williamsburg VA Advisor: Dr. Jesse McNinch, Virginia Institute of Marine Science Thesis: <i>"The Use of Seismic Technology in Identifying Scour Resistant Layers: A Study of the Wreck Site of the Queen Anne's Revenge and the Control of Underlying Geology on the Process of Scour and Burial"</i>	2000 – 2004
PROFESSIONAL PREPARATION	Assistant Professor, Biology and Geology, University of South Carolina Aiken	2019 – present
	Instructor, Biology and Geology, University of South Carolina Aiken	2017 – 2019
	Adjunct Assistant Professor, School of the Earth, Ocean, and Environment University of South Carolina (USC)	2016 – present
	Postdoctoral Associate, Earth and Ocean Sciences, USC	2013 – 2016
	Research Assistant, Marine Geology and Geophysics, RSMAS	2006 – 2012
	Teaching Assistant, Marine Science, RSMAS	2007 – 2009
PUBLICATIONS	Nava-Fernandez, X.A., Machain-Castillo, M.L., Sifeddine, A., Mendez-Milan, M, Caquinea, S., <b>Gibson, K.A.</b> , Tappa, E., Ruiz-Fernandez, A.C., Sanchez-Cabeza, J.A., Rodriguez-Raimerez, A., Lara-Cera, A.R., 2022. Planktonic foraminiferal assemblages and particle fluxes at the entrance of the Gulf of California highlight the effects of the strong El Niño 2015 – 2016. <i>Progress in Oceanography</i> , 208, 102880, <a href="https://doi.org/10.1016/j.pocean.2022.102880">https://doi.org/10.1016/j.pocean.2022.102880</a>	
	Lambert, J.E., <b>Gibson, K.A.</b> , Linsley, B.K., Bova, S.C., Rosenthal, Y., Surprenant, M., 2022. Equatorial Pacific bulk sediment $\delta^{15}\text{N}$ supports a secular increase in Southern Ocean nitrate utilization after the mid-Pleistocene Transition, <i>Quaternary Science Reviews</i> , 278, 107348, <a href="https://doi.org/10.1016/j.quascirev.2021.107348">https://doi.org/10.1016/j.quascirev.2021.107348</a>	
	Windler, G., Tierney, J.E., DiNezio, P.N., <b>Gibson, K.</b> , Thunell, R., 2019. Shelf exposure influence on Indo-Pacific Warm Pool climate for the last 450,000 years, <i>Earth and Planetary Science Letters</i> , 516, 66-76, <a href="https://doi.org/10.1016/j.epsl.2019.03.038">https://doi.org/10.1016/j.epsl.2019.03.038</a>	
	Pearson, P. N. and IODP Expedition 363 Shipboard Scientific Party, 2018. A deep-sea agglutinated foraminifer tube constructed with planktonic foraminifer shells of a single species, <i>Journal of Micropalaeontology</i> , 37, 97-104, <a href="https://doi.org/10.5194/jm-37-97-2018">https://doi.org/10.5194/jm-37-97-2018</a>	
	<b>Gibson, K.A.</b> , Thunell, R.C., Machain-Castillo, M.L., Fehrenbacher, J., Spero, H., Wejnert, K.E., Nava- Fernandez, X., Tappa, E.J., 2016. Evaluating controls on planktonic foraminiferal geochemistry in the Eastern Tropical North Pacific, <i>Earth and Planetary Science Letters</i> , 452, 90-103, <a href="https://doi.org/10.1016/j.epsl.2016.07.039">https://doi.org/10.1016/j.epsl.2016.07.039</a>	
	<b>Gibson, K.A.</b> , Thunell, R.C., Tappa, E.J., Peterson, L.C., McConnell, M., 2015. The influence of rapid, millennial scale climate change on nitrogen isotope dynamics in the Cariaco Basin during marine isotope stage 3. <i>Paleoceanography</i> , 30, <a href="https://doi.org/10.1002/2014PA002684">https://doi.org/10.1002/2014PA002684</a>	

- Gibson, K. A.**, Peterson, L.C., 2014. A 0.6 million year record of millennial-scale climate variability in the tropics, *Geophysical Research Letters*, 41, 969–975, <https://doi.org/10.1002/2013GL058846>
- Meckler, A.N., Sigman, D.N., **Gibson, K.A.**, François, R., Martínez-García, A., Jaccard, S.L., Röhl, U., Peterson, L.C., Tiedemann, R., Haug, G.H, 2013. Deglacial pulses of deep ocean silicate into the subtropical North Atlantic Ocean, *Nature*, 495, 495-498, <https://doi.org/10.1038/nature12006>
- Gibson, K.A.**, 2012. Rapid Climate Change in the Tropics: A Half-Million Year Long Geochemical Record from the Cariaco Basin, Venezuela, University of Miami, Miami, FL.

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## GRANTS AND AWARDS

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| <i>“Collaborative Research: Documenting Variations in the Southern Hemisphere Influence on the Western Pacific Warm Pool Thermocline Since 1.5 Ma”</i> NSF OCE – MG&G ( <b>\$186,352; 2 yrs.</b> )   | 2024 - 2026                  |
| Honors, Awards and Scholarship Committee Spring Travel Award<br>Travel to Wilmington, NC for Participation in OOI DataLabs WS ( <b>\$400</b> )   | 2024                         |
| <i>Collaborative Research: Reconstructing Western Pacific Warm Pool Surface and Thermocline Variability Under Different Earth Boundary Conditions 0 - 2.0 Ma”</i> NSF OCE – MG&G ( <b>\$104,611 requested; 2 yrs</b> )                             | *Submitted 2021,<br>declined |
| <i>Understanding recent changes in water column temperature and upwelling in the Eastern Tropical North Pacific: perspectives from planktonic foraminiferal geochemistry</i> ASPIRE Program (Track I), USC ( <b>\$15,000</b> )                     | 2021 - 2022                  |
| <i>“Abrupt Climate Change: Constructing a Tropical Counterpart to the Iconic Greenland Ice Core Records”</i> USC Research Initiative for Summer Engagement (RISE) Program ( <b>\$5999</b> )  | 2021                         |
| <i>“Expanding the microscopy imaging capacity to advance research activities at USC Aiken”</i> ASPIRE Program (Track III), USC. ( <b>\$10,075</b> )  | 2021                         |
| <i>“Collaborative Research: Reconstructing the Pleistocene History of South Pacific Upper Water Column Circulation Effects on the Western Pacific Warm Pool: Analysis of IODP Site 1486”</i> NSF OCE – MG&G ( <b>\$137,981 requested; 3 yrs</b> )  | *Submitted 2020,<br>declined |
| <i>“Monitoring Changes in Upwelling in the Eastern Tropical North Pacific in Response to Climate Change: Insights from Sediment Trap Time Series”</i> ASPIRE Program (Track I), USC.   | *Submitted 2020,<br>declined |
| <i>“Tropical Pacific Nutrient Dynamics Across the Mid Pleistocene Transition”</i> USC Research Initiative for Summer Engagement (RISE) Program ( <b>\$5974</b> )   | 2018                         |
| <i>“Nutrient dynamics and productivity in the Western Pacific Warm Pool: regional responses to remote and local forcings from the Late Pliocene to the Mid-Pleistocene Transition”</i> USSSP Post Expedition Award IODP Exp 363 ( <b>\$15000</b> ) | 2017 – 2019                  |

<i>"Ba/Ca in Planktonic Foraminifera as a Recorder of Freshwater Input to the Ocean: Proxy Refinement in the Gulf of Papua, Papua New Guinea"</i>	2015 – 2017
USC Advanced Support for Innovative Research Excellence (ASPIRE) ( <b>\$5000</b> )	
<i>"The influence of recent climate change on northward advection of the North Pacific denitrification signal along the California Coast"</i>	2014
Chief Scientist in Training Cruise ( <b>\$1200</b> )	
<i>"Calibration of qualitative scanning X-ray fluorescence records from the Cariaco Basin"</i>	2010
Geological Society of America Student Research Grant ( <b>\$1549</b> )	

Mentored Student Awards:

<i>"Marine Microfossils and Estuarine Health: Benthic Foraminifera and North Inlet, SC"</i>	2023
Student: Riley Campbell, USCA, Magellan Scholar Program, USC ( <b>\$887</b> )	
<i>"Abrupt Changes in Tropical Hydrology during the Last Glacial Period"</i>	2022
Student: Lindsey Nandras, USCA, USCA Summer Scholars Institute ( <b>\$3000 student/\$5000 faculty</b> )	
<i>"Relating Assemblages of Benthic Foraminifera to Sediment Organic Matter Content to Understand Ecosystem Health in the North-Inlet Winyah Bay Estuary"</i>	2020
Student: Sarah Rebecca Shealy, Magellan Scholar Program, USC. ( <b>\$2750</b> )	
<i>"Paleoproductivity Changes in the Indo Pacific Across the Mid-Pleistocene Transition: Understanding CO<sub>2</sub>, Sensitivity, and Orbital Forcing in the Tropics"</i>	2019
Student: Mina Surprenant, Magellan Scholar Program, USC. ( <b>\$3000</b> )	
<i>"Benthic Foraminifera as Indicators of Ecosystem Health in North Inlet"</i>	2019
Student: Sarah Rebecca Shealy, USCA, USCA Summer Scholars Institute ( <b>\$3000 student/\$4000 faculty</b> )	

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**TEACHING AND MENTORING**

<i>Assistant Professor (2023 – present), Assistant Professor (2019 – 2023),</i>	2023 - present
Biological, Environmental, and Earth Sciences, USCA, Aiken, SC	2019 - 2023
Courses: Intro to Physical Geology (Geol 101), Environmental Earth Science (Geol 103), Oceanography (Geol 301), Paleontology (Geol 311) Sedimentology and Stratigraphy (Geol 325), Global Biogeochemical Cycles (Geol 405), Independent Study and Geology Capstone (Geol 199, 299, 399, 499)	
<i>Instructor, Biology and Geology, USCA, Aiken, SC</i>	2017 – 2019
Courses: Intro to Physical Geology (Geol 101), Integrated Earth Science (Geol 201), Paleontology (Geol 311), Global Biogeochemical Cycles (Geol 398)	
<i>Adjunct Faculty, Marine Science Program, USC, Columbia, SC</i>	2016 – present
Courses: Chemistry of the Seas (MSCI 313), Oceans and Society (MSCI 210/210i)	
<i>Guest Lecturer, Marine Science Program, USC, Columbia, SC</i>	2015
Courses: Chemical Oceanography (MSCI 782), Paleoclimate (MSCI/GEOL 711) Intro to Marine Science (MSCI 101)	

<i>Trace Metals Instructor, Marine Sediments Research Lab, USC, Columbia, SC</i>	2013 – 2016
<i>Teaching Assistant, Marine Science Program, University of Miami, Miami, FL</i>	2008, 2009, 2012
Courses Taught: Origin and Geology of the Galapagos Islands (MSCI 424), two-week field-based geology course; Introduction to Marine Science (MSCI 111)	
<u>Undergraduates Mentored</u>	
<i>Paleoclimatology Lab, USCA, Aiken, SC</i>	2017 – present
Hayden Thomas, Steven Cole Peterson, Riley Campbell, Lindsey Nandras, Joseph Costello, Reagan Anthony, Paul Wesley Brison, Sarah Rebecca Shealy, Joshua Grubb, Angel Owiriwa	
<i>Marine Sediments Research Lab, USC, Columbia, SC</i>	2014 – present
Mina Surprenant (USC), Txai Mitt Schwamborn (Universidade Federal de Rio Grande, Brazil), Courtney Swink (USC) Emily Townsend (USC)	
<i>Paleoclimatology Lab, RSMAS, University of Miami, Miami, FL</i>	2008 – 2009
Hannah Marsh (UM), Brittney Price (UM), Angela Rosenberg (UM)	

## INVITED TALKS

- Gibson, K.**, 2020, Tiny Fossils and the Big Stories They Tell, Science on Tap USC Aiken and SRNL Seminar Series, Aiken, SC
- Gibson, K.**, 2020, Little Fossils and the Big Stories They Tell, Department of Biology and Geology Seminar Series, University of South Carolina Aiken, SC
- Gibson, K.A.**, 2017, Taking the Pulse of Paleoproductivity in the Western Pacific Warm Pool, Central Savannah River Area Geologic Society, Aiken, SC
- Gibson, K.A.**, 2015, Planktonic Foraminifera as Recorders of Sea Surface Hydrography in the Eastern Tropical North Pacific: Climate Connections and Paleoproxy Development, Virginia Institute of Marine Science Department of Physical Science Seminar, Gloucester Point, VA
- Gibson, K.A.**, 2013, Rapid Climate Change in the Tropics: A Half-Million Year Long Geochemical Record from the Cariaco Basin, Venezuela, Department of Marine Science Seminar, University of South Carolina, Columbia, SC.

## ABSTRACTS\*

\*Denotes mentored student

- Campbell, Riley E. \*, **Gibson, K.A.**, 2023. Marine Microfossils and Estuarine Health: Benthic Foraminifera from North Inlet, SC, Discover USC, Columbia, SC.
- Campbell, Riley E. \*, **Gibson, K.A.**, 2023. Marine Microfossils and Estuarine Health: Benthic Foraminifera from North Inlet, USCA Scholar Showcase, Aiken, SC.
- Nava-Fernandez, X.A., Machain-Castillo, M.L., Sifeddine, A., Mendez-Milan, M., Caquinea, S., **Gibson, K.A.**, Tappa, E., Ruiz-Fernandez, A.C., Sanchez-Cabeza, J.A., Rodriguez-Raimierz, A., Lara-Cera, A.R., 2022. Seasonal and interannual variability of planktonic foraminiferal assemblages and particle fluxes in the entrance of Gulf of California offshore Mazatlán, Mexico. EBUS, Lima, Peru
- Lambert, J.E., **Gibson, K.**, Linsley, B.K., Bova, S.C., Rosenthal, Y., Surprenant, M. \*, 2020, The 1.4 Myr evolution of low- and high-latitude South Pacific influence on the Western Pacific Warm Pool as recorded via an amplified sediment  $\delta^{15}\text{N}$  record, EGU, Virtual Annual Meeting
- Nava Fernandez, X.A., Machain-Castillo, M.L., Sifeddine, A., Mendez-Millan, N., Caquinea, S., **Gibson, K.A.**, Tappa, E., Rodriguez-Ramierz, 2020. Impact of the Godzilla El Niño on the planktonic foraminiferal assemblages and the particle flux at the mouth of Gulf of California, Resilience of the Gulf of California Workshop, UNAM, Mexico City, MX

- \*Surprenant, M., **Gibson, K.**, 2020, Paleoproductivity Changes in the Indo Pacific Across the Mid Pleistocene Transition: Understanding CO<sub>2</sub>, Sensitivity, and Orbital Forcing in the Tropics. Discover USC, Columbia, SC. *Showcase cancelled due to COVID-19.*
- \*Shealy, S.R., **Gibson, K.** 2020, Relating Assemblages of Benthic Foraminifera to Sediment Organic Matter Content to Understand Ecosystem Health in the North-Inlet Winyah Bay Estuary, Discover USC, Columbia, SC. *Showcase cancelled due to COVID-19.*
- \*Shealy, S.R., **Gibson, K.** 2020, Environmental Controls on Benthic Microfossil Communities in a Pristine Estuarine Environment, USC Aiken Scholar Showcase, Aiken, SC. *Showcase cancelled due to COVID-19.*
- \*Shealy, S.R., Gibson, K., 2020, Preliminary Assessment of Diversity and Abundance of Benthic Foraminifera in the North Inlet, Hobcaw Research Symposium, Hobcaw Barony, SC.
- \*Shealy, S.R., **Gibson, K.**, 2019, Establishing Diversity and Abundance of Benthic Foraminifera in the North Inlet (North Inlet- Winyah Bay Estuary), South Carolina, Science on Tap, Aiken, SC.
- \*Shealy, S.R., **Gibson, K.**, 2019, Establishing Diversity and Abundance of Benthic Foraminifera in the North Inlet (North Inlet- Winyah Bay Estuary), South Carolina, Summer Scholars Institute Summer Symposium, Aiken, SC.
- Holbourn, A., Rosenthal, Y., Kulhanek, D., Elsner D., Beil S., Jöhnck, J., Lübbers, J., Kuhnt W., and Expedition 363 Scientists, 2019. Sensitivity of Australian monsoon to changing climate boundary conditions during the late Miocene and across the Mid-Pleistocene Transition, JpGU, Japan.
- Eichler, P.P.B, Billups, K., **Gibson, K.**, Viatl, H., Gomes, M.P., and IODP Expedition 363 Scientists, 2017. Foraminiferal tolerance to physical pressure in recent and past sediments of WPWP (IODP Exp.363), COLCAMEAR17, Balenario Camboriu, Santa Catarina, Brasil.
- Gibson, K.**, Mitt Schwamborn, T. \*, Thunell, R., C., Tuten, E.C. \*, Swink, C. \*, Tappa, E., 2017. Paleoproductivity and Nutrient Cycling on the Sumatra Margin during the Past Half Million Years, AGU, New Orleans, LA.
- Hammes, U., **Gibson, K.**, Peterson, L, Ruppel, S, 2015. Sedimentologic and paleoceanographic controls of anoxia in the Holocene Cariaco Basin (Venezuela): implications for control of source rock deposition of Cretaceous (Eagle Ford) and Jurassic (Haynesville) mudrocks. AAPG.
- Gibson, K.**, Thunell, R., Machain-Castillo, M., Wejnert, K., Nava-Fernandez, X., Rodriguez Ramirez, A., Fehrenbacher, J., Spero, H., Tappa, E., 2014. Planktonic foraminifera as recorders of sea surface hydrography in the Eastern Tropical North Pacific (Gulf of Tehuantepec, MX). AGU, San Francisco, CA.
- Scher, H., Romans, B., Buckely, W., **Gibson, K.**, Moffitt, Z., 2013. Terrigenous input, deep water circulation, and bottom current intensity in the late Eocene to late Oligocene North Atlantic, ICP, Barcelona, Spain.
- Gibson, K.A.**, Thunell, R.C., Tappa, E.J., Peterson, L.C., McConnell, M. 2014. The Influence of Rapid, Millennial-Scale Climate Change on Nitrogen Isotope Dynamics of the Cariaco Basin during Marine Isotope Stage 3, Southeastern Biogeochemistry Symposium, Atlanta, GA.
- Gibson, K.A.**, Peterson, L.C., 2013. A half million years of suborbital variability from the Cariaco Basin: A proxy for Greenland "ice core" records?, Goldschmidt, Florence, Italy.
- Gibson, K.**, Peterson, L.C., 2011. A Half-Million Year Geochemical Record of Climate from Cariaco Basin, INQUA Congress, Bern, Switzerland.
- Gibson, K.A.**, Peterson, L.C., 2010. Elemental Records of the Penultimate Glacial-Interglacial Cycle in the Cariaco Basin, Venezuela, AGU, San Francisco, CA.

**Gibson, K.A.**, Peterson, L.C., Yurco, L.N., 2009. A multi-proxy, high resolution record of the Younger Dryas in Cariaco Basin, AGU, San Francisco, CA.  
 Peterson, L.C., **Gibson, K.A.**, Black, D.E., Thunell, R.C., Lea, D.W., Haug, G.H., 2007. The History and Dynamics of Anoxia in Cariaco Basin, invited talk, AGU, San Francisco, CA.

<b>PROFESSIONAL DEVELOPMENT</b>	OOI Data Labs 2024 Mid-Atlantic Workshop, Wilmington NC	June 2024
	Building Community and Active Engagement, USCA CTE Seminar	2023
	AACU Transforming STEM Virtual Meeting	2020
	USCA Remote Teaching Certificate	2020
	Council on Undergraduate Research—Geosciences Division Establishing and Sustaining an Undergraduate Research Program Workshop, Fall American Geophysical Union Meeting, San Francisco, CA	2019
	AACU Transforming STEM Higher Education: Confirming the Authority of Evidence, Atlanta, GA	2018
	Paleontological Society, NSF and EarthRates: PBDB, Macrostrat, Rockd, Neotoma Teaching “Hackathon”, Washington DC	2018
	USCA Center for Teaching Excellence Lunch and Learn Seminars	2017
	Preparing Future Faculty Program, USC Center for Teaching Excellence	2016
	Marine Geoscience Leadership Symposium, Washington DC	2015
	Integrated Ocean Discovery Program Short Course (AGU)	2014
	Preparing for an Academic Career in the Geosciences Workshop, University of North Carolina - Chapel Hill	2012
	International Workshop on XRF Core Scanning, Royal Institute for Sea Research, Texel, Netherlands	2010
<b>SERVICE, OUTREACH, &amp; LEADERSHIP</b>	Peer Reviewer for: Earth and Planetary Science Reviews, Continental Shelf Research, Biogeosciences Discussions, Journal of Foraminiferal Research, Geo-Marine Letters, Environmental Pollution, Frontiers in Marine Science Quaternary Science Reviews, NSF/MG&G/OCE/P2C2 ad hoc	2015 – present
	Reviewer for: ASPIRE, RISE, and Magellan Program Awards, USCA Faculty Awards, USC Excellence in Teaching/Service Awards	2015 - present
	USCA General Education Committee (Chair 2023 – 2025)	2022 – present
	BEES Reverse Visiting Professor Representative for Geology	2023 - present
	USCA Center for Teaching Excellence Subcommittee	2020 – present
	USCA CSE Engaged Teaching and Learning Committee	2020 – 2022
	Team 10 USCA Futures Taskforce	2020
	Geological Society of America Research Grants Committee	2020 – 2023
	USCA New Faculty Orientation Committee (Chair, 2020-2021)	2019 – 2022
	American Geophysical Union (AGU) Outstanding Student Poster Award Judge	2017, 2018
	USCA Bio/Geo Retention and Recruitment Committee	2018 – present
	USCA Microbiology Faculty Search Committee	2017
	Skype a Scientist Outreach Program	2017 – present
	USCA Judicial Board Jury Pool	2017 – 2020
	USCA STEM Friday Participant	2018 - 2020
	USCA SEED Participant	2019

USC Discovery Day/Discover Presentation Judge	2014, 2017-2018
USC Postdoc Association Secretary/Treasurer	2014 – 2015
USC Region II Science and Engineering Fair Judge	2014
USC Marine Science REU Symposium judge	2013
Marine Science Outreach with Third Grade at Columbia Jewish Day School	2013
National Ocean Science Bowl Judge	2011
Tour Guide, RSMAS	2008 – 2012
Treasurer, Marine Science Graduate Student Organization (MSGSO), RSMAS	2007 – 2008
“Geotopics” departmental seminar Co-Organizer, RSMAS	2006 – 2007

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<b>FIELD EXPERIENCE</b>	North Inlet, Winyah Bay, Georgetown SC Surface Sediment Sampling	2019
	Sediment trap turnaround cruises	
	Gulf of Mexico	2019
	Santa Barbara Basin, CA; Cariaco Basin, VZ	2013-2014
	IODP Exp 363, Inorganic Geochemist	2016
	Chief Scientist in Training Cruise, Moss Landing CA	2014
	IODP-799 Site Survey Cruise, Western Pacific Warm Pool	2013
	Modern carbonate sedimentology (Exumas, Little Bahama Bank, Bahamas; Florida Keys, FL)	2007 – 2008
	Colorado Plateau Field Camp	2003

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<b>AFFILIATIONS</b>	National Association of Geoscience Teachers	2016 – present
	Earth Science Women’s Network	2011 – present
	American Geophysical Union	2006 – present
	Geological Society of America	2006 – present

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