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MICROPALAEONTOLOGY, PALEOCEANOGRAPHY, STRATIGRAPHY

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## EDUCATION

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Ph.D. Geosciences, University of Massachusetts, Amherst – May 2015

Dissertation title: “Oceanographic Controls on the Expression of Cretaceous Oceanic Anoxic Events in the Western Interior Sea”

Advisor: R. Mark Leckie

M.S. Geosciences, University of Massachusetts, Amherst – September 2014

Project Title: “Middle Miocene Sea Level Variability Recorded by Foraminifera from Marion Plateau, ODP Leg 194”

Advisor: R. Mark Leckie

B.S. Geology, University of Mary Washington – June 2009

Magna Cum Laude

Advisor: Neil Tibert

## APPOINTMENTS

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[2018-present] **Research Associate**, Institute for Geophysics, University of Texas, Austin

[2018-present] **Lecturer**, Department of Geological Sciences, University of Texas, Austin

[2015-2018] **Richard T. Buffler Postdoctoral Fellow**, Institute for Geophysics, University of Texas, Austin

[Summer 2015] **Postdoctoral Researcher**, University of Massachusetts, Amherst

[2009-2015] **Research Assistant**, University of Massachusetts, Amherst

[2014] **Instructor**, Smith College, Northampton, MA

[Summer 2013] **Micropaleontologist**, BP Gulf of Mexico New Wells Delivery

[Summer 2011] **Research Geologist**, BP North American Gas

[2010] **Ranger Service Academy Coordinator**, Philmont Scout Ranch, Cimarron, NM

[2009] **Ranger Trainer**, Philmont Scout Ranch, Cimarron, NM

[2006-2008] **Ranger**, Philmont Scout Ranch, Cimarron, NM

[2007] **Laboratory Assistant**, University of Mary Washington

## PEER-REVIEWED PUBLICATIONS ([Google Scholar Profile](#))

*\*Student mentee †Postdoc mentee*

52. †Woodhouse, A., Swain, A., Fagan, W. F., Fraass, A. J., **Lowery, C. M.** (2023) Late Cenozoic cooling restructured global plankton communities. *Nature*. <https://doi.org/10.1038/s41586-023-05694-5>

**\*News and Views\*** Yasuhara, M. and Deutsch, C. Tropical biodiversity linked to polar climate. <https://doi.org/10.1038/d41586-023-00392-8>

51. Burstein, J., Goff, J.A., Gulick, S., **Lowery, C.M.**, Standring, P., & Swartz, J. (2023) Tracking barrier island response to early Holocene sea-level rise: High resolution study of estuarine sediments in the Trinity River Paleovalley. *Marine Geology*. <https://doi.org/10.1016/j.margeo.2022.106951>

50. **Lowery, C.M.** and Bralower, T.J. (2022). Elevated post K-Pg export productivity in the Gulf of Mexico and Caribbean. *Paleoceanography and Paleoclimatology* v. 37, e2021PA004400. <https://doi.org/10.1029/2021PA004400>
49. Rodriguez-Tovar, F., Kaskes, P., Ormö, J., Gulick, S.P.S., Whalen, M.T., Jones, H.L. **Lowery, C.M.**, Bralower, T.J., Smit, J., King, D.T., Goderis, S., and Claeys, P. (2022). Life before impact in the Chicxulub area: Unique marine biological signatures preserved in crater suevite. *Scientific Reports*.
48. Le Ber, E., Loggia, D., Denchik, N., Lofi, J., Kring, D.A., Siitari-Kauppi, M., Pezard, P., Oliver, G., and **IODP-ICDP Expedition 364 Science Party** (2022). Petrophysics of Chicxulub Impact Crater's Peak Ring. *JGR Solid Earth* v. 127, e2021JB023801, <https://doi.org/10.1029/2021JB023801>.
47. Cunningham, R., Purkey Phillips, M., Snedden, J.W., Norton, I.O., **Lowery, C.M.**, Virdell, J.W., Barrie, C.D., and Avery, A. (2022) Productivity and organic carbon trends through the Wilcox Group in the deep Gulf of Mexico: Evidence for ventilation during the Paleocene-Eocene Thermal Maximum. *Marine and Petroleum Geology*, v. 140, 105634, <https://doi.org/10.1016/j.marpetgeo.2022.105634>.
46. Hernandez-Terrones, L., Martínez, L., Szamotulski, J., González-Partida, E., Morgan, J.V., **Lowery, C.M.**, Gulick, S.P.S., Rebolledo-Vieyra, M., and Kring, D. (2022). Study of fluid circulation through the Chicxulub crater using Rock-Eval pyrolysis and fluid inclusions. *Applied Geochemistry* v. 137, 105194, <https://doi.org/10.1016/j.apgeochem.2021.105194>
45. **Lowery, C.M.**, Jones, H., Bralower, T.J., Perez Cruz, L., Gebhardt, C., Whalen, M.T., Chenot, E., Smit, J., Purkey Phillips, M., Choumiline, K., Arenillas, I., Arz, J.A., Garcia, F., Ferrand, M., Gulick, S.P.S., and IODP Expedition 364 Scientists. (2021) Early Paleocene paleoceanography and export productivity in the Chicxulub crater. *Paleoceanography & Paleoclimatology* v. 36, e2021PA004241 <https://doi.org/10.1029/2021PA004241>
44. Cockell, C.S., Schaefer, B., Wuchter, C., Coolen, M.J.L., Grice, K., Schnieders, L., Morgan, J.V., Gulick, S.P.S., Wittmann, A., Lofi, J., Christeson, G.L., Kring, D.A., Whalen, M.T., Bralower, T.J., Osinski, G.R., Claeys, P., Kaskes, P., de Graaff, S.J., Déhais, T., Goderis, S., Hernandez Becerra, N., Nixon, S. and **IODP-ICDP Expedition 364 Scientists** (2021) Shaping of the Present-Day Deep Biosphere at Chicxulub by the Impact Catastrophe That Ended the Cretaceous. *Frontiers in Microbiology* 12:668240. <https://doi.org/10.3389/fmicb.2021.668240>
43. **Lowery, C. M.**, Self-Trail, J. M., and Barrie, C. D. (2021). Enhanced Terrestrial Runoff during Oceanic Anoxic Event 2 on the North Carolina Coastal Plain, USA, *Climate of the Past*, <https://doi.org/10.5194/cp-17-1227-2021>
42. Schulte, F.M., Wittmann, A., Jung, S., Morgan, J.V., Gulick, S.P.S., Kring, D.A., Grieve, R.A.F., Osinski, G.R., Riller, U. and **IODP-ICDP Expedition 364 Science Party** (2021). Ocean resurge-induced impact melt dynamics on the peak-ring of the Chicxulub impact structure, Mexico. *International Journal of Earth Sciences*. <https://doi.org/10.1007/s00531-021-02008-w>
41. Goderis, S., Sato, H., Ferrière, L., Schmitz, B., Burney, D., Kaskes, P., Vellekoop, J., Wittmann, A., Claeys, P., de Graaff, S.J., Déhais, T., de Winter, N.J., Elfman, M., Feignon, J.-G., Ishikawa, A., Koeberl, C., Kristiansson, P., Neal, C.R., Owens, J.D., Schulz, T., Sinnesael, M., Vanhaecke, F., Van Malderen, S., Bralower, T.J., Gulick, S.P.S., **Lowery, C.M.**, Morgan, J.V., Smit, J., Whalen, M.T., and IODP-ICDP Expedition 364 Scientists. (2021). Global iridium layer identified within the Chicxulub impact structure. *Science Advances* v. 7, eabe3647 <https://doi.org/10.1126/sciadv.abe3647>
40. Whalen, M.T., Gulick, S.P.S., **Lowery, C.M.**, Bralower, T.J., Morgan, J.V., Grice, K., Schaefer, B., Smit, J., Ormö, J., Wittman, A., Kring, D.A., Lyons, S., Goderis, S., (2020) Winding down the Chicxulub

- impact: the transition between impact-related and normal marine sedimentation at ground zero. *Marine Geology* v. 430 106368 <https://doi.org/10.1016/j.margeo.2020.106368>.
39. Smith, V., Warny, S., Grice, K., Schaefer, B., Whalen, M.T., Vellekoop, J., Chenot, E., Gulick, S.P.S., Arenillas, I., Arz, J.A., Bauersachs, T., Bralower, T.J., Jones, H., Lofi, J., **Lowery, C.M.**, Morgan, J.V., Nuñez Otaño, N.B., O'Keefe, J.M.K., Rodriguez-Tovar, F.J., Schwark, L., Gattacceca, J., Demory, F., and Expedition 364 Scientists. (2020). Life and Death in the Chicxulub impact crater: A record of the Paleocene-Eocene Thermal Maximum (PETM). *Climate of the Past* v. 16, 1889-1899 <https://doi.org/10.5194/cp-16-1889-2020>.
  38. Bralower, T.J., Cosmidis, J., Fantle, M., **Lowery, C.M.**, Passey, B., Gulick, S.P.S., Morgan, J., Vajda, V., Whalen, M., Wittmann, A., Artemieva, N., Farley, K., Goderis, S., Kring, D., Lyons, S., Rasmussen, C., Sibert, E., Rodriguez-Tovar, F.J., Turner-Walker, G., Zachos, J., Carte, J., Chen, S., Cockell, C., Coolen, M., Freeman, K., Garber, J., Gonzalez, M., Grice, K., Heaney, P.J., Jones, H., Schaefer, B., Smit, J., and Tikoo, S. (2020). The habitat of the nascent Chicxulub crater. *AGU Advances* v. 1, e2020AV000208 <https://doi.org/10.1029/2020AV000208>.
  37. Bralower, T.J., Cosmidis, J., Heaney, P.J., Kump, L.R., Morgan, J.V., Harper, D.T., Lyons, S.L., Freeman, K.H., Grice, K., Wendler, J., Zachos, J.C., Artemieva, N., Chen, S.A., Gulick, S.P.S., House, C.H., Jones, H.J., **Lowery, C.M.**, Nims, C., Schaefer, B., Thomas, E., and Vajda, V. (2020). Global microbial blooms during the immediate aftermath of the Cretaceous-Paleogene boundary impact. *Earth and Planetary Science Letters* v. 548, 116476. <https://doi.org/10.1016/j.epsl.2020.116476>
  36. M.A. Cox, M.A., Erickson, T.M., Schmieder, M., Christoffersen, R., Ross, D.K., Cavosie, A.J., Bland, P.A., Kring, D.A., and the **IODP-ICDP Expedition 364 Scientists**, (2020) High-resolution microstructural analysis of shock deformation in apatite from the peak ring of the Chicxulub impact crater. *Meteoritics and Planetary Science* v. 55, 1715-1733 <https://doi.org/10.1111/maps.13541>
  35. Rodriguez-Tovar, F.J., **Lowery, C.M.**, Bralower, T.J., Gulick, S.P.S., and Jones, H.L. (2020) Rapid macrobenthic diversification and stabilization after the end-Cretaceous mass extinction event. *Geology* v. 48, 1048–1052. <https://doi.org/10.1130/G47589.1>
  34. **Lowery, C.M.**, Bown, P., Fraass, A.J., and Hull, P.M. (2020) Ecological response of plankton to environmental change and thresholds for extinction. *Annual Review of Earth and Planetary Science* v. 48, <https://doi.org/10.1146/annurev-earth-081619-052818>.
  33. Kring, D.A., Tikoo, S.M., Schmieder, M., Riller, U., Rebolledo-Vieyra, M., Simpson, S.L., Osinski, G.R., Gattacceca, J., Wittman, A., Verhagen, C.M., Cockell, C., Coolen, M.J.L., Longstaffe, F.J., Gulick, S.P.S., Morgan, J.V., Bralower, T.J., Chenot, E., Christeson, G.L., Claeys, P., Ferrière, L., Gebhardt, C., Goto, K., Green, S.L., Jones, H., Lofi, J., **Lowery, C.M.**, Ocampo-Torres, R., Perez-Cruz, L., Pickersgill, A.E., Poelchau, M.H., Rae, A.S.P., Rasmussen, C., Sato, H., Smit, J., Tomioka, N., Urrutia-Fucugauchi, J., Whalen, M.T., Xiao, L., and Yamaguchi, K.E. (2020) Probing the hydrothermal system of the Chicxulub Crater and its potential as a deep Earth habitat. *Science Advances*, 6, eaaz3053 doi: 10.1126/sciadv.aaz3053
  32. Collins, G.S., Patel, N., Rae, A.S.P., Morgan, J.V., Gulick, S.P.S., and **Expedition 364 Scientists**, (2020). A steeply-inclined trajectory for the Chicxulub impact. *Nature Communications*. 11, <https://www.nature.com/articles/s41467-020-15269-x>
  31. Zhao, J., Xiao, L., Gulick, S.P.S., Morgan, J.V., Ross, C.H., de Graaff, S.J., Rasmussen, C., Claeys, P., Schmieder, M., Kring, D., Pickersgill, A., Erickson, T., and **IODP-ICDP Expedition 364 Scientists**, (2020) Geochemistry, Geochronology and Petrogenesis of Maya Block Granitoids and Dikes from the

- Chicxulub Impact Crater, Gulf of México: Implications for the Assembly of Pangea. *Gondwana Research*. 82, 128-150. <https://doi.org/10.1016/j.gr.2019.12.003>
30. Schaefer, B. Grice, K., Coolen, M.J.L., Summons, R.E., Cui, X., Bauersachs, T., Schwark, L., Böttcher, M.E., Bralower, T.J., Lyons, S.L., Freeman, K.H., Cockell, C.S., Gulick, S.P.S., Morgan, J.V., Whalen, M.T., **Lowery, C.M.**, and Vajda, V. (2020) Microbial life in the nascent Chicxulub crater. *Geology*. 48, <https://doi.org/10.1130/G46799.1>
  29. Gulick, S.P.S., Bralower, T.J., Ormö, J., Hall, B., Grice, K., Schaefer, B., Lyons, S., Freeman, K.H., Morgan, J.V., Artemieva, N., Kaskes, P., de Graff, S.J., Whalen, M.T., Collins, S.M., Verhagen, C., Christeson, G.L., Claeys, P., Coolen, M.J., Goderis, S., Goto, K., Grieve, R., McCall, N., Osinski, G.R., Rae, A., Riller, U., Smit, J., Vajda, V., Wittman, A., and **Expedition 364 Scientists**, (2019) The First Day of the Cenozoic. *Proceedings of the National Academy of Sciences*. v. 116, 19342-19351. <https://doi.org/10.1073/pnas.1909479116>
  28. Rasmussen, C., Stockli, D.F., Ross, C.H., Gulick, S.P.S., Christeson, G.L., Wittman, A., Schmieder, M., Kring, D.A., Long, X., Pickersgill, A., Morgan, J.V., and **Expedition 364 Scientists**. (2019) U-Pb memory behavior in Chicxulub's peak ring – applying U-Pb profiling to shocked zircon. *Chemical Geology*. v. 25, 356-367. <https://doi.org/10.1016/j.chemgeo.2019.07.029>
  27. Smith, V., Warny, S., Jarzen, D., Demchuck, T., Vajda, V., and **Expedition 364 Scientific Party** (2019) Paleocene-Eocene miospores from the Chicxulub impact crater, Mexico. Part 1: spores and gymnosperm pollen. *Palynology*. 1-15. <https://doi.org/10.1080/01916122.2019.1630860>
  26. Fraass, A.J., Leckie, R.M., **Lowery, C.M.**, and DeConto, R. (2019). Precision in Biostratigraphy: Evidence for flow reversal in the Central American Seaway during or after the Oligocene Miocene Transition, *Journal of Foraminiferal Research* v. 49, 357-366 <https://doi.org/10.2113/gsjfr.49.4.357>
  25. Rae, A.S.P., Collins, G.S., Morgan, J.V., Salge, T., Christeson, G.L., Leung, J., Lofi, J., Gulick, S.P.S., Poelchau, M., Riller, U., Gebhardt, C., Grieve, R.A.F., Osinski, G.R., and **IODP-ICDP Expedition 364 Scientists** (2019). Impact-induced porosity and micro-fracturing at the Chicxulub impact structure. *JGR Planets* v. 124, 1960-1978 <https://doi.org/10.1029/2019JE005929>
  24. Jones, H., **Lowery, C.M.**, and Bralower, T.J. (2019). Delayed calcareous nannoplankton boom-bust successions in the earliest Paleocene Chicxulub Crater. *Geology*. v. 47, 753-756. <https://doi.org/10.1130/G46143.1>
  23. Timms, N.E., Pearce, M.A., Erickson, T.M., Cavosie, A.J., Rae, A.S.P., Wittman, A., Ferrière, L., Poelchau, M., Naotaka, T., Collins, G.S., Gulick, S.P.S., Morgan, J.V., and **Expedition 364 Scientists** (2019). New shock microstructures in titanite (CaSiO<sub>3</sub>) from the peak ring of the Chicxulub impact structure, Mexico. *Contributions to Mineralogy and Petrology*, v. 174, <https://doi.org/10.1007/s00410-019-1565-7>.
  22. **Lowery, C.M.** and Fraass, A.J. (2019). Morphospace expansion paces taxonomic diversification after end Cretaceous mass extinction. *Nature Ecology and Evolution* v. 3, 900-904. <https://doi.org/10.1038/s41559-019-0835-0>
- \*News and Views:\* Weil, A. and Kirchner, J.W. “Diversity on the rebound.” <https://doi.org/10.1038/s41559-019-0883-5>
21. **Lowery, C.M.**, Bralower, T.J., Christeson, G., Gulick, S.P.S., Morgan, J.V., and Expedition 364 Scientists (2019). Ocean Drilling Perspectives on Meteorite Impacts. *Oceanography* v. 32, 120-134. [invited paper] <https://doi.org/10.5670/oceanog.2019.133>

20. Rae, A.S.P., Collins, G.S., Morgan, J.V., Salge, T., Christeson, G.L., Leung, J., Lofi, J., Gulick, S.P.S., Poelchau, M., Riller, U., Gebhardt, C., Grieve, R.A.F., Osinski, G., and **IODP-ICDP Expedition 364 Scientists** (2019). Stress-Strain Evolution during Peak-Ring Formation: A case study of the Chicxulub structure. *JGR Planets* v. 124, 396-417. <https://doi.org/10.1029/2018JE005821>
19. Lofi, J., Smith, D., Delahunty, C., Le Ber, E., Brun, L., Henry, G., Paris, J., Tikoo, S., Zylberman, W., Pezard, P. A., Célérier, B., Schmitt, D. R., Nixon, C., and **Expedition 364 Science Party** (2018). Drilling-induced and logging-related features illustrated from IODP-ICDP Expedition 364 downhole logs and borehole imaging tools. *Scientific Drilling* v. 24, 1-13, <https://doi.org/10.5194/sd-24-1-2018>.
18. Riller, U., Poelchau, M.H., Rae, A.S.P., Schulte, F., Collins, G.S., Melosh, H.J., Grieve, R.A.F., Morgan, J.V., Gulick, S.P.S., Lofi, J., Diaw, A., McCall, N., Kring, D., and **IODP-ICDP Expedition 364 Science Party**. (2018). Rock fluidization during peak ring formation of large impact craters. *Nature* v. 562, 511-518 <https://doi.org/10.1038/s41586-018-0607-z>
17. Owens, J.D., Lyons, T.W., and **Lowery, C.M.** (2018). Quantifying the missing sink for global organic carbon burial during a Cretaceous oceanic anoxic event. *Earth and Planetary Science Letters* v. 499, p. 83-94. <https://doi.org/10.1016/j.epsl.2018.07.021>.
16. **Lowery, C.M.**, Bralower, T.J., Owens, J.D., Rodríguez-Tovar, F.J., Jones, H. Smit, J., Whalen, M.T., Claeys, P., Farley, K., Gulick, S.P.S., Morgan, J.V., Green, S., Chenot, E., Christeson, G.L., Cockell, C.S. Coolen, M.J.L., Ferrière, L., Gebhardt, C., Goto, K., Kring, D.A., Lofi, J., Ocampo-Torres, R., Perez-Cruz, L., Pickersgill, A.E., Poelchau, M.H., Rae, A.S.P., Rasmussen C., Rebolledo-Vieyra, M., Riller, U., Sato, H., Tikoo, S.M., Tomioka, N., Urrutia-Fucugauchi, J., Vellekoop, J., Wittmann, A., Xiao, L., Yamaguchi, K.E., Zylberman, W. (2018). Rapid recovery of life at ground zero of the End Cretaceous mass extinction. *Nature* v. 558, p. 288-291. <https://doi.org/10.1038/s41586-018-0163-6>
15. Christeson, G.L., Gulick, S.P.S., Morgan, J.V., Gebhardt, C., Le Ber, E., Lofi, J., Nixon, C., Rae, A., Rebolledo-Vieyra, M., Schmitt, D.R., Bralower, T., Chenot, E., Claeys, P., Cockell, C., Coolen, M.J.L., Ferrière, L., Green, S., Goto, K., Jones, H., Kring, D.A., Long, X., **Lowery, C.M.**, Mellet, C., Ocampo-Torres, R., Osinski, G.R., Perez-Cruz, L., Pickersgill, A., Poelchau, M., Rasmussen, C., Riller, U., Sato, H., Smit, J., Tikoo, S., Tomioka, N., Urrutia-Fucugauchi, J., Whalen, M., Wittman, A., Yamaguchi, K.E., Zylbermann, W., (2018) Extraordinary rocks of the Chicxulub Crater Peak-ring: Physical property measurements from IODP/ICDP Expedition 364 *Earth and Planetary Science Letters* v. 495, p. 1-11. doi:10.1016/j.epsl.2018.05.013
14. **Lowery, C.M.**, Leckie, R.M., Bryant, R., Elderbak, K., Parker, A., Polyak, D., Schmidt, M., Snoeyenbos-West, O., and Sterzinar, E., (2018). The Late Cretaceous Western Interior Seaway as a model for oxygenation change in epicontinental restricted basins, *Earth Science Reviews*, v. 177, p. 545-564 doi:10.1016/j.earscirev.2017.12.001.
13. **Lowery, C.M.**, Cunningham, R., Barrie, C.D., Bralower, T.J., and Snedden, J.W. (2017). The northern Gulf of Mexico during OAE2 and the relationship between water depth and black shale development, *Paleoceanography*, v. 32 doi:10.1002/2017PA003180.
12. Artemieva, N., Morgan, J., Gulick, S., Bralower, T., Chenot, E., Christeson, G., Claeys, P., Cockell, C., Collins, G.S., Coolen, M.J.L., Ferrière, L., Gebhardt, C., Goto, K., Green, S., Jones, H., Kring, D.A., Le Ber, E., Lofi, J., Long, X., **Lowery, C.M.**, Mellet, C., Ocampo-Torres, R., Osinski, G., Perez-Cruz, L., Pickersgill, A., Poelchau, M., Rae, A., Rasmussen, C., Rebolledo-Vieyra, M., Riller, U., Sato, H., Schmitt, D.R., Smit, J., Tikoo, S., Tomioka, N., Urrutia-Fucugauchi, J., Whalen, M. Wittman, A., Yamaguchi, K.E., and Zylberman, W. (2017). Quantifying the release of climate-active gases by large meteorite impacts with a case study of Chicxulub. *Geophysical Research Letters*, v. 44 doi: 10.1002/2017GL074879.



11. Kring, D.A., Claeys, P., Gulick, S.P.S., Morgan, J.V., Collins, G.S., Bralower, T., Chenot, E., Christeson, G., Cockell, C., Coolen, M.J.L., Ferrière, L., Gebhardt, C., Goto, K., Green, S., Jones, H., Le Ber, E., Lofi, J., Long, X., **Lowery, C.M.**, Mellet, C., Ocampo-Torres, R., Osinski, G., Perez-Cruz, L., Pickersgill, A., Poelchau, M., Rae, A., Rasmussen, C., Rebolledo-Vieyra, M., Riller, U., Sato, H., Schmitt, D.R., Smit, J., Tikoo, S., Tomioka, N., Urrutia-Fucugauchi, J., Whalen, M. Wittman, A., Yamaguchi, K.E., and Zylberman, W. (2017). Chicxulub and the exploration of large peak-ring impact craters through scientific drilling. *GSA Today* v. 27 doi: 10.1130/GSATG352A.1.
10. Denne, R.A., Callendar, A.D., Engelhardt-Moore, N., Hinote, R.E., **Lowery, C.M.**, (2017). *Gavelinella breardi*, a new name for the Turonian Gulf Coast marker species *Anomalina* "W." *Journal of Foraminiferal Research*, v. 47, p. 358-365, doi: 10.2113/gsjfr.47.4.358.
9. **Lowery, C.M.** and Leckie, R.M. (2017). Biostratigraphy of the Cenomanian-Turonian Eagle Ford Shale of South Texas, *Journal of Foraminiferal Research* v. 47, p. 105-128. doi: 10.2113/gsjfr.47.2.105
8. Fraass, A.J. and **Lowery, C.M.** (2017). Defining uncertainty and error in planktic foraminiferal oxygen isotope measurements, *Paleoceanography* v. 32, doi: [10.1002/2016PA003035](https://doi.org/10.1002/2016PA003035).
7. Owens, J.D., Lyons, T.W., Hardisty, D.S., **Lowery, C.M.**, Lu, Z., Lee, B., Jenkyns, H.C. (2017). Patterns of local and global redox variability during the Cenomanian–Turonian Boundary Event (Oceanic Anoxic Event 2) recorded in carbonates and shales from central Italy, *Sedimentology* v. 64, p.168-185 <http://dx.doi.org/10.1111/sed.12352>
6. **Lowery, C.M.**, Leckie, R.M., and Sageman, B.B., (2017). Micropaleontological Evidence for Redox Changes in the OAE3 Interval of the US Western Interior: Global vs. Local Processes: *Cretaceous Research* v. 69, p. 34-48. <http://dx.doi.org/10.1016/j.cretres.2016.08.011>  
\*Editor's Choice featured article\*
5. **Lowery, C.M.** (2016). Expression of the Cenomanian-Turonian Oceanic Anoxic Event 2 in the Gulf of Mexico: A Review, in Lowery, C.M., Snedden, J., and Rosen, N., Eds., *35<sup>th</sup> Annual Perkins Rosen Conference Proceedings*, Gulf Coast Section of the Society of Economic Paleontologists and Mineralogists, p. 450-478.
4. Morgan, J., Gulick, S., Bralower, T., Chenot, E., Christeson, G., Claeys, P., Cockell, C., Collins, G.S., Coolen, M.J.L., Ferrière, L., Gebhardt, C., Goto, K., Jones, H., Kring, D.A., Le Ber, E., Lofi, J., Long, X., **Lowery, C.M.**, Mellet, C., Ocampo-Torres, R., Osinski, G., Perez-Cruz, L., Pickersgill, A., Poelchau, M., Rae, A., Rasmussen, C., Rebolledo-Vieyra, M., Riller, U., Sato, H., Schmitt, D.R., Smit, J., Tikoo, S., Tomioka, N., Urrutia-Fucugauchi, J., Whalen, M. Wittman, A., Yamaguchi, K.E., and Zylberman, W., (2016). The formation of peak rings in large impact craters, *Science* v. 354, p. 878-882. <http://dx.doi.org/10.1126/science.aah6561>  
  
\*Perspective:\* Barton, P. "Revealing the dynamics of large impacts" [DOI: 10.1126/science.aak9802](https://doi.org/10.1126/science.aak9802)
3. **Lowery, C.M.**, Corbett, M.J., Leckie, R.M., Watkins, D., Miceli Romero, A., and Pramudito, A. (2014). Foraminiferal and nannofossil paleoecology and paleoceanography of the Cenomanian-Turonian Eagle Ford Shale across southern Texas. *Palaeogeography, Palaeoclimatology, Palaeoecology* v. 413, p. 49-65. <http://dx.doi.org/10.1016/j.palaeo.2014.07.025>
2. Donovan, A.D., Staerker, T.S., Pramudito, A., Li, W., Corbett, M.J., **Lowery, C.M.**, Miceli Romero, A., and Gardner, R.D. (2012). The Eagle Ford outcrops of West Texas: a field laboratory for understanding heterogeneities within unconventional mudstone reservoirs, *GCAGS Journal*, v. 1, p.162-185.

1. John, C.M., Karner, G.D., Browning, E., Leckie, R.M., Mateo, Z., Carson, B., and **Lowery, C.**, (2011). Timing and magnitude of Miocene eustasy derived from the mixed siliciclastic-carbonate record of the northeastern Australian margin. *Earth and Planetary Science Letters*, v. 304, No 3-4, p. 455-467.

#### PAPERS SUBMITTED/IN REVIEW

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6. Snedden, J.W., **Lowery, C.**, and Lawton, T. (*submitted*) The End of the Cretaceous: Depositional paleogeographic reconstruction of the Gulf of Mexico and adjacent areas just prior to the Chicxulub impact. *Geological Society of London Special Publication Cretaceous Project 200: Volume 2 Regional Studies of the Cretaceous*
5. Ellis, N.M., van Wijk, J.W., **Lowery, C.M.**, Owens, J.D., Liu, L., Wu, J., and Coblenz, D. (*in revision*) Somali Basin pelagic carbonate stratigraphy constrains Afar mantle plume dynamic uplift. *Nature*.
4. Fraass, A., Lam, A., **Lowery, C.**, and Jamson, K. (*in revision*) Abolish the Monarchy: Key adaptation subjugates the Red Queen. *Nature Ecology and Evolution*.
3. Swartz, J.M., Standring, P., Goff, J., Gulick, S., and **Lowery, C.** (*submitted*) The Stratigraphic Record of a Coastal River During Transgression: A New Look at the Trinity River Using Multi-Resolution Seismic Imaging. *Sedimentology*. Pre-print: <https://doi.org/10.31223/X5P044>
2. Rovelli, R.C., Myers, C.E., Garb, M.P., Larina, E., Phillips, G., Witts, J.D., **Lowery, C.M.**, Landman, N.H. (*submitted*) Recovery of ecosystem structure and diversity after the end-Cretaceous mass extinction: New insight from the Gulf Coastal and Atlantic Coastal Plains. *Palaios*.
1. \*Standring, P., **Lowery, C.**, Burstein, J., Swartz, J., Goff, J.A., and Gulick, S.P.S. (*in revision*) Foraminiferal analysis of Holocene sea level rise within Trinity River incised paleo-valley, offshore Galveston Bay, Texas. *Marine Geology* Pre-print: <https://doi.org/10.31223/X5XG91>

#### OTHER PUBLICATIONS

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12. Coggan, R.M., Sylvan, J.B., Teagle, D.A.H., Reece, J., Christeson, G.L., Estes, E.R., Williams, T.J., and the **Expedition 390 Scientists** (2022) *Expedition 390 Preliminary Report: South Atlantic Transect 1*. International Ocean Discovery Program. College Station, TX. <https://doi.org/10.14379/iodp.pr.390.2022>
11. Goff, J.A., Gulick, S.P.S., **Lowery, C.M.**, and Christeson, G.L. (2022) Texas offshore sediment resources inventory: development and application of geophysical processing workflows for sand resource evaluation , New Orleans (LA): US Department of the Interior, Bureau of Ocean Energy Management. 140 p. Cooperative Agreement No.: M16AC00020. Report No.: 2022-035.
10. Self-Trail, J.M., Barrie, C.D., and **Lowery, C. M.**, 2021, Isotope, organic carbon, and biostratigraphic data for the Hope Plantation (BE-110) and Smith Elementary School (CR-675) cores, North Carolina: **U.S. Geological Survey data release**, <https://doi.org/10.5066/P9V0U1NF>.
9. Koppers, A. & Coggan, R. (eds.), Burberry, C., D'Hondt, S., Feakins, S., Godard, M., Fulton, P., Grice, K., Grunert, P., **Lowery, C.**, Michibayashi, K., Miller, K., McKay, R., Morris, A., Norris, R., O'Regan, M., Pages, A., Parnell-Turner, R., Romans, B., Wallace, L., Colwell, F., Sylvan, J., Straub, S., Teagle, D. (2020) *Exploring Earth by Scientific Ocean Drilling, 2050 Science Framework*. 124 pp., <https://doi.org/10.6075/J0W66J9H>
8. Bhatia, R., Lam, A., Kaiser, E., **Lowery, C.**, and Cotton, L. (2019) Micropaleontologists take on (Discovery Channel's) Shark Week with Protists! *Geoscientist*, Dec. 2019, p. 27.
7. **Lowery, C.M.**, Gulick, S.P.S., Stockli, D., Yancy, T., Campion, K.M., and Denne, R.A. (2019) The Cretaceous-Paleogene Boundary Deposit Across the Gulf of Mexico: Field Trip to the Brazos River Outcrops and IODP Gulf Coast Repository. *AAPG Annual Meeting Field Trip # 7 Guidebook*. 54 p.

6. Morgan, J., Gulick, S., Bralower, T., Chenot, E., Christeson, G., Claeys, P., Cockell, C., Collins, G.S., Coolen, M.J.L., Ferrière, L., Gebhardt, C., Goto, K., Jones, H., Kring, D.A., Le Ber, E., Lofi, J., Long, X., **Lowery, C.**, Mellet, C., Ocampo-Torres, R., Osinski, G., Perez-Cruz, L., Pickersgill, A., Poelchau, M., Rae, A., Rasmussen, C., Rebolledo-Vieyra, M., Riller, U., Sato, H., Schmitt, D.R., Smit, J., Tikoo, S., Tomioka, N., Urrutia-Fucugauchi, J., Whalen, M. Wittman, A., Yamaguchi, K.E., and Zylberman, W., (2017), *Initial Reports of the International Ocean Discovery Program*, v. 364. College Station, TX, doi:10.14379/iodp.proc.364.2017.
5. Gulick, S., Morgan K., Mellet, C.L., Bralower, T., Chenot, E., Christeson, G., Claeys, P., Cockell, C., Collins, G.S., Coolen, M.J.L., Ferrière, L., Gebhardt, C., Goto, K., Jones, H., Kring, D.A., Le Ber, E., Lofi, J., Long, X., **Lowery, C.**, Ocampo-Torres, R., Osinski, G., Perez-Cruz, L., Pickersgill, A., Poelchau, M., Rae, A., Rasmussen, C., Rebolledo-Vieyra, M., Riller, U., Sato, H., Schmitt, D.R., Smit, J., Tikoo, S., Tomioka, N., Urrutia-Fucugauchi, J., Whalen, M. Wittman, A., Yamaguchi, K.E., and Zylberman, W., (2017). *Expedition 364 Preliminary Report: Chicxulub: Drilling the K-Pg Impact Crater*. International Ocean Discovery Program. College Station, TX. doi:10.14379/iodp.pr.364.2017
4. **Lowery, C.M.**, Snedden, J., and Rosen, N., Editors, (2016). *35<sup>th</sup> Annual Perkins Rosen Conference Proceedings, Gulf Coast Section of the Society of Economic Paleontologists and Mineralogists*.
3. Rosenthal, Y., Mountain, G., and **Shipboard Scientific Party**, (2013). Site survey and coring of potential IODP drill sites in the Western Pacific Warm Pool. **RR1313 Cruise Report** (IODP Proposal 799), 31 p.
2. Staerker, T.S., Febo, L., Corbett, M.J., and **Lowery, C.M.**, (2013). Field Guide to the Micropaleontology of the Eagle Ford (Boquillas) Formation: West Texas. *NAMS Microfossils III Conference Field Seminar*.
1. Donovan, A.D., Staerker, T.S., Li, W., Pramudito, A., Evernick, J., McClain, T., Agrawal, A., Banfield, L., Land, S., Corbett, M.J., **Lowery, C.M.**, and Miceli Romero, A., (2011). Field guide to the Eagle Ford (Boquillas) Formation: West Texas. *AAPG Annual Meeting 2011*.

#### SELECTED CONFERENCE PRESENTATIONS

\*Student mentee †Postdoc mentee

##### Oral Presentations

31. \*Faulkner, K., **Lowery, C.M.**, and Martindale, R. (2022) Long-term evolutionary trends within benthic foraminifera. Geological Society of America *Abstracts with Programs* v. 54 doi: 10.1130/abs/2022AM-379008
30. †Woodhouse, A., Swain, A., Fagan, W.F., Fraass, A.J., and **Lowery, C.M.** (2022) Network Analysis of the marine micropaleontological record (part 2): Late Cenozoic cooling restructured global marine plankton communities. Geological Society of America *Abstracts with Programs* v. 54 doi: 10.1130/abs/2022AM-380809
29. **Lowery, C.M.**, Bown, P., Fraass, A., Hull, P.M. (2021) The ecological response of plankton to major Mesozoic and Cenozoic climate events. Geological Society of America *Abstracts with Programs*. v. 53 doi: 10.1130/abs/2021AM-369174 [invited talk]
28. Martindale, R., Nelson, M., Ramos, E., Shuck, B., Fakhreddine, S., Tremaine, D.M., Loewy, S., **Lowery, C.M.**, Goudge, T., Christeson, G., and Johnson, J.P.L. (2021) Lessons learned by the UT Austin URGE megapod and our plan for continued action. Geological Society of America *Abstracts with Programs*. v. 53 doi: 10.1130/abs/2021AM-368000
27. Naujokaitye, J., Garb, M., Landman, N., Cochran, J., Witts, J., **Lowery, C.M.**, Rashkova, A., Phillips, G., Broussard, J. Larina, E., Meyers, C. (2021) Did Ammonites survive for a brief time after the K/Pg mass extinction on the US Gulf Coastal Plain? Geological Society of America *Abstracts with Programs*. v. 53 doi: 10.1130/abs/2021AM-369238
26. **Lowery, C.M.**, Standing, P., Swartz, J., Goff, J., Gulick, S.P.S., Reece, R., Bretting, N. (2019).



- Sediment coring to ground-truth seismic and test sand resource potential in the Trinity River paleovalley offshore Galveston, TX. BOEM Sand Resource Working Group Annual Meeting.
25. Goderis, S., Sato, H., Ferrière, L., Schmitz, B., Burney, D., Bralower, T.J., de Graaff, S.J., Déhais, T. de Winter, N.J., Elfman, M., Feignon, J.-G., Gulick, S.P.S., Ishikawa, A., Kaskes, P., Koeberl, C., Kristiansson, P., **Lowery, C.M.**, Morgan, J., Neal, C.R., Owens, J.D., Schulz, T., Sinnesael, M., Smit, J., Vellekoop, J., Whalen, M.T., Wittmann, A., Vanhaecke, F., Van Malderen, S., Claeys, P. (2019). The final settling of meteoric matter in the peak-ring of the Chicxulub impact structure at Site M0077A of IODP-ICDP Expedition 364. Large Meteorite Impacts and Planetary Evolution VI, abstract 5068.
  24. **Lowery, C.M.**, Jones, H.J., and Bralower, T.J. (2019) Local heterogeneity of marine export productivity in the aftermath of the K-Pg mass extinction Geological Society of America *Abstracts with Programs*. v. 51, doi: 10.1130/abs/2019AM-340651
  23. Snedden, J., **Lowery, C.M.** [*presenting*], Ross, C., and Gulick, S.P.S. (2018) Reconstruction of the Gulf of Mexico paleogeography just prior to the end Cretaceous Chicxulub impact. AGU Fall Meeting. PP53B-06
  22. **Lowery, C.M.**, Fraass, A.J., and Expedition 364 Science Party (2018). Explanation for delayed recovery of planktic foraminifer diversity after the K-Pg mass extinction. *Forams* 2018.
  21. **Lowery, C.M.**, Jones, H., Bralower, T.J., Smit, J., Rodríguez-Tovar, F.J., Whalen, M.T., Owens, J.D., IODP-ICDP Expedition 364 Science Party (2017). Long-term recovery of life in the Chicxulub Crater, AGU Fall Meeting, P23H-07.
  20. **Lowery, C.M.**, Jones, H., Bralower, T.J., Smit, J., Rodríguez-Tovar, F.J., Whalen, M.T., Owens, J.D., and Exp. 364 Science Party, (2017). Recovery of Life at Ground Zero. *Pardee Keynote Sessions*. GSA Abstracts with Programs. Vol. 49, doi: 10.1130/abs/2017AM-303167.
  19. **Lowery, C.M.**, Jones, H., Bralower, T.J., Smit, J., Owens, J.D., and Exp. 364 Science Party, (2017). The Recovery of life in the Chicxulub Crater Following the End Cretaceous Mass Extinction, Geologic Problem Solving with Microfossils IV, Abstracts with program p. 62-63.
  18. **Lowery, C.M.**, Jones, H., Bralower, T.J., Smit, J., Owens, J.D., and Exp. 364 Science Party, (2017). The Recovery of life in the Chicxulub Crater following the end Cretaceous mass extinction: Lunar and Planetary Science Conference abstracts with programs [2156](#).
  17. **Lowery, C.M.**, Snedden, J.W., Cunningham, R., and Barrie, C., (2016). Expression of the Cenomanian-Turonian Oceanic Anoxic Event 2 in the Northern Gulf of Mexico. GCSSEPM Perkins-Rosen Research Conference, *Program with Abstracts* p. 15.
  16. **Lowery, C.M.**, (2016). The Marine Tuscaloosa in the Sun Spinks Core. GCSSEPM Perkins-Rosen Research Conference Core Workshop.
  15. **Lowery, C.M.**, Snedden, J.W., Gulick, S., and Exp. 364 Science Party, (2016). The Chicxulub impact in the Gulf of Mexico: New insights from seismic and IODP drilling. TGS Gulf of Mexico Symposium. [*invited keynote*]
  14. **Lowery, C.M.**, Snedden, J.W., Cunningham, R., and Ganey-Curry, P.E., (2016). Expression of the Cenomanian-Turonian Oceanic Anoxic Event 2 in the Northern Gulf of Mexico. SEPM Research Conference: Oceanic Anoxic Events.
  13. Sageman, B.B., Leckie, R.M., Barclay, R., and **Lowery, C.M.**, (2016). Cretaceous ocean-climate perturbations revealed in the Cenomanian-Campanian strata of Colorado: Field trip associated with symposium honoring the scientific contributions of Michael A. Arthur. Geological Society of America Pre-Meeting Field Trip 412.
  12. **Lowery, C.M.**, Leckie, R.M., (2015). Temporal and geographic distribution of anoxia in the hemipelagic carbonates of the Turonian-Campanian Niobrara Formation, U.S. Western Interior. Geological Society of America *Abstracts with Programs*, Vol. 47, No. 7, p. 171.
  11. Leckie, R.M., Elderbak, K., **Lowery, C.M.**, Parker, A.L., (2015). Paleooceanography and

- Paleoenvironmental changes of the Cenomanian/Turonian Boundary Interval (94-93 Ma): the record of Oceanic Anoxic Event 2 in the Western Interior Sea. Geological Society of America *Abstracts with Programs*, Vol. 47, No. 7, p. 171.
10. **Lowery, C.M.**, Leckie, R.M., (2015). Biotic Record of "OAE3" in the U.S. Western Interior Sea: Global Event or Local Signature? *Climates of the Past, Lessons of the Future*. Ascona, Switzerland.
  9. **Lowery, C.M.**, Leckie, R.M., (2015). Microfossil record of the paleoenvironment of the Late Cretaceous Niobrara Formation, Western Interior U.S. American Association of Petroleum Geologists Annual Convention and Exposition, *Abstracts with Programs*
  8. **Lowery, C.M.**, Tessin, A., Leckie, R.M., (2014). Foraminiferal record of oceanographic and biotic changes in the Western Interior Seaway before and during OAE3. Geological Society of America, *Abstracts with Programs*, Vol. 46 No. 6.
  7. **Lowery, C.M.**, Browning, E.B., Leckie, R.M., John, C.M., (2013). Foraminifera as proxies for Miocene sea level change and sequence boundaries: observations from the Marion Plateau, ODP Leg 194. NAMS Microfossils III Conference, *Abstracts with Programs*, p. 85-86.
  6. **Lowery, C.M.**, Corbett, M. J., Leckie, R.M., Watkins, D., Staerker, T.S., and Donovan, A.D., (2013). Foraminiferal evidence of paleoceanographic transitions in the Cenomanian-Turonian Eagle Ford Shale across southern Texas. NAMS Microfossils III Conference, *Abstracts with Program*, p. 85.
  5. Fraass, A.J., Dameron, S., Leachman, J., **Lowery, C.M.**, Nathan, S.A., and Leckie, R.M., (2013). FACTbase: a new solution of Foram identification. NAMS Microfossils III Conference, *Abstracts with Programs*, p.51.
  4. John, C.M., Browning, E., **Lowery, C.M.**, Leckie, R.M., Karner, G.D., and Schouten, S., (2012). Miocene History of the East Antarctic Ice-sheet Inferred from the Eustatic and Paleocceanographic Record of The Marion Plateau, Northeastern Australia (ODP Leg 194). AGU Fall Meeting, PP13C-05.
  3. **Lowery, C.M.**, Corbett, M.J., Pramudito, A., Miceli Romero, A., Leckie, R.M., Watkins, D.K., Donovan, A., and Staerker, T.S., (2012). Foraminiferal paleoecology and paleoceanography of the Cenomanian-Turonian Eagle Ford Shale at Lozier Canyon, Texas. Geological Society of America, *Abstracts with Programs*. Vol. 44, No. 7, p.323
  2. **Lowery, C.M.**, Browning, E., Leckie, R.M. and John, C.M., (2012). Revised Miocene biostratigraphy of the Marion Plateau, NE Australia margin, and implications for sequence stratigraphy and paleoceanography. Geological Society of America *Abstracts with Programs*, Vol. 44, No. 2 p.104
  1. **Lowery, C.M.**, Corbett, M., Miceli Romero, A., Leckie, R.M., Watkins, D.K., Donovan, A., and Staerker, T.S. (2011). Multi-proxy correlation of the Eagle Ford Shale in west Texas to the Bridge Creek Limestone (Cenomanian-Turonian GSSP) in central Colorado. Geological Society of America *Abstracts with Programs*, Vol. 43, No. 5, p. 377.

#### Poster Presentations

24. **Lowery, C.**, Perez Cruz, L., Urrutia Fucugauchi, J., Standring, P., Austin, J.A., Wei, J., Davis, M. (2022) Insights into Cenozoic current flow in the Gulf of Mexico from new seismic lines from the Campeche Bank. Geological Society of America *Abstracts with programs* v. 54 doi: <https://doi.org/10.1130/abs/2022AM-378997>
23. †Kearns, L., Sanchez-Montes, M., Sepúlveda, J., and **Lowery, C.M.** (2022) Did non-fossilizing plankton rule the oceans after the End Cretaceous Mass Extinction? Geological Society of America *Abstracts with Programs* v. 54 doi: 10.1130/abs/2022AM-379754
22. \*Standring, P., **Lowery, C.**, Martindale, R. (2022). Deep-water circulation in the Gulf of Mexico during the Eocene-Oligocene Transition. 14<sup>th</sup> International Conference on Paleocceanography, P2-115
21. \*Standring, P., **Lowery, C.**, Martindale, R. (2021) Deep-water circulation in the southern Gulf of

- Mexico at the Eocene-Oligocene Transition. AGU Fall Meeting PP15E-0962.
20. \*Standing, P., **Lowery, C.**, Burstein, J., Swartz, J.M., Goff, J.A., and Gulick, S.P.S. (2021) Foraminiferal analysis of Holocene sea level rise within Trinity River incised paleo-valley, offshore Galveston Bay, Texas. Geological Society of America *Abstracts with Programs*, Vol. 53, doi: 10.1130/abs/2021AM-370907
  19. Van Wijk, J., Ellis, N., Liu, L., **Lowery, C.M.**, and Owens, J. (2021) Reconstructing paleo-dynamic topography of the ocean basins. Geological Society of America *Abstracts with Programs*, Vol. 53, doi: 10.1130/abs/2021AM-367942
  18. Coggan, R.M., **et al.**, The South Atlantic Transect – A multidisciplinary scientific ocean drilling investigation. AGU Fall Meeting T43F-0510
  17. **Lowery, C.M.**, Self-Trail, J.M., Barrie, C., Gilbreath, K., Yagodinski, L. (2019) Expression of Cenomanian-Turonian OAE2 on the East Coast of North America. AGU Fall Meeting PP13C-1446.
  16. **Lowery, C.M.**, Sibert, E.C. (2019) A comprehensive biological oceanographic expedition to determine the true ecological change at the Cretaceous-Paleogene Mass Extinction. AGU Fall Meeting PP23D-1654
  15. \*Bretting, N., Lowery, C., Goff, J., Gulick, S. P., Davis, M. B., Duncan, D., & Sastrup, S. (2019) The potential of Texas Mud Blanket sediment cores for investigating modern and ancient storm deposits. AGU Fall Meeting ED23G-1110.
  14. Swartz, J.M., Goff, J., Standing, P., and **Lowery, C.M.** (2019) Coastal river morphodynamic response to sea-level rise recorded in offshore stratigraphy: A new look at the Trinity incised valley. AGU Fall Meeting EP21D-2228.
  13. \*Standing, P., **Lowery, C.M.**, Gulick, S.P.S., Swartz, J., and Goff, J. (2019). Holocene Sea Level Rise and Paleo-Environmental Change within Trinity River paleo-valley offshore Galveston Bay, Gulf of Mexico. Geological Society of America *Abstracts with Programs*. v. 51, doi: 10.1130/abs/2019AM-338683
  12. **Lowery, C.M.**, Jones, H., Bralower, T.J., Whalen, M.T., Perez Cruz, L., Gebhardt, C., Yamaguchi, K.E., Purkey Phillips, M., Snedden, J., and Expedition 364 Scientists (2018). Long term recovery of life in the Chicxulub Crater. AGU Fall Meeting PP51D-1171. <https://paleorxiv.org/evyf5>
  11. \*Standing, P., Davis, M.B., Gulick, S.P.S., **Lowery, C.M.**, Goff, J., Duncan, D., and Sastrup, S. (2018). The University of Texas Institute for Geophysics Marine Geology and Geophysics Field Course. AGU Fall Meeting ED51H-0725.
  10. **Lowery, C.M.**, Snedden, J., Cunningham, R., Barrie, C., and Leckie, R.M., (2016). The Cenomanian-Turonian Oceanic Anoxic Event 2 in the Western Interior US and Gulf of Mexico: Decoupled Black Shale Deposition and Carbon Isotopes. AGU Fall Meeting, PP51C-2317.
  9. Fraass, A.J. and **Lowery, C.M.**, (2016). Defining Uncertainty and Error in Planktic Foraminiferal Oxygen Isotope Measurements. AGU Fall Meeting, PP31C-2292.
  8. **Lowery, C.M.**, Fraass, A.J., (2015). (Sample) Size Matters: Defining Error in Planktic Foraminiferal Isotope Measurement. AGU Fall Meeting, PP53B-2328.
  7. **Lowery, C.M.**, Corbett, M.C., Leckie, R.M., (2013). Foraminiferal biostratigraphy and paleoecology of the Turonian-Coniacian Austin Chalk in west Texas. Geological Society of America *Abstracts with Programs*, vol. 45 no. 7, p. 332.
  6. **Lowery, C.M.**, Browning, E., Leckie, R.M., and John, C. (2012). High-resolution record of Early to Middle Miocene climate variability from Site 1195, Marion Plateau, NE Queensland margin. AGU Fall Meeting, PP23A-2028.
  5. **Lowery, C.**, Corbett, M., Leckie, R.M., Watkins, D., Donovan, A., and Staerker, T.S. (2012). Foraminiferal paleoecology of the Cenomanian-Turonian Eagle Ford Shale at Lozier Canyon, West Texas. Cioppino Conference 2012.
  4. Corbett, M., **Lowery, C.M.**, Miceli Romero, A., Watkins, D.K., Leckie, R.M., Li, W., Pramudito, A.,

- Donovan, A., and Staerker, T.S. (2011). A Bio-chemostratigraphic framework of Oceanic Anoxic Event 2 at Lozier Canyon, TX: correlations to the Western Interior Seaway and comparisons to sequence stratigraphic surfaces. Geological Society of America *Abstracts with Programs*, Vol. 43, No. 5, p. 611
3. **Lowery, C.M.**, Leckie, R.M., Browning, E., and John, C. (2010). Revised biostratigraphy for ODP Leg 194, Marion Plateau, NE Australia: dating and timing of sea level events. *Forams 2010 Abstracts with Programs*, p. 133.
  2. **Lowery, C. M.**, Browning, E., Leckie, R.M., and John, C. (2010). New biostratigraphic time scale for ODP Leg 194, Marion Plateau, NE Australia. Geological Society of America *Abstracts with Programs*, Vol. 42, No. 2, p. 166.
  1. **Lowery, C. M.**, Smith, S.P., Tibert, N.E., Hemming, S., Zimmerman, S.H., and Hemming, G. (2008). The viability of Ostracoda as proxies for Pleistocene-Holocene climate change at Mono Lake, California. Geological Society of America *Abstracts with Programs*, Vol. 40, No. 4, p. 22.

### GRANTS AND FELLOWSHIPS

[2021-23]	-NSF-OCE-2037752 Collaborative Proposal: Was There a Shift Toward Small, Non-Fossilizing Plankton After the End of the Cretaceous Mass Extinction? (PI)	<b>\$398,892</b>
[2021-22]	-IODP Pre-Drilling Activities Award, Supplemental Ship Time for SE GOM (PI)	<b>\$50,400</b>
[2021-22]	-BOEM M21AC00006-00 GOM Offshore Sediment Inventory: Processing of Industry G&G Data for Inclusion into MMIS (PI)	<b>\$50,000</b>
[2020-22]	-GLO 20-164-000-C216 Identification and Investigation of Sand Deposits in the Trinity River Paleovalley, Offshore Galveston, Texas (Co-PI)	<b>\$1,372,530</b>
	-NSF-OCE-1928888 Seismic Stratigraphic Reconstruction of Cretaceous to Holocene Current Flow Through the Southeastern Gulf of Mexico. (PI)	<b>\$222,773</b>
[2019-21]	-BOEM M16AC00020 Amd. 4 Texas Offshore Resources Inventory: Development and Application of Geophysical Processing Workflows for Sand Resource Evaluation (Co-PI)	<b>\$401,000</b>
[2018]	-BOEM M16AC00020 Amd. 3 Texas Offshore Resources Inventory: Development and Application of Geophysical Processing Workflows for Sand Resource Evaluation (Co-PI)	<b>\$63,687</b>
	-ConTex Collaborative Research Grant: A Gateway Revealed: Understanding the History of Flow Through the Florida Straits (Co-PI)	<b>\$49,793</b>
[2017-19]	-NSF-OCE-1737351 Collaborative Proposal: Chicxulub Impact Effects and the Recovery of Life Using Scientific Drilling Investigations at Ground Zero	
	*Postdoc non-PI contributor* <i>my support out of \$1.2 million total:</i>	<b>\$33,750</b>
	-IODP Post Expedition Award (PI) – Exp. 364 Chicxulub Impact Crater	<b>\$14,997</b>
[2016]	-IODP Workshop Proposal (PI) – IODP Early Career Proposal Workshop	<b>\$40,000</b>
	-IODP Travel and Salary Support (PI) – Exp. 364 Chicxulub Impact Crater	<b>\$19,330</b>
	-Travel Grant – IODP Antarctic Climate History Workshop	<b>\$600</b>
	-UNOLS Chief Scientist Training Cruise travel/science funding	<b>\$1,250</b>
[2014]	-Travel Grant – IsoAstro Workshop	<b>\$1,400</b>
[2013]	-Travel Grant – IODP Survey Cruise 799	<b>\$2,000</b>
	-Travel Grant – IODP Cretaceous Greenhouse Workshop	<b>\$2,000</b>
[2012]	-NSF Travel Grant – Urbino Summer School of Paleoclimatology	<b>\$3,000</b>
	-UMass Isenberg Innovation Challenge – F.A.C.T. Base, 1 <sup>st</sup> Place,	<b>\$26,500</b>
	-BP Research Grant – Eagle Ford Shale Foraminiferal Biostratigraphy and Paleoecology,	

	East Texas subsurface	<b>\$35,488</b>
	-Ed Picou Fellowship – Foraminiferal Biostratigraphy of the Niobrara	<b>\$2,400</b>
[2011]	-BP Research Grant – Eagle Ford Shale Foraminiferal Biostratigraphy and Paleoecology, Del Rio, TX	<b>\$36,871</b>
[2010]	-Cushman Foundation – Student Travel Grant (Forams 2010)	<b>\$1,250</b>
	-Geological Society of America – Miocene Sea Level History of the Marion Plateau, NE Australia Margin	<b>\$3,519</b>
[2008-09]	-UMW Undergraduate Research Grant – Foraminiferal Evidence for Milankovitch-Scale Sea Level Oscillations in L. Cretaceous Deposits in IA	<b>\$1,500</b>
[2007-08]	-UMW Undergraduate Research Grant – Climate Studies of Lacustrine Sediments near Mono Lake, CA	<b>\$2,500</b>

### **HONORS AND AWARDS**

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[2022]	-SEPM James Lee Wilson Award for “Excellence in Sedimentary Geology by an Early Career Scientist”
[2021]	-UTIG Director’s Circle of Excellence
[2020]	-UTIG Outstanding Researcher Award
[2019]	-UTIG Director’s Circle of Excellence Award
[2018]	-UTIG Outstanding Young Researcher Award
	-Editor’s Choice Featured Article, <i>Cretaceous Research</i> (Lowery et al., 2017)
[2012]	-1 <sup>st</sup> Place UMass Isenberg Innovation Challenge – FACTBase Foraminifer database
[2011]	-1 <sup>st</sup> Place Poster for Technical Excellence, BP Technofest
[2004]	-Eagle Scout

### **MENTEES**

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#### **Postdoctoral Fellows**

[2022-]	-Lorna Kearns
[2022-]	-Jingxuan Wei
[2021-]	-Adam Woodhouse

#### **Graduate Students**

[2020-]	-Patty Standring (PhD)
[2020-22]	-Solveig Schilling (MS)

#### **Graduate Committee Member**

[2019-22]	-Cat Ross (PhD Committee Member)
[2019-21]	-Jacob Burstein (MS Committee Member)

#### **Undergraduates**

[2022-]	-Anna Barrera (undergraduate researcher)
[2022-]	-Natalie Jackson (undergraduate researcher)
[2022-]	-Katherine Jacobson (undergraduate researcher)
[2022-]	-Caroline Mackin (undergraduate researcher)
[2021-22]	-Tanner Fonville (undergrad senior honors committee member)
[2020-23]	-Katherine Faulkner (undergraduate researcher)
[2019-22]	-Kate Gilbreath (undergraduate researcher)
[2019-20]	-Nikki Bretting (undergraduate researcher)
[2018-20]	-Patricia Standring (undergraduate researcher)
[2018-19]	-Eric Hiatt (undergraduate researcher)
[2017-18]	-Blake Chapman (undergrad senior honors committee member)
[2016-17]	-Tessa Cayton (undergraduate laboratory assistant)

## Courses Taught

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- [2022] -GEO 338J/381J Marine Geology
- [2021] -GEO F348K/F397F Marine Geology and Geophysics Field Course
- [2020] -GEO 338J/381J Marine Geology
- [2019] -GEO F348K/F397F Marine Geology and Geophysics Field Course
- [2018] -GEO F348K/F397F Marine Geology and Geophysics Field Course
- [2014] -GEOLOGY 102: Exploring Our Local Geologic Landscape (*Smith College*)

## SERVICE

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Peer Reviewer: *AAPG Bulletin*, *ACS-PRF*, *Cretaceous Research*, *GCSSEPM*, *Geology*, *Gondwana Research*, *Journal of African Earth Sciences*, *Journal of Foraminiferal Research*, *Journal of Iberian Earth Sciences*, *Journal of Sedimentary Research*, *Marine Micropaleontology*, *Marine and Petroleum Geology*, *National Geographic*, *Nature*, *NERC*, *NSF*, *Newsletters on Stratigraphy*, *Paleobiology*, *Palaeogeography Palaeoclimatology Palaeoecology*, *PalaeoWorld*, *Proceedings of the Royal Society B*, *Revue de Micropaléontologie*, *Sedimentology*, *Stratigraphy*, *Terra Nova*

- [2023-] -JSG Graduate Studies Committee
- [2023-] -IODP Science Evaluation Panel
- [2022-] -JSG Undergraduate Research Committee
- [2021] -URGE Podlet Leader
- [2020-21] -UTIG Postdoctoral Fellowship Committee (**Chair**)
- [2020-] -UTIG Postdoctoral Mentoring Committee
- [2020-21] -UTIG Research Associate Hiring Committee
- [2020-] -UTIG Executive Committee
- [2020] -JSG Climate Survey Committee
- [2020] -Organizer – IODP Early Career Scientist Proposal Writing Workshop, Lamont Doherty Earth Observatory
- [2019-20] -UTIG Seminar Committee
- [2019-20] -UTIG Annual Performance Evaluation Committee
- [2019-20] -IODP Science Framework chapter lead author
- [2019] -UTIG R.T. Buffler Postdoctoral Fellowship Committee
- [2018-19] -JSG Student Research Symposium Judge
- [2018] -Jackson School Culture and Climate Task Force
- [2018] -UTIG Outstanding Graduate Student Award committee
- [2018] -seminar room renovation committee
- [2018] -Convener – “The K-Pg Mass Extinction and the Chicxulub Impact Crater” (PP53B), AGU Fall Meeting
- [2017] -Convener – “Biotic and Climatic Perturbations in the Marine Realm” (PP34A), AGU Fall Meeting
- [2017] -Lead Proponent – IODP proposal 917-Pre Florida Straits Paleoclimate and Tectonics
- [2017] -Lead Organizer – IODP Early Career Scientist Proposal Writing Workshop, Austin, TX, Jan. 23-25, 2017 <http://usoceandiscovery.org/workshop-early-career-2017/>
- [2016] -Technical Committee Co-Chair – GCSSEPM Perkins-Rosen Research Conference, Houston, TX, December 4-7, 2016
- [2016] -Proponent – IODP Proposal 853-Full2: The South Atlantic Transect
- [2015] -Convener – “Decoding Paleoenvironmental Proxies – Developments, Challenges,



- Refinements, Mechanisms” (PP011), AGU Fall Meeting
- [2014] -Convener – “Ocean climate dynamics: carbon cycle and oxygenation perturbations” (PP007), AGU Fall Meeting
- Committee member, Geomorphology/Earth Surface Processes faculty search, UMass Geosciences Dept.
- [2012-13] -Guest Lecture Series Coordinator, University of Massachusetts Dept. of Geosciences

### INVITED LECTURES

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- [2021] -US Army Corps of Engineers Galveston District Stakeholders Meeting  
 -University of South Carolina, Aiken  
 -Florida State University  
 -Paleo PERCS  
 -The Hydrographic Society of America Houston Chapter
- [2020] -Texas A&M Galveston  
 -Missouri S&T University  
 -University of Minnesota  
 -Dauphin Island Sea Lab  
 -National Autonomous University of Mexico ([YouTube](#))  
 -American Museum of Natural History Climate Week ([link](#))
- [2019] -Rutgers University  
 -SEPM NAMS Annual Meeting, San Antonio, TX  
 -UTIG Friday Seminar Series  
 -McAuliffe-Shepard Discovery Center, Concord, NH  
 -Maine Maritime Academy  
 -Jacksonville University  
 -James Madison University
- [2018] -American Museum of Natural History  
 -Oklahoma State University  
 -Coastal Carolina University  
 -University of Texas, Austin Deford Lecture  
 -Austin Paleontological Society  
 -Planetary Habitability Pop-Up Institute, UT Austin
- [2016] -Texas Museum of Science and Technology  
 -University of Massachusetts
- [2015] -Woods Hole Oceanographic Institute  
 -University of South Carolina  
 -University of Texas, San Antonio

### FIELD EXPERIENCE

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- [2022] -Chief Scientist, *B/O Justo Sierra*, Campeche Bank Sediment Drifts  
 -Shipboard Biostratigrapher, IODP Expedition 390, South Atlantic Transect
- [2021] -Co-Chief Scientist, *R/V Tommy Munro* Trinity/Sabine Drowned River Valleys Cruise
- [2019] -Co-Chief Scientist, *R/V Manta* TRIPP2 Cruise
- [2016] -Shipboard Biostratigrapher, IODP Exp. 364, Chicxulub Impact Crater  
 -Co-Chief Scientist, *R/V Thomas G. Thompson* Cruise TN-338
- [2014] -Kaiparowits Plateau Drilling Project, UT  
 -Niobrara Formation sampling, KS, WY, CO, NM
- [2013] -Science Party Member, IODP Site Survey Cruise 799 – *R/V Roger Revelle*

- [2010-11] -Characterization and sampling of the west Texas Eagle Ford Group
- [2007] -Undergraduate field work at Mono Lake, CA

### **WORKSHOPS, SHORT COURSES, AND SUMMER SCHOOLS**

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- [2021-22] -JSG Diversity Champions workshop series – Austin, TX
- [2020] -IODP Workshop - Demystifying the IODP Proposal Process for Early Career Scientists – Palisades, NY
  - IODP School of Rock – virtual
- [2019] -Paleoclimate to Policy Workshop – Bodega Bay, CA
  - IODP NEXT workshop – Denver, CO
- [2017] -IODP workshop – Demystifying the IODP Proposal Process for Early Career Scientists – Austin, TX
- [2016] -IODP workshop – Antarctica’s Cenozoic Ice and Climate History - College Station, TX
  - UNOLS Chief Scientist Training Cruise – R/V *Thomas G. Thompson*
- [2014] -AGU Communicating Climate Science Workshop – San Francisco, CA
  - IsoAstro Geochronology Workshop, Madison, WI.
- [2013] -Agglutinated Foraminifera Short Course, Houston, TX.
  - IODP workshop – “Exploring the Cretaceous Greenhouse through Scientific Drilling”, London.
- [2012] -IODP workshop – “Communicating Ocean Drilling Science” San Francisco, CA
  - “Reconstructing Earth’s Deep Time History: The State of the Art in 2012” Charlotte, NC
  - Urbino Summer School of Paleoclimatology, Urbino, Italy
- [2011] -5-College Colorado Plateau Field Trip, graduate student leader
  - Paleoclimate Proxy Workshop, Yale University
- [2009] -ExxonMobil Basin Analysis Short Course, Northampton, MA

### **PROFESSIONAL DEVELOPMENT**

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- [2021] -Gulf of Mexico Protected Species Observer certification
  - Bystander Intervention Training
- [2019] -Wilderness First Aid
- [2014] -UMass Center for the Integration of Research, Teaching, and Learning workshop series
- [2013] -Skills for College Teachers – 2 credit graduate course

### **OUTREACH**

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- [2022] -ship to shore zoom tours for IODP Exp. 390
- [2020] -IODP Ocean Discovery Lecturer
  - Skype a Scientist
  - Guest Speaker, Bayside Academy
  - Astronomy on Tap ATX
  - [@ForamWeek](#)
- [2019] -Guest Speaker, St. Elmo Elementary School
  - Skype a Scientist
  - [@ForamWeek](#)
  - Guest Speaker, Science Olympiad ATX Invitational
- [2018] -Skype a Scientist
- [2017] -Explore UT community fair
  - St. Elmo Elementary School Career Day

- Stonington, CT Rotary Club  
[2016] -"Ship" to shore skype calls to schools for IODP Exp. 364  
-Presenter, Hot Science Cool Talks #100 Science Fair  
-[Reddit AMA on Expedition 364 Chicxulub Impact Crater](#)  
[2013, 2015] -STEM Career Day, Holyoke Catholic High School

Website : <https://chrislowerymicropaleo.com/>  
Research Blogs: <http://pacwarmpool.blogspot.com/> (contributor)  
<http://csw.unols.org/scientist-posts/> (contributor)  
<https://esoexpedition364chicxulubimpactcrater.wordpress.com/> (contributor)

## SELECTED MEDIA COVERAGE

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### 2022

Fox 7 News Austin - [UT researcher heads out on drill ship to study Earth's past](#)

### 2021

Houston Chronicle – [As the seas rise and storms threaten, scientists hunt for sand to strengthen the Texas coast](#)

Grist – [A sunken river valley could hold the key to protecting the Texas coast](#)

Scientific American – [Prehistoric Plankton Became Predators to Survive a Mass Extinction](#)

Deutschland Funk – [D-Day: Der Anfang vom Ende der Dinosaurier](#)

### 2020

New York Times - [Asteroid That Killed the Dinosaurs Was Great for Bacteria](#)

EarthDate – [Surviving the Asteroid](#)

### 2019

Fox 7 Austin News – [live interview](#)

Newsweek – [Earth Could Take 10 Million Years to Recover from Mass Extinction Caused by Humans](#)

Business Insider – [So many animals are going extinct that it could take Earth 10 million years to recover](#)

Discover Magazine – [It Took 10 Million Years for Biodiversity to Recover from Dino-Killing Impact](#)

The Independent – [Earth will take millions of years to recover from climate change mass extinction, study suggests](#)

Fast Company – [After humans trigger mass extinction on Earth, it may take 10 million years for life to recover](#)

Science Daily – [Evolution imposes 'speed limit' on recovery after mass extinctions](#)

The London Economic – [Climate change could cause as much damage as when dinosaurs were wiped out by asteroid](#)

New Atlas – [Life on planet Earth may take millions of years to recover from a mass extinction event](#)

Cosmos Magazine – [Mass extinction recovery governed by "morphospace"](#)

The Stand News – [Evolution into the limit of ecological recovery after the extinction \(translated\)](#)

Daily Mail – [Earth will take 10 MILLION years to recover from extinctions caused by global warming- the same time it took to repair ecosystems after dinosaurs were wiped out, experts say](#)

Phys.org – [Evolution imposes 'speed limit' on recovery after mass extinctions](#)

Courthouse News Service – [Recovery From Current Climate Crisis Will Take Millions of Years](#)

Metro – [Climate change damage equivalent to asteroid that wiped out dinosaurs, warn scientists](#)

EurekAlert! – [Evolution imposes 'speed limit' on recovery after mass extinction](#)

University of Bristol News – [Earth's recovery from mass extinction could take millions of years](#)

University of Texas at Austin News – [Evolution Imposes "Speed Limit" on Recovery after Mass Extinctions](#)

## **2018**

University of Texas at Austin News - [UT Austin Research in the News: Top Stories from 2018](#)

BBC Science In Action Podcast – [The Dunes of Pluto](#)

Discover Magazine – [Life Recovered Mere Years After Asteroid Impact](#)

Eos – [After Obliteration, How Long Until Life Returned?](#)

PNAS Front Matter – [Life after the asteroid apocalypse](#)

Cosmos – [Life returned to asteroid crater "within years"](#)

Ars Technica - [Life returned to crater of Cretaceous asteroid in the blink of an eye](#)

The Atlantic – [A Foreboding Similarity in Today's Oceans and a 94-Million-Year-Old Catastrophe](#)

## **2017**

PBS NOVA – [The Day the Dinosaurs Died](#)

BBC Two Documentary – [The Day the Dinosaurs Died](#)

Texas Standard (NPR) – [When The Asteroid Hit, Dinosaurs Went Extinct – But Other Life Bounced Back Relatively Quickly](#)

Air and Space Mag – [After the Asteroid Impact](#)

## **2016**

Discover Magazine – [Drilling the Chicxulub Crater of Doom](#)

Daily Mail – [Fossils reveal life on Earth bounced back 'very quickly' after the dinosaur-killing asteroid hit 66 million years ago](#)

Alcalde – [The Big One](#)