

# ADAM D. SKARKE

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Department of Geosciences  
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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:

2015-present: Research Fellow, Geosystems Research Institute, Mississippi State University, Mississippi State, MS.  
2014-present: 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.

## AWARDS AND HONORS:

2015: Mississippi State University Schillig Teaching Grant (Co-PI)  
2010-2011: University of Delaware Professional Development Award  
2010-2011: University of Delaware Dissertation Fellowship  
2009: Department of Geology Outstanding Teaching Assistant Award  
2008: Frances Severence Academic Council Award for Best Thesis in Geology  
2006: Nortek USA Student Equipment Grant  
2006: Department of Geology Outstanding Teaching Assistant Award  
2003-2005: University of Delaware Coastal and Marine Geosciences Fellowship

## TEACHING:

### Mississippi State University

Fall 2015: Introduction to Oceanography, Enrollment: 30  
Special Topic – Sequence Stratigraphy, Enrollment: 5  
Spring 2015: Principles of Sedimentary Deposits II, Enrollment: 20

Geoscience Seminar and Geologic Literature, Enrollment: 17  
Fall 2014: Principles of Sedimentary Deposits I, Enrollment: 28  
Spring 2014: Principles of Sedimentary Deposits II, Enrollment: 23

#### **University of Delaware**

Winter 2009: Geological Hazards, Enrollment: 147  
Winter 2008: Geological Hazards, Enrollment: 125

#### **PEER-REVIEWED PUBLICATIONS:**

Trembanis, A., DuVal, C., and A. **Skarke** (2015), Characterizing and Hindcasting Ripple Bedform Dynamics on the Inner Continental Shelf. *Continental Shelf Research*, In review.

Quattrini, A.M., Nizinski, M.S., Chaytor, J.D., Demopoulos, A.W.J., Roark, E.B., France, S.C., Moore, J.A., Heyl, T., Auster, P.J., Kinlan, B., Ruppel, C., Elliott, K.P., Kennedy, B.R.C., Lobecker, E., **Skarke**, A., 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*, In press.

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<sup>®</sup> field program. *Marine Technology Society Journal*, 49, 64-71.

**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. Buynevich, 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:**

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

Russell, C.W., Pinner, W., Lovalvo, D., **Skarke**, A., Lobecker, E., Malik, M., 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

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*.

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*.

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.

## PRESENTATIONS

### Invited

**Skarke**, A. (2014), From Dunes to the Deep Sea: Field Observations Across The Continetal Margin. NOAA National Data Buoy Center, 24 January.

**Skarke**, A. D. 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 Seminar Series, 3 February.

**Skarke**, A.D. (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, Physical Sciences Department Seminar, 4 November.

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

**Skarke, A.D.** (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, 26 September.

### **Conference**

Fitzpatrick, P., Y. Lau, J. Nicinska, R. Moorhead, A. **Skarke**, D. Merritt, K. Kreider, C. Brown, R. Carlon, G. Hine, T. Lampoudi, A. Leonardi (2015), A Review of the 2014 Gulf of Mexico Wave Glider Field Program. 69<sup>th</sup> Interdepartmental Hurricane Conference, 2-5 March, Jacksonville, FL, USA.

**Skarke, A., C. Ruppel, and D. Brothers** (2014), Physical Conditions Associated with Widespread Seafloor Methane Discharge on the Northern US Atlantic Margin, Abstract OS11C-02 presented at 2014 Fall Meeting, AGU, San Francisco, Calif., 15-19 Dec.

Ruppel, C., T. Weber, J. Kessler, J. Pohlman, and A. **Skarke** (2014), Methane Hydrate Dissociation and Gas Seepage on Global Upper Continental Slopes Driven by Intermediate Ocean Warming, Abstract OS11C-01 presented at 2014 Fall Meeting, AGU, San Francisco, Calif., 15-19 Dec.

Babineaux, C. E., B.L. Kirkland, and A.D. **Skarke** (2014), Incorporating Cullet into Beach Ecosystems: Analysis of Public Opinion, Transport, and Effects on Biota Health, AEG Meeting, 20-28 September, Scottsdale, AZ, USA.

Fitzpatrick, P., Y. Lau, J. Nicinska, R. Moorhead, A. Leonardi, A. **Skarke**, R. Chadwick, and R. Kincaid (2014), The Tropical Cyclone Experimental Program to Enable Unmanned Surface Systems (TEMPEST). International Conference on Mesoscale Meteorology and Tropical Cyclones, 15-18 September, Boulder, CO, USA.

Kodis, M., A. **Skarke**, C. Ruppel, T. Weber, E. Lobecker, and M. Malik (2013), US Atlantic Margin Methane Plumes Identified From Water Column Backscatter Data Acquired by NOAA Ship Okeanos Explorer, Abstract OS21A-1612 presented at 2013 Fall Meeting, AGU, San Francisco, Calif., 9-13 Dec.

Lobecker, E., M. Malik, and A. **Skarke** (2013), NOAA Ship Okeanos Explorer 2013 Field Season on the US Atlantic Continental Margin, Abstract OS33B-1762 presented at 2013 Fall Meeting, AGU, San Francisco, Calif., 9-13 Dec.

Malik, M., N. Valette-Silver, E. Lobecker, A. **Skarke**, K. Elliott, and J. McDonough (2013), To Explore or to Research: Trends in modern age ocean studies, Abstract OS33B-1763 presented at 2013 Fall Meeting, AGU, San Francisco, Calif., 9-13 Dec.

**Skarke**, A., C. Ruppel, M. Kodis, E. Lobecker, and M. Malik (2013), Geologic Significance of Newly Discovered Methane Seeps on the Northern US Atlantic Margin, Abstract OS21A-1613 presented at 2013 Fall Meeting, AGU, San Francisco, Calif., 9-13 Dec.

Brothers, L., C. Van Dover, C. German, D. Yoerger, C. Kaiser, M. Lobecker, A. **Skarke**, and C. Ruppel (2012), Evidence of Extensive Gas Venting at the Blake Ridge and Cape Fear Diapirs, Abstract OS41E-05 presented at 2012 Fall Meeting, AGU, San Francisco, Calif., 3-7 Dec.

Lobecker, E., M. Malik, A. **Skarke**, and N. VerPlanck (2012), Integration of NOAA Ship Okeanos Explorer Seafloor Mapping, Little Hercules ROV, and Sentry AUV Data into Ocean Exploration Operations and Public Data Holdings, Abstract OS51E-1925 presented at 2012 Fall Meeting, AGU, San Francisco, Calif., 3-7 Dec.

**Skarke**, A., E. Lobecker, M. Malik, and N. VerPlanck (2012), NOAA Ship Okeanos Explorer 2012 Field Season in the Northern Gulf of Mexico and US Atlantic Continental Margin, Abstract OS51D-1913 presented at 2012 Fall Meeting, AGU, San Francisco, Calif., 3-7 Dec.

Schmidt, V., T. Weber, L. Mayer, A. Trembanis, A. **Skarke**, and N. Raineault (2011), "Most Probable Angle Analysis:" Automated Processing of Phase-Measuring Bathymetric Sidescan Data. US Hydrographic Conference. 25-28 April, Tampa, FL, USA.

Cornelisen, C., P. Gillespie, V. Schmidt, A. **Skarke**, A. Forrest, A. Trembanis, R. Forrest, and W. Jiang (2010), Variability in the nephroid layer of Tasman Bay as revealed through use of an autonomous underwater vehicle and conventional instrumentation, New Zealand Marine Sciences Society Conference. 7-9 July, Wellington, NZ.

Schmidt, V., N. Raineault, A. **Skarke**, A. Trembanis, and L. Mayer (2010), Correction of bathymetric survey artifacts resulting from apparent wave-induced vertical position of an AUV. Canadian Hydrographic Conference. 21-13 June, Quebec City, Canada.

**Skarke**, A. and A. Trembanis (2010), A conceptual model of non-equilibrium bedform evolution under combined wave and tidal current forcing, *Geological Society of America Abstracts with Programs*, 42(1), 60.

**Skarke**, A. and A. Trembanis (2010), Parameterization of non-equilibrium seabed morphology in a hydrodynamically complex bay mouth environment; *Eos Transactions. American Geophysical Union*, 91(26), Ocean Sciences Meeting Supplement. Abstract PO14B-07.

Trembanis, A., A. **Skarke**, N. Raineault, V. Schmidt, and L. Mayer (2010), Detailed

variability of ripple geometry within a sorted bedform feature, *Geological Society of America Abstracts with Programs*, 42(1), 60.

**Skarke**, A., and A. Trembanis (2008) Micromorphodynamic evolution of bedforms on a transgressive barrier shoreface and cape-associated shoal; *Eos Transactions. American Geophysical Union*, Ocean Sciences Meeting Supplement. Abstract 165-1248.

Trembanis, A., A. **Skarke**, D. Coleman, R. Ballard, S. Fuller, I. Buynevich, and S. Voronov (2007), Bedforms, internal waves, and scour processes: morphodynamic behavior on the continental shelf of the northern Black Sea, *Geological Society of America Abstracts with Programs*, 39(6), 430.

**Skarke**, A. D. and J. A. Madsen (2006), The capacity of chirp sonar for remote classification of benthic sediments in an estuarine environment, *Geological Society of America Abstracts with Programs*, 38(7), 367.

**Skarke**, A. D., J. A. Madsen, C.K. Sommerfield (2004), Applications of chirp sonar acoustic reflection coefficients for bottom sediment characterization: Results from the upper Delaware estuary, *Geological Society of America Abstracts with Programs*, 36(5), 290.

**Skarke**, A.D., and C.E. McClennen (2003), Late-glacial and Holocene evolution of Lake Ontario; lake-level, isostatic rebound, and sediment deposition, *Geological Society of America Abstracts with Programs* 35(3), 26.

## **RESEARCH GRANTS**

Telepresence, Information Management, and Data Product Development  
Stennis Exploration Command Center, NOAA, \$164,147, August 2014- September 2016. Co-PI. (W. Breckenridge, PI).

Comparative Impacts of Emerging Hurricane Observing Technologies using Wave Glider and EMILY Unmanned Surface Vehicles, NOAA, \$885,636, July 2014 – July 2016. Co-PI (R. Moorhead, PI).

## **PROFESSIONAL AFFILIATIONS**

National Association of Geoscience Teachers (2014)  
Marine Technology Society (2009)  
American Geophysical Union (2004)  
Geological Society of America (2002)

## **PROFESSIONAL SERVICE**

### **Internal**

2015 MSU College of Arts and Sciences Associate Dean for Research and Graduate Studies Search Committee.  
2015- Present: Department of Geosciences Governance Committee  
2014- Present: Judge for MSU Undergraduate Student Symposium  
2014- Present: Department of Geosciences Representative to MSU College of Arts and Sciences Faculty Senate  
2014- Present: Department of Geosciences Laboratory Committee  
2014- Present: Judge for MSU Graduate Student Symposium

**External**

2015: *Ad hoc* reviewer for National Science Foundation Postdoctoral Fellowship Proposal  
2014: State representative (MS) to the Southeast Section of the National Association of Geoscience Teachers.  
2014: *Ad hoc* reviewer for *Geology*  
2014: Judge for Outstanding Student Paper Award at American Geophysical Union Fall Meeting  
2013: Convener of theme session at American Geophysical Union Fall Meeting  
2013: Summer Research Mentor for NOAA Hollings Scholar  
2012: Reviewer for NOAA Hollings Scholar Program  
2010: Convener of theme session at NE/SE regional meeting of the Geological Society of America