

ADAM D. SKARKE

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EDUCATION:

Ph.D. Geology, University of Delaware, Newark, DE, 2013
M.S. Geology, University of Delaware, Newark, DE, 2008
B.A. Geology (with Honors), Colgate University, Hamilton, NY, 2003

PROFESSIONAL APPOINTMENTS:

2020-present: Associate Professor of Geology, Department of Geosciences,
Mississippi State University, Mississippi State, MS
2014-2020: Assistant Professor of Geology, Department of Geosciences,
Mississippi State University, Mississippi State, MS
2013: Postdoctoral Associate, Geosystems Research Institute,
Mississippi State University, Mississippi State, MS
2011-2013: Physical Scientist, Office of Ocean Exploration and Research,
National Oceanic and Atmospheric Administration, Durham, NH

PROFESSIONAL REGISTRATION:

Registered Professional Geologist (Mississippi Registration #1020)

AWARDS AND HONORS:

2018: Faculty Research Award: Mississippi State University College of
Arts and Sciences
2018: Research Award in Natural and Physical Sciences: Mississippi State
University College of Arts and Sciences
2016-2018: Early Career Research Fellowship: The National Academies of
Sciences, Engineering, and Medicine, Gulf Research Program
2016: Named Co-Chief Scientist for NSF/UNOLS Early Career Deep
Submergence Training Cruise AT-36
2015: Researcher of the Month: Mississippi State University College of
Arts & Sciences (November/December)
2013: Bravo Zulu Award: NOAA Office of Ocean Exploration and
Research
2009: Outstanding Teaching Assistant Award: University of Delaware
Department of Geology
2008: Frances Severence Academic Council Award for Best Thesis in
Geology: University of Delaware

TEACHING:

Mississippi State University

Applied Geophysics, Enrollment: 8-19

Coastal Environments, Enrollment: 36-53

Geoscience Seminar and Geologic Literature, Enrollment: 7-20

Introduction to Oceanography, Enrollment: 30-57

Principles of Sedimentary Deposits I (Sedimentology), Enrollment: 7-28

Principles of Sedimentary Deposits II (Stratigraphy), Enrollment: 6-23

Special Topic: Marine Geology, Enrollment: 9

Special Topic: Sequence Stratigraphy, Enrollment: 5-6

Summer Geology Field Camp, Enrollment: 12

University of Delaware

Geological Hazards, Enrollment: 125-147

FUNDED PROJECTS:

Total Extramural Funding as PI or Co-PI: \$5,084,606 [Portion to Skarke: \$1,769,056]

PI: National Science Foundation Grant No [2342978] Collaborative Research: Drivers and Dynamics of Methane Seepage Along the US Atlantic Margin, \$419,190, September 2024 – August 2027. Portion of funding to Skarke: **\$419,190.**

Co-PI: North Carolina Department of Transportation Grant No [RP2024-32] Demonstrating the Capabilities of UAS Topobathymetric LiDAR Mapping in Support of DOT Project Planning, Monitoring and Modeling, **\$208,803**, October 2023-September 2024. Portion of funding to Skarke: **\$16,497.**

PI: US Department of Treasury Grant No [8006490-02.01] MBACE 3 Core Research Program. Mississippi Based RESTORE Act Center of Excellence (MBACE), **\$597,107**, July 2023-November 2027. Portion of funding to Skarke: **\$205,416.**

PI: National Oceanic and Atmospheric Administration (NOAA) Grant No. [NA22OAR0110193] Machine Learning Based Automated Detection of Seafloor Gas Seeps, **\$258,314**, July 2022-June 2024. Portion of funding to Skarke: **\$138,688**

PI: US Department of Treasury Grant No [8006490-02.01] MBACE 2 Core Research Program: Approaches for understanding water quality and oyster habitat suitability in the Mississippi Sound, Mississippi Based RESTORE Act Center of Excellence (MBACE), **\$403,178**, February 2020-February 2023. Note: assumed PI responsibilities after the original PI departed Mississippi State University.

PI: US Department of Treasury Grant No [8006490-05.01] The distribution of submarine groundwater discharge and its effect on coastal water quality in

Mississippi, Mississippi Based RESTORE Act Center of Excellence (MBRACE), **\$465,051**, February 2020-February 2023. Portion of funding to Skarke: **\$130,228**.

PI: National Oceanic and Atmospheric Administration (NOAA) Grant No. [NA16OAR4320199] Geospatial analysis of deep-sea environments using ROV video data with the Coastal Marine Ecological Classification Standard (CMECS) \$19,190, September 2019 – August 2021. Portion of funding to Skarke: **\$19,190**.

PI: United States Department of Agriculture (USDA) Grant No. [58-6001-8-001] Wave Erosion of Cohesive Embankments and Field Testing of Experimental Floating Wave Barriers \$96,899, August 2018 – July 2021. Portion of funding to Skarke: **\$96,899**.

PI: University Corporation for Atmospheric Research (UCAR) Grant No. [SUBAWD000586] NOAA Ship *Okeanos Explorer* Expedition EX1803. \$13,752, March 2018 – September 2018. Portion of funding to Skarke: **\$13,752**.

Co-PI: The National Academies of Sciences, Engineering, and Medicine Grant No [NAS 2000008944] The Efficacy of Marsh Terraces in Enhancing and Restoring Gulf Coastal Wetlands, **\$852,386**, January 2018-December 2020. Portion of funding to Skarke: **\$170,477**.

Co-PI: US Department of Treasury (via University of Southern Mississippi) Grant No [USM-GR05698-002] Water Quality and Benthic Habitat Observations for Enhanced Understanding and Sustainable Management of Oyster Reefs in Mississippi Sound, Mississippi Based RESTORE Act Center of Excellence (MBRACE), **\$624,953**, June 2017-December 2019. Portion of funding to Skarke: **\$206,235**.

PI: The National Academies of Sciences, Engineering, and Medicine Grant No [NAS 2000007272] The National Academies of Sciences, Engineering, and Medicine, Gulf Research Program, Early Career Research Fellowship, \$76,000, September 2016-December 2018. Portion of funding to Skarke: **\$76,000**.

PI: An Interactive Augmented Reality Sandbox for Three-Dimensional Visualization of Earth Surface Processes and Development of Spatial Reasoning Skills, Mississippi State University Schillig Special Teaching Project, \$2,715 (Internal), May, 2016-May 2017.

Co-PI: National Oceanic and Atmospheric Administration (NOAA) Grant No. [NA11OAR4320199] Telepresence, Information Management, and Data Product Development Stennis Exploration Command Center, **\$164,147**, August 2014-May 2017. Portion of funding to Skarke: **\$82,074**.

Co-PI: Bringing the “Field” into Earth Science Classrooms: Geological Specimens, Samples, Models, and Manuals to Facilitate Inquiry Investigations and Active

Learning, Mississippi State University Schillig Special Teaching Project, \$2,999 (Internal), May, 2015-May 2016.

Co-PI: National Oceanic and Atmospheric Administration (NOAA) Grant No. [NA14OAR4830128] Comparative Impacts of Emerging Hurricane Observing Technologies using Wave Glider and EMILY Unmanned Surface Vehicles, **\$885,636**, July 2014-July 2016. Portion of funding to Skarke: **\$221,409**.

PEER-REVIEWED PUBLICATIONS:

* denotes authorship by advised student

Ruppel, C. D., **Skarke**, A. D., Miller, N. C., Kidiwela*, M. W., Kluesner, J., and Baldwin, W. (2024). Methane seeps on the U.S. Atlantic margin: An updated inventory and interpretative framework. *Marine Geology* 471, 107287.

doi:10.1016/j.margeo.2024.107287

Osorio, R. J., Linhoss, A., **Skarke**, A., Brasher, M. G., and McFarland, M. (2023). Assessment of marsh terrace designs for wave attenuation utilizing a wave model. *Dynamics of Atmospheres and Oceans* 105, 101429.

doi:10.1016/j.dynatmoce.2023.101429.

Rodolfich, A., E. Sparks, B. Posadas, J. Rodgers, A. **Skarke**, R. Bradley, and C. Wessel (2023), The distribution and direct impacts of marine debris on the commercial shrimping industry, *Mar. Pollut. Bull.*, 186, 114417,

doi:10.1016/j.marpolbul.2022.114417.

Lee*, T. R., B. J. Phrampus, A. **Skarke**, and W. T. Wood (2022), Global Estimates of Biogenic Methane Production in Marine Sediments Using Machine Learning and Deterministic Modeling. *Global Biogeochemical Cycles*, 1–18,

doi:10.1029/2021GB007248.

Osorio, R. J., A. Linhoss, A. **Skarke**, M. G. Brasher, and J. French* (2022), Modeling wave climates and wave energy attenuation in marsh terrace environments in the northern Gulf of Mexico, *Ecological Engineering* 176, 106529,

doi:10.1016/j.ecoleng.2021.106529.

Mullins, L. L., J. M. Drymon, M. Moore, A. **Skarke**, A. Moore, and J. C. Rodgers (2021), Defining distribution and habitat use of west-central Florida's coastal sharks through a research and education program, *Ecology and Evolution.*, 11(22), 16055–16069, **doi:10.1002/ece3.8277.**

Lee*, T. R., Phrampus, B. J., Obelcz, J., Wood, W. T., & **Skarke**, A. (2020). Global marine isochore estimates using machine learning. *Geophysical Research Letters*, 47, e2020GL088726. **doi: 10.1029/2020GL088726**

Gabitov, R., C. Borrelli, J. Buettner, B. Kirkland, A. **Skarke**, D. Trail, B. Garner, M. Testa, M. Wahidi, C. Hoff, S. Khasanov, G. Panieri, R. Thirumalai, J. Thomas, J. Weremeichik, and I. Zverkova (2019), Characterization of Carbonate Crust from a Recently Discovered Methane Seep on the North Atlantic Continental Margin of the USA, *Minerals*, 9(138), 1–15, **doi:10.3390/min9030138**.

McVeigh, D., A. **Skarke**, A. E. Dekas, C. Borrelli, W.-L. Hong, J. Marlow, A. Pasulka, S. P. Jungbluth, R. A. Barco, and A. Djurhuus (2018), Characterization of Benthic Biogeochemistry and Ecology at Three Methane Seep Sites on the Northern U.S. Atlantic Margin, *Deep Sea Res. Part II Top. Stud. Oceanogr.*, (150), 1–16, **doi:10.1016/j.dsr2.2018.03.001**.

Marlow, J., C. Borrelli, S. P. Jungbluth, C. Hoffman, J. Marlow, P. R. Girguis, A. Dekas, A. **Skarke**, M. D. Blackman, D. Fornari, A. Soule, C. Van Dover, L. Bagge, R. Barco, B. Boulahanais, K. Bowman, M. Brugler, S. Bush, A. Djurhuus, J. Fernandez, R. Fulweiler, J. Kinsey, K. Kocot, D. McVeigh, M. Navarro, A. Netburn, A. Pasulka, K. Twing, A. Wagner, and J. Zambon (2017), Telepresence is a potentially transformative tool for field science, *Proceedings of the National Academy of Sciences of the United States of America*, 114(19), 4841–4844, **doi:10.1073/pnas.1703514114**.

Fitzpatrick, P. J., Y. Lau, R. Moorhead, A. **Skarke**, D. Merritt, K. Kreider, J. Masters, R. Carlon, G. Hine, T. Lampoudi, and A. Leonardi (2016), Further analysis of the 2014 Gulf of Mexico Wave Glider® field program. *Marine Technology Society Journal*, 50(3), 72-75. **doi:10.4031/mts.50.3.3**

DuVal, C., A. Trembanis, and A. **Skarke** (2016), Characterizing and hindcasting ripple bedform dynamics: Field test of non-equilibrium models utilizing a fingerprint algorithm. *Continental Shelf Research*, 116, 103-115. **doi:10.1016/j.csr.2015.12.015**

Quattrini, A.M., M.S Nizinski, J.D Chaytor, A.W.J. Demopoulos, E.B. Roark, S.C. France, J.A. Moore, T. Heyl, P.J. Auster, B. Kinlan, C. Ruppel, K.P. Elliott, B.R.C. Kennedy, E. Lobecker, A. **Skarke**, and T.M. Shank (2015), Exploration of the Canyon-Incised Continental Margin of the Northeastern United States Reveals Dynamic Habitats and Diverse Communities. *PLoS ONE* 10(10): e0139904. **doi:10.1371/journal.pone.0139904**

Fitzpatrick, P. J., Y. Lau, D. Merritt, R. Moorhead, A. **Skarke**, K. Kreider, C. Brown, R. Carlon, G. Hine, T. Lampoudi, and A. Leonardi (2015), A review of the 2014 Gulf of Mexico Wave Glider® field program. *Marine Technology Society Journal*, 49, 64-71. **doi: 10.4031/mts.49.3.14**

Skarke, A., C. Ruppel, M. Kodis*, D. Brothers, and E. Lobecker (2014), Widespread methane leakage from the sea floor on the northern US Atlantic margin, *Nature Geoscience*, 7(9), 657-661. **doi:10.1038/ngeo2232**

Brothers, L., C. Van Dover, C. German, C. Kaiser, D. Yoerger, C. Ruppel, E. Lobecker, A. **Skarke**, and J. Wagner (2013), Evidence for extensive methane venting on the southeastern US Atlantic margin, *Geology*, 41(7), 807-810. **doi: 10.1130/G34217.1**

Skarke, A., and A. C. Trembanis (2011), Parameterization of bedform morphology and defect density with fingerprint analysis techniques, *Continental Shelf Research*, 31(16), 1688-1700. **doi: 10.1016/j.csr.2011.07.009**

Trembanis, A., S. Nebel, A. **Skarke**, D. Coleman, R. Ballard, A. Yankovsky, I. Buynovich, and S. Voronov (2011), Bedforms, coastal-trapped waves, and scour process observations from the continental shelf of the northern Black Sea, *Geological Society of America Special Papers*, 473, 165-178. **doi:10.1130/2011.2473(10)**

NON-REFEREED PUBLICATIONS:

* denotes authorship by advised student

Hicks, B., C.O. Ayna, A.C. Gurbuz, V. Senyurek, A. **Skarke**, and S. Gupta* (2023), Machine learning based automated detection of seafloor gas seeps. *Proceedings of MTS/IEEE Oceans 2023*, Biloxi, Mississippi, USA, Sept 25-28.

France, S.C., D. Amon, C. Messing, A. **Skarke**, D. Wagner, M.P. White, B.R.C. Kennedy, and N. Pawlenko (2019), Deep-Sea Exploration of the US Gulf of Mexico with NOAA Ship *Okeanos Explorer*, in : Raineault, N.A, and J. Flanders (Eds.) *New frontiers in ocean exploration: The E/V Nautilus, NOAA Ship Okeanos Explorer, and R/V Falkor 2018 field season. Oceanography*, 32(1): **doi:10.5670/oceanog.2019.supplement.01.**

Dekas, A. E., and A. **Skarke** (2017), Early-career scientists explore newly discovered methane seeps, *Eos*, 98, **doi: c10.1029/2017EO068011.** Published on 10 March 2017.

Dekas, A. E., and A. **Skarke** (2016), *AT36 Cruise Report*. Woods Hole Oceanographic Institution, Woods Hole, MA, USA.

Crawford, A., and A. **Skarke** (2014), Automatic detection of sand ripple features in sidescan sonar imagery. *Proceedings of MTS/IEEE Oceans 2014*, Saint Johns, Newfoundland, Canada, Sept 14-19. **doi:10.1109/oceans.2014.7003117**

Skarke, A. (2013), Coastal Morphodynamics of the Estuary-Shelf Interface. Doctoral Dissertation: University of Delaware, Newark, DE, USA.

Russell, C.W., W. Pinner, D. Lovalvo, A. **Skarke**, E. Lobecker, M. Malik, and LT M. Nadeau (2012), Technology: NOAA Ship Okeanos Explorer, in : Bell, K.L.C., K. Elliott, C. Martinez, and S.A. Fuller (Eds.) *New Frontiers in Ocean Exploration: The E/V Nautilus and NOAA Ship Okeanos Explorer 2011 Field Season. Oceanography*, 25(1): 12-14 **doi:10.5670/oceanog.2011.supplement.01**.

Kraatz, L.M., A. **Skarke**, A.C. Trembanis, and C.T. Friedrichs (2011), Approaches for quantifying seabed morphology – techniques for utilizing rotary sonar systems. *Proceedings of the International Conference on Coastal Sediments 2011*. **doi:10.1142/9789814355537_0080**

Schmidt, V., N. Raineault, A. **Skarke**, A. Trembanis, and L. Mayer (2010), Correction of Bathymetric Survey Artifacts Resulting Apparent Wave-Induced Vertical Position of an AUV, *Report for University of New Hampshire (UNH), Center for Coastal and Ocean Mapping (CCOM)/Joint Hydrographic Center (JHC), Durham, NH, 13p*.

Skarke, A., B.L. Lipphardt Jr., P. Muscarella, K.C. Wong, A. Trembanis, and M. Badiy (2008), Comparison of HF radar and ADCP surface currents at the Delaware Bay mouth. *Proceedings of the IEEE/OES/CMTC Ninth Working Conference on Current Measurement Technology*. **doi: 10.1109/CCM.2008.4480866**

Skarke, A. (2008), Applications of Chirp Sonar Acoustic Reflection Coefficients for Seafloor Sediment Characterization. Master's Thesis: University of Delaware, Newark, DE, USA.

Loper, C. E., M. C. Balgos, J. Brown, B. Cicin-Sain, P. Edwards, C. Jarvis, J. Lilley, I. Torres de Noronha, A. **Skarke**, and J. F. Tavares (2005), Small Islands, Large Ocean States: A Review Of Ocean And Coastal Management In Small Island Developing States Since The 1994 Barbados Programme Of Action For The Sustainable Development Of Small Island Developing States (SIDS). *Toward Mauritius 2005 Paper Series No. 2005-1*. Global Forum on Oceans Coasts and Islands: University of Delaware, Newark, USA.

INVITED PRESENTATIONS:

Skarke, A. (2018), Collaboration to Compile Open-Source Sites of Seafloor Fluid Expulsion Anomalies. Town Hall Session TH53B at 2018 Fall Meeting, American Geophysical Union, Washington, DC., 14 December.

Skarke, A. (2018), The Discovery of Widespread Seafloor Methane Discharge on the US Atlantic Margin and Characterization of Associated Deep Sea Gas Seep Environments. Invited departmental seminar for the University of South Carolina School of the Earth, Ocean, and Environment. Columbia, SC. 25 October.

Skarke, A. (2018), An Expanded Inventory of Seafloor Gas Seeps on the US Atlantic Margin with Implications for Seep Ephemerality. The United States Naval Research

Laboratory. Stennis Space Center, MS. 15 August.

Skarke, A. (2018), Development and Evaluation of the EMILY Unmanned Surface Vehicle. Unmanned Maritime Systems Program. The University of Southern Mississippi. Stennis Space Center, MS. 9 April.

Skarke, A. (2017), Discovery of Widespread Seafloor Methane Discharge on the US Atlantic Margin and Characterization of Deep Sea Gas Seep Environments. Invited departmental seminar for the Department of Geology & Geological Engineering at The University of Mississippi. Oxford, MS. 6 November.

Skarke, A. (2017), Geological Fieldwork at the Bottom of the Ocean: Deep Sea Exploration on the Submersible Alvin. Invited departmental seminar for the Department of Geosciences at Georgia State University. Atlanta, GA. 13 April.

Skarke, A. (2015), Widespread Seafloor Methane Discharge on the US Atlantic Margin: Implications for Benthic Ecology and Carbon Cycling. Invited departmental seminar for the Department of Marine, Earth, and Atmospheric Sciences at North Carolina State University. Raleigh, NC. 9 November.

Skarke, A. (2014), From Dunes to the Deep Sea: Field Observations Across the Continental Margin. NOAA National Data Buoy Center, Stennis Space Center, MS. 24 January

Skarke, A. and Lobecker, E. (2012), NOAA's *Okeanos Explorer* Program: Three years of telepresence enabled ocean exploration. University of New Hampshire Center for Coastal and Ocean Mapping. Durham, NH. 3 February.

Skarke, A. (2010), From ripples to hummocks: Observations of non-equilibrium bedform evolution under combined flow conditions. College of William and Mary, Virginia Institute of Marine Science, Department of Physical Sciences. Gloucester Point, VA. 4 November.

Skarke, A. (2008), Wave measurement and bedform evolution on a barrier shoreface and cape-associated shoal. NortekUSA Technical Symposium. Vicksburg, MS. 15 May.

Skarke, A. (2006), Application of chirp sonar acoustic reflection coefficient for seafloor sediment classification: Results from the Delaware Estuary. University of Delaware, Center for Applied Coastal Research, Ocean Engineering Seminar Series, Newark, DE. 26 September.

CONFERENCE PRESENTATIONS (Last 5 Years)

* denotes authorship by advised student

Gupta*, S. and A. **Skarke** (2024) Computational Ecology for Seafloor Habitat Mapping: Insights from Backscatter and Bathymetric Data Analysis. Presented at the 2024 Benthic Ecology Meeting. April 10 - 14, 2024.

Skarke, A., A.C. Gurbuz, V. Senyurek, B. Hicks, C.O. Anya, G.E. Hernandez*, and S. Gupta* (2023) Machine Learning Based Automated Detection of Seafloor Gas Seeps. Abstract OS21C-1429 presented at 2023 Fall Meeting, American Geophysical Union, 11-15 Dec.

Hicks, B., C. Ayna, A. Gurbuz, V. Senyurek, A. **Skarke**, S. Gupta* (2023) Machine Learning Based Automated Detection of Seafloor Gas Seeps. Presented at OCEANS 2023 Gulf Coast, September 26, 2023.

Skarke, A., A. Shiller, N. Dimova, A. Moody, Z. Peoples*(2023), Impact of Submarine Groundwater Discharge on Water Quality in Mississippi Sound. Presented at the 2023 State of The Coast Conference, May 31, 2023.

Gupta*, S. and A. **Skarke** (2023), Identification of seafloor gas seeps in sonar data to develop a machine learning detection database. Presented at the 2023 GeoSym Conference, February 9-10, 2023.

Alden*, M., A. **Skarke**, and J. Freeman*(2022), High-Resolution Mapping of Deep-Sea Benthic Environments Through Orthorectification of Oblique ROV Video Data. Abstract OS22D-0947 presented at 2022 Fall Meeting, American Geophysical Union, 13-17 Dec.

Hernandez*, G., and A. **Skarke** (2022), Spatial Association Between Methane Seeps and Geomorphology on the Northern US Atlantic Margin. Abstract OS42B-1199 presented at 2022 Fall Meeting, American Geophysical Union, 13-17 Dec.

Skarke, A., G. Hernandez*, and S. Gupta* (2022), Updated Inventory of Methane Seeps on the U.S. Atlantic Margin. Abstract OS42B-1200 presented at 2022 Fall Meeting, American Geophysical Union, 13-17 Dec.

Bassett et al. (2022), NOAA's southeast deep coral initiative, results and accomplishments 2016-2019. Presented at 2022 Ocean Sciences Meeting, Online., 24 Feb-4 Mar.

Hernandez*, G., and A. **Skarke** (2022), Evaluating the relationship between methane seeps and surrounding geomorphology on the northern US Atlantic margin. Presented at 2022 Ocean Sciences Meeting, Online., 24 Feb-4 Mar.

Peoples*, Z., and A. **Skarke** (2022), Characterization of Quaternary stratigraphy in the Mississippi Sound to evaluate the influence of geologic heterogeneity on

submarine groundwater transport and discharge. Presented at 2022 Ocean Sciences Meeting, Online., 24 Feb-4 Mar.

Freeman*, J., and A. **Skarke** (2022), Automated mapping of deep sea ROV video data. Presented at 2022 Ocean Sciences Meeting, Online., 24 Feb-4 Mar.

Lee*, T.R., W. Wood, B. Phrampus, and A. **Skarke** (2021), Global carbon and methane hydrate inventories in marine sediments using machine learning constraints. Abstract OS22A-02 presented at 2021 Fall Meeting, American Geophysical Union, 13-17 Dec.

Skarke, A., and G. E. Hernandez* (2021), Spatial Association of Methane Seeps and Seafloor Geomorphic Classification on the Northern US Atlantic Margin. OS25B-1016 presented at 2021 Fall Meeting, American Geophysical Union, 13-17 Dec.

French*, J.E., A. **Skarke**, A. Linhoss, M. Brasher, and R. Osorio (2020), The optimization of marsh terracing as a wetland restoration technique: Mitigating cohesive sediment erosion from wind driven waves. Abstract B052-0013 presented at 2020 Fall Meeting, American Geophysical Union, 1-17 Dec.

Lee*, T.R., B. Phrampus, W. Wood, and A. **Skarke** (2020), A new estimate of carbon sequestered within the global methane hydrate stability zone using machine-learning predicted inputs. Abstract OS029-0004 presented at 2020 Fall Meeting, American Geophysical Union, 1-17 Dec.

Luciano, A., T.R. Lee*, B. Phrampus, J. Obelcz, W. Wood, A. **Skarke** (2020), An updated global prediction of marine unit thicknesses for present to middle Miocene sediments using Ocean Drilling Program data. Abstract EP060-0001 presented at 2020 Fall Meeting, American Geophysical Union, 1-17 Dec.

Skarke, A., and G. E. Hernandez* (2020), Spatial Relationship Between Methane Seeps and Geomorphological Properties of the Seafloor on the US Atlantic Margin. OS016-0009 presented at 2020 Fall Meeting, American Geophysical Union, 1-17 Dec.

Osorio, R., A. Linhoss, A. **Skarke**, M. Brasher, and J. French* (2020), Assessment of wave regimes for optimal implementation of marsh terracing in the northern Gulf of Mexico, a modeling approach. Abstract BBS20414 presented at 2020 Bays and Bayous Symposium, 1-3 Dec.

French*, J. E., A. **Skarke**, and M. Brasher (2020), Effect of tropical storm and frontal passage on marsh erosion in terraced coastal wetlands. Abstract CP24D-1166 presented at 2020 Ocean Sciences Meeting, San Diego, CA., 16-21 Feb.

Skarke, A. and M. W. Kidiwela* (2020), Discovery and characterization of two methane seep fields with unique fluid discharge features on the US Atlantic continental margin. Abstract IS24C-3317 presented at 2020 Ocean Sciences Meeting, San Diego, CA., 16-21 Feb.

Skarke, A. and D. Adcock* (2019), Geologic Control of Submarine Groundwater Discharge in the Mississippi Sound. Abstract H53I-1886 presented at 2019 Fall Meeting, American Geophysical Union, San Francisco, Calif., 9-13 Dec.

Lee*, T. R., W. Wood, A. Skarke, B. Phrampus, J. Obelcz (2019) Global machine learning predictions of sediment unit thickness for present to middle Miocene using Deep Sea Drilling Project data. Abstract PP11D-1414 presented at 2019 Fall Meeting, American Geophysical Union, San Francisco, Calif., 9-13 Dec.

Skarke, A., M. Brasher, B. Davis, A. Linhoss, R. Moorhead, M. Woodrey, M. Armandei, J. French*, M. McFarland, R. Osorio, F. Vizcarra (2019), Optimizing Marsh Terrace Design for Wetland Restoration and Avian Habitat Associations. 25th Biennial Coastal and Estuarine Research Federation Conference, Mobile, AL, November 3-7.

French*, J., A. **Skarke**, R. Osorio, A. Linhoss, M. Brasher (2019), Assessing the Efficacy of Marsh Terracing for Coastal Wetland Restoration in Louisiana. 25th Biennial Coastal and Estuarine Research Federation Conference, Mobile, AL, November 3-7.

McFarland, M., M. Armandei, M. Brasher, B. Davis, J. French*, A. Linhoss, R. Moorhead, R. Morillo, A. **Skarke**, F. Vizcarra, M. Woodrey (2019) The Efficacy of Marsh Terraces for Enhancing and Restoring Gulf Coastal Wetlands. Southeastern Association of Fish and Wildlife Agencies Conference, Hilton Head, SC. October 27-30.

Etnoyer, P., R. Bassett, C. Ruby, A. **Skarke**, M. Malik (2019), Leveraging telepresence and GIS technology to create rapid substrate distribution maps from ROV video and support studies of deep-sea corals. Abstract ISDSC7_035 presented at the 7th International Symposium on Deep Sea Corals, Cartagena, Columbia, 29 Jul.-2 Aug.

Lee*, T.R., W.T. Wood, B.J. Phrampus, J. Obelcz, and A. **Skarke** (2019), Predicting Sediment Property Vertical Profiles on the Mid-Atlantic Ridge Using Machine Learning. Abstract EGU2019-10400 presented at the 2019 General Assembly of the European Geophysical Union, Vienna, Austria, 7-12 Apr.

Flickinger, D., J.C. Rodgers, P. Dash, and A. **Skarke** (2019), Analysis of suspended particulate matter concentrations in Weeks Bay, Alabama using Landsat imagery. Presented at the 2019 American Association of Geographers Annual Meeting, Washington, DC, 3-7 Apr.

Adcock*, D., and A. Skarke (2019), Characterizing the Pleistocene Paleodrainage Network of the Western Mississippi Sound. Presented at 2019 Meeting of the Mississippi Academy of Science, Hattiesburg, MS, 20-22 Feb.

Skarke, A. and D. Adcock* (2019), Geologic Control of Submarine Groundwater Discharge Proximal to Oyster Reefs in Mississippi Sound. Presented at 2019 Meeting of the Mississippi Academy of Science, Hattiesburg, MS, 20-22 Feb.

PROFESSIONAL SERVICE:

Institutional

2023: Initiated development of interdisciplinary minor in Coastal and Ocean Systems at MSU

2021-2023: Evaluator for MSU GTA workshop teaching demonstrations.

2021-Present: Co-developed and initiated the Mississippi State University Science Education at Sea (MSU- SEAS) program, which introduces students in grades 6-12 to ocean-based STEM, through hands-on data collection experiences on a research vessel in the northern Gulf of Mexico.

2018-Present: Department of Geosciences Graduate Curriculum Task Force (*ad hoc* committee)

2018-Present: Department of Geosciences Geology Team Leader

2018-Present: Department of Geosciences Strategic Planning Committee (Chair)

2020 -2021: Northern Gulf Institute Meteorology Faculty Search Committee

2019-2020: Department of Geosciences Geology/Geography Instructor Search Committee (Chair)

2018-2019: Department of Geosciences Structural Geology Faculty Search Committee (Chair)

2018: Department of Geosciences Business Manager Search Committee

2016: Department of Geosciences Engineering Geology Faculty Search Committee

2015: MSU College of Arts and Sciences Associate Dean for Research and Graduate Studies Search Committee

2015-2018: Department of Geosciences Governance Committee

2014-2016: Department of Geosciences Representative to MSU College of Arts and Sciences Faculty Senate

2014-2018: Department of Geosciences Laboratory Committee

2014-2015: Judge for MSU Graduate Student Symposium

2015: Judge for MSU Undergraduate Student Symposium

External

Reviewer Journals:

- *AMS Journal of Atmospheric and Oceanic Technology*
- *Continental Shelf Research*

- *Deep Sea Research Part I*
- *Environmental Modelling & Software*
- *Frontiers in Earth Science*
- *Frontiers in Marine Science*
- *Geology*
- *Geophysical Research Letters*
- *Interpretation*
- *Journal of Coastal Research*
- *Journal of Geophysical Research – Oceans*
- *Journal of Geophysical Research – Solid Earth*
- *Journal of Marine Science and Engineering*
- *Marine and Petroleum Geology*
- *Nature Communications*
- *Nature Geosciences*

Reviewer Proposals:

- National Oceanic and Atmospheric Administration (NOAA)
 - Ocean Exploration Federal Funding Opportunity
 - Broad Agency Announcement
- National Science Foundation (NSF)
 - Division of Ocean Sciences (OCE)
 - Chemical Oceanography
 - Marine Geology & Geophysics
 - Postdoctoral Fellowship Program
 - Technology and Interdisciplinary Coordination Program
- International Ocean Discovery Program (IODP)
- Schmidt Ocean Institute (SOI)
- The National Academies of Sciences, Engineering, and Medicine, Gulf Research Program Early Career Research Fellowship

- 2003: Mississippi State University representative on the Executive Steering Committee for the Mississippi Based Restore Act Center of Excellence.
- 2023: Guest Expert: Deep Dives With Ocean Exploration Experts - NOAA Ocean Exploration Online Educator Professional Development
- 2023: Presented ocean science day for spring intersession at Starkville Oktibbeha School District Partnership Middle School
- 2022: Convener of theme session at Ocean Sciences Meeting
- 2020-2023: Convener of theme session at American Geophysical Union Fall Meeting
- 2020, 2022: Judge for Student Presentation Evaluation Program at Ocean Sciences Meeting
- 2019: Student Presentation Judge at CERF Meeting.

- 2019, 2023: Presented talk “Deep-Sea Exploration with Remotely Operated Vehicles” to middle and high school students competing in the MATE ROV competition at Dauphin Island Sea Lab, University of Southern Alabama.
- 2017-Present: Treasurer of the Southeast Section of the National Association of Geoscience Teachers
- 2017, 2018: Presented lecture “Deep-Sea Exploration with Remotely Operated Vehicles and Autonomous Underwater Vehicles” to secondary school teachers in the Technology in Marine Science Workshop at Dauphin Island Sea Lab, University of Southern Alabama.
- 2017-2023: Judge for Outstanding Student Paper Award at American Geophysical Union Fall Meeting
- 2014-2017: State representative (MS) to the Southeast Section of the National Association of Geoscience Teachers.
- 2013: Research Mentor for NOAA Hollings Scholar Program
- 2012: Reviewer for NOAA Hollings Scholar Program
- 2010: Convener of theme session at NE/SE regional meeting of the Geological Society of America

FIELD EXPERIENCE:

| | | |
|------|------------------------|------------------------------------------------------------|
| 2018 | Co-Science Lead | NOAA Ship <i>Okeanos Explorer</i> |
| 2016 | Co-Chief Scientist | R/V <i>Atlantis</i> / HOV <i>Alvin</i> / AUV <i>Sentry</i> |
| 2015 | Participant | R/V <i>Atlantis</i> / HOV <i>Alvin</i> / AUV <i>Sentry</i> |
| 2013 | Lead NOAA Scientist | NOAA Ship <i>Okeanos Explorer</i> |
| 2013 | Lead NOAA Scientist | NOAA Ship <i>Okeanos Explorer</i> |
| 2012 | Lead NOAA Scientist | NOAA Ship <i>Okeanos Explorer</i> |
| 2012 | Lead NOAA Scientist | NOAA Ship <i>Okeanos Explorer</i> |
| 2012 | Lead NOAA Scientist | NOAA Ship <i>Okeanos Explorer</i> |
| 2012 | Lead NOAA Scientist | NOAA Ship <i>Okeanos Explorer</i> |
| 2012 | Lead NOAA Scientist | NOAA Ship <i>Okeanos Explorer</i> |
| 2011 | NOAA Scientist | NOAA Ship <i>Okeanos Explorer</i> |
| 2010 | Participant / ROV Nav. | E/V <i>Nautilus</i> |
| 2010 | Participant | R/V <i>Waiho</i> |
| 2010 | Participant | R/V <i>Hugh R. Sharp</i> |
| 2010 | Participant | R/V <i>Hugh R. Sharp</i> |
| 2009 | Participant | R/V <i>Tioga</i> |
| 2009 | Participant | R/V <i>Bay Commitment</i> |
| 2007 | Acting Chief Scientist | R/V <i>Hugh R. Sharp</i> |
| 2007 | Participant | R/V <i>Hugh R. Sharp</i> |
| 2007 | Participant | R/V <i>Alliance</i> |
| 2006 | Participant | R/V <i>Hugh R. Sharp</i> |
| 2005 | Participant | R/V <i>Cape Henlopen</i> |
| 2004 | Participant | R/V <i>Cape Henlopen</i> |
| 2003 | Participant | R/V <i>Cape Henlopen</i> |

PROFESSIONAL AFFILIATIONS:

Geological Society of America (2002)
 American Geophysical Union (2004)
 National Association of Geoscience Teachers (2014)
 American Association for the Advancement of Science (2016)

RESEARCH PRESS COVERAGE:

BBC News, CBS News, Earth Magazine, National Geographic, National Public Radio, Nature News, NBC News, New York Times, PBS-NOVA, The Weather Channel, Scientific American, Smithsonian Magazine, Washington Post

STUDENTS MENTORED:

| Student | Affiliation | Current Position |
|-------------------------|--------------------|-----------------------------------------------------------------------------------|
| Graduate Advisor | | |
| Danielle Merritt | MSU M.S. (2016) | Staff Geologist: Athena Engineering and Environmental |
| Asa Mullenex | MSU M.S. (2016) | Geologist: Diversified Well Logging, LLC |
| Caitlin Ruby | MSU M.S. (2017) | Scientific Program Manager: NOAA Centers for Environmental Information |
| Brendan Lomago | MSU M.S. (2018) | Senior Staff Geologist: Seismic Surveys Inc |
| Daniel Adcock | MSU M.S. (2019) | Interdisciplinary Physical Scientist/Oceanographer: US Naval Oceanographic Office |
| Joseph French | MSU M.S. (2020) | Regulatory Project Manager: US Army Corps of Engineers |
| Taylor Lee | MSU Ph.D. (2021) | Geophysicist: U.S. Naval Research Laboratory |
| Jake Freeman | MSU M.S. (2022) | Physical Scientist: US Naval Oceanographic Office |
| Zachary Peoples | MSU M.S. (2022) | Surveyor (Marine): Fugro |

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|----------------------------------------------------------|-------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| Gabriel Hernandez | MSU M.S. (2023) | Staff Geoscientist: Fugro Marine USA |
| Rebecca Gilpin <i>Co-Advised with J. Cebrian</i> | MSU M.S. (2023) | Researcher and Shellfish Aquaculture Manager: Rutgers University |
| Tia Offner <i>Co-Advised with J. Cebrian</i> | MSU M.S. (2023) | Fish and Wildlife Technician II: Texas Parks and Wildlife Department |
| Jonathan Leard | MSU M.S. (2022) MSU Ph.D. (2026) | <i>Current Student Co-Advised with D. Schmitz</i> and Geologist: Office of Geology, Mississippi Department of Environmental Quality |
| Jeneil Patel | MSU M.S. (2025) | <i>Current Student</i> and System-wide Monitoring Program Technician: Grand Bay National Estuarine Research Reserve |
| Ramon Richardson Undergraduate Research Mentor | MSU Ph.D. (2026) | <i>Current Student</i> |
| Mali'o Kodis | NOAA Hollings Scholar Brown University B.S. (2014) | Project Manager: Environmental Defense Fund |
| Maleen Kidiwela | MSU B.S. (2019) | Ph.D. Student in Marine Geophysics: University of Washington |
| Jake Freeman | MSU B.S. (2020) | Physical Scientist: US Naval Oceanographic Office |
| Gabriel Hernandez | MSU B.S. (2021) | Staff Geoscientist: Fugro Marine USA |
| Linah Turner-Chism | MSU B.S. (2022) | Geologist: PELA GeoEnvironmental Inc. |
| McKenna Alden | MSU B.S. (2023) | M.S. Student in Oceanography: Dalhousie University |

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|----------------|-----------------|-----------------------------------------------------------------------------------|
| Morgan Trotter | MSU B.S. (2024) | M.S. Student in Earth and Ocean Sciences: University of North Carolina Wilmington |
| Surabhi Gupta | MSU B.S. (2025) | <i>Current Student</i> |

Graduate Committee Service (Geology unless otherwise noted)

| | | |
|---------------------|------------------|----------------------------------------|
| Michael Brooke | MSU M.S. (2014) | |
| Seth Martin | MSU M.S. (2014) | |
| Courtney Killian | MSU M.S. (2015) | |
| Brandon Crabtree | MSU M.S. (2016) | |
| Jonney Mitchell | MSU M.S. (2016) | |
| Alexandra Novak | MSU M.S. (2016) | |
| Natalie Samai | MSU M.S. (2016) | |
| Jeremy Weremeichik | MSU Ph.D. (2016) | |
| Tyler Berry | MSU M.S. (2017) | |
| Devon Flickinger | MSU M.S. (2017) | (Geospatial Science) |
| Patrick Jordan | MSU M.S. (2017) | |
| Maurice Testa | MSU Ph.D. (2017) | |
| Claire Babineaux | MSU Ph.D. (2018) | |
| Catie Dillion | MSU M.S. (2018) | (Agricultural and Biological Eng.) |
| Marvin Kunath | MSU M.S. (2018) | |
| Christopher Kyler | MSU M.S. (2018) | |
| Wesley Burger | MSU M.S. (2020) | (Wildlife, Fisheries, and Aquaculture) |
| Scott Dykes | MSU Ph.D. (2021) | |
| Lindsay Mullins | MSU M.S. (2021) | (Geospatial Science) |
| Rayford Parnell | MSU M.S. (2021) | |
| Nigel Temple | MSU Ph.D. (2021) | (Wildlife, Fisheries, and Aquaculture) |
| Keith Tishler | MSU Ph.D. (2021) | |
| Alyssa Rodolfich | MSU M.S. (2021) | |
| Raul Osorio Morillo | MSU Ph.D. (2021) | (Agricultural and Biological Eng.) |
| Jonathan Leard | MSU M.S. (2022) | |
| Emma Tucker | MSU M.S. (2023) | |
| Johnathan Rich | MSU M.S. (2023) | |
| Timothy Palmer | MSU Ph.D. (2025) | |
| Ramin Baghbani | MSU Ph.D. (2024) | (Agricultural and Biological Eng.) |
| Ankita Katkar | MSU Ph.D. (2024) | |
| Christiana Eziashi | MSU Ph.D. (2025) | |
| Matthew Virden | MSU Ph.D. (2026) | (Wildlife, Fisheries, and Aquaculture) |
| Salman Bashit | MSU M.S. (2026) | |
