Kathleen E. Wilson
Assistant Professor
Department of Earth and Environmental Sciences
Boston College

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RESEARCH INTERESTS

Coastal Geomorphology, Aeolian Sedimentology, Quaternary Climate and Sea Level Change, Storm Hazards and Coastal Resilience, Natural Resource Management and Decision-support

EDUCATION

2022   **Ph.D.,** *Geosciences,* Jackson School of Geosciences, The University of Texas at Austin

2014   **M.S.,** *Geology,* University of Florida

2011   **B.S.,** *Geology*, University of Pittsburgh
         B.A., *Environmental Studies*, University of Pittsburgh

PROFESSIONAL APPOINTMENTS

2023 – present	**Assistant Professor**, Boston College
2022	**Visiting Scholar**, Boston College
2017 – 2022	**Research and Teaching Assistant,** The University of Texas at Austin
2020	**Exploration Intern**, Equinor
2019	**Exploration Intern**, Equinor
2014 – 2017	**Researcher IV***;* Contracted to U.S. Geological Survey, St. Petersburg Coastal and Marine Science Center
2013 – 2014	**Research Assistant**, University of Florida
2011 – 2012	**Project Scientist**; Shaw Environmental and Infrastructure; Monroeville, PA

TEACHING EXPERIENCE

Primary Instructor
Boston College
   EESC2264 Stratigraphy and Sedimentation [2023]
   EESC6691 Earth System Seminar [2023]
   EESC2206 Environmental Systems: Oceans [2023]

Teaching Assistant
University of Texas at Austin
   Geo 316: Sedimentary Rocks [2022]
   Geo 365Q/385Q: Geomorphology [2020]
   Geo 302E: Earth, Wind, and Fire [Lead TA; 2019]
   Geo 405: Life Through Time [2018]

University of Florida
   Gly 2100C: Historical Geology [2014]

Instructor
   GeoFORCE Southwest 9th grade Academy [2021; 2022; 2023]
   GeoFORCE Gear Up 9th grade Academy [2020]
   Latinitas Eco-Chicas Summer Camp [2020]

Invited Guest Lectures
   Coastal Sedimentology; University of West Georgia [2020]
   Introduction to Coastal Geomorphology; University of Florida [2013]

STUDENT MENTORING & ADVISING

Manica Nawaz; Boston College [PhD Student, 2023-]

Anthony Edgington; Boston College [PhD Student, 2023-; co-advised]

Megan Gillen; MIT/WHOI Joint Program [PhD Committee member; 2022 – present]

Arisa Ruangsirikulchai, undergraduate honors thesis [2017 – 2019]
   Evolutionary History of Return-Flow Channels Caused by Hurricane Harvey at San Jose Island, TX
   Received UT-Austin's **Undergraduate Research Fellowship** to conduct field work
   Winner of Best Undergraduate Presentation; Jackson School of Geosciences Research Symposium

Mitchell Pham, undergraduate research project [2017 – 2018]
   Shoreline response to Hurricane Harvey at Sargent Beach, Texas

GRANTS & FELLOWSHIPS

2021   University Graduate Continuing Fellowship, The University of Texas at Austin **($44,000)**

2021   Jackson School of Geosciences Off Campus Research Grant **($1,000)**

2020   NSF/SEPM Student Travel Grant **($1,100)**

2020   IAS Student Travel Grant **(€250)**

2020   SEPM Student Travel Grant **($300)**

2019   SEPM Student Travel Grant **($500)**

2018   Jackson School of Geosciences Off Campus Research Grant **($1,000)**

2018   American Association of Petroleum Geologists Grants in Aid **($4,000)**

2017   Jackson Fellowship, The University of Texas at Austin **($44,000)**

2015   Co-PI; USGS/NPS Natural Resource Preservation Program Funding **($345,608)**

FIELD EXPERIENCE

2021   Geomorphology of Pleistocene and Holocene Coastal Dunes; Eleuthera, The Bahamas

2019	CoChe 2019: Coastal Changes and Evolution, Sardinia, Italy
2019	Repeat monitoring of return-flow channels cut by Hurricane Harvey, San Jose Island, Texas
2019	Carbonate Aeolianite Sedimentology, Turks and Caicos Islands
2018	Carbonate Coastal Processes, San Salvador & Eleuthera, The Bahamas
2018	Marine Geology and Geophysics Short Course, Galveston, Texas
2018	Investigation of return-flow channels, cut by Hurricane Harvey, San Jose Island, Texas
2018	Carbonate Margin Profiles, Eleuthera, The Bahamas
2017	Hurricane Harvey coastal impact assessment; Matagorda Island and Sargent Beach, Texas
2015-2017	Seasonal GPS surveys of beach and dune system, Fire Island, New York (10 surveys)
2016	Tropical Storm Colin coastal erosion assessment, Pinellas County, Florida
2014	ExxonMobil Guadalupe Field School, Guadalupe National Park
2013	Modern Carbonate Geology, San Salvador, The Bahamas
2011	Indiana University Rocky Mountain Field Geology, Montana
2009	Geology and Ecology of Ecuador, Study abroad, Ecuador

GEOSCIENCE EDUCATION & OUTREACH

GeoFORCE, The University of Texas at Austin [2017 – 2022]
- **Developed Hurricane Box** and emergency evacuation preparation information for ExploreUT, UT Girl Day, and Houston Energy Day [2018 – 2022]
- **Judge**; Student projects presented at JSG Research Symposium [2019, 2020]
- **Trail Driver**; Southwest 9th grade Academy [2018]

St. Petersburg Science Festival: *volunteer* [2016 – 2017]
Pinellas County Regional Science Fair: *judge* [2016]
University of South Florida Oceanography Camp for Girls: *volunteer* [2015, 2016, 2017]
Florida Museum of Natural History: Can You Dig It?: *volunteer* [2013 – 2014]

JUSTICE, EQUITY, DIVERSITY AND INCLUSION

GeoFORCE, The University of Texas at Austin [2017 – 2022]
- **Mentor**; GeoFORCE undergraduate alumni [2017 – 2022]
- **Panelist**; *Applying to Graduate School* sponsored by JSG and GeoFORCE [2018]

Bystander Intervention Training [2021]
Unlearning Racism in Geoscience [2021]

MEMBERSHIPS & AFFILIATIONS

American Geophysical Union (AGU)
Geological Society of America (GSA)
Society for Sedimentary Geology (SEPM)
American Shore and Beach Preservation Association (ASPBA)
International Association of Sedimentologists (IAS)

Phi Beta Kappa Honor Society

PROFESSIONAL ACTIVITIES & SERVICE

2023   **Attendee,** SERC Early Career Workshop

2020   **Co-convener**, AGU Fall Meeting Session: *Geomorphology of Quaternary Carbonate Systems: Records of Sea-level and Climate Change*

2020   **Student Representative;** SEPM Council Nominating Committee

Peer-review

2023   *G-cubed (Geochemistry, Geophysics, Geosystems)*

2023   *Marine Geology*

2021   *Aeolian Research*

2021   *Physical Geography*

2020   *Journal of Geophysical Research: Earth Surface*

PUBLICATIONS

*indicates student mentee

Peer Reviewed Articles

1. Sahoo S, Gilleaudeau G, **Wilson KE**, Hart B, Faison T, Hlava K, Bowman A, Hallem V, Larsen T, Kaufman AJ. 2023*.* Eustasy, Euxinia, and Extinction: Global reorganization across the Devonian-Carboniferous Transition. *Nature* 615, 640-645*.* DOI: 10.1038/s41586-023-05716-2

2. Rendall B, **Wilson KE**, Kerans C, Helper M, Mohrig D. 2022. Coriolis effect entombed in Pleistocene (MIS5) Bahamian dune fields: Evidence from regional mapping using remote sensing (TanDEM-X) data. *Geology* 50 (5): 567–571. DOI: 10.1130/G49454.1

3. **Wilson KE**, Mohrig D. 2021. Anatomy of a Tempestite from a Non-Local Storm: Swell Generated Transport of Sand and Boulders on Eleuthera, The Bahamas*. Sedimentology.* DOI: 10.1111/sed.12842

4. **Wilson KE**, Lentz EE, Miselis JL, Safak I, Brenner OT. 2019. A Bayesian approach to predict sub-annual beach change and recovery. *Estuaries and Coasts*, DOI: 10.1007/s12237-018-0444-1

5. Brenner OT, Lentz EE, Hapke CJ, Henderson RE, **Wilson KE**, Nelson TR. 2017. Characterizing storm response and recovery using the beach change envelope. *Geomorphology* 300, 189-202*.*

6. **Wilson KE**, Adams PN, Hapke CJ, Lentz EE, Brenner OT. 2015. Application of Bayesian Networks to Hindcast Barrier Island Morphodynamics. *Coastal Engineering,* 102.

7. Rossi RJ, Bain DJ, Jennerette GD, Clarke LW, **Wilson KE**. 2015. Responses of roadside soil cation pools to vehicular emission deposition in southern California. *Biogeochemistry*, 123 (1).

In prep.

1. **Wilson KE,** Swanson T, Mohrig D. Modeling Environmental Controls on Coastal Dune Morphology and Aeolian Landscape Evolution. One paper to be submitted to *Aeolian Research*

2. *Ruangsirikulchai A, **Wilson KE**, Mohrig D. Growth of Return-Flow Channels across San Jose Island during Hurricane Harvey, Texas, USA. One paper to be submitted to *Earth Surface Dynamics*

3. **Wilson KE**, Mohrig D. Signatures of Marine Transgression Preserved in Lithified Coastal Dune Morphology. One paper to be submitted to *Geosciences*

U.S. Geological Survey Data Series and Research Products

1. Snell R, Lentz E, Miselis J, Shreppel H, **Wilson KE**, Brenner OT, Boynton B. Coastal Change at Fire Island GeoNarrative; https://wim.usgs.gov/geonarrative/ficc/

2. **Wilson KE**, Hapke CJ, Henderson RE, Lentz EE, Miselis JL, Weppler PM. 2017. Post-Hurricane Sandy Beach Profile Survey – Fire Island Inlet to Moriches Inlet 2013: U.S. Geological Survey data release, https://doi.org/10.5066/F7XK8CSR.

3. Nelson TR, Miselis JL, Hapke CJ, Brenner OT, Henderson RE, Reynolds BJ, **Wilson KE**. 2017. Coastal bathymetry data collected in May 2015 from Fire Island, New York—Wilderness breach and shoreface: U.S. Geological Survey Data Series 1049, https://doi.org/10.3133/ds1049.

4. Nelson TR, Miselis JL, Hapke CJ, Brenner OT, Henderson RE, Reynolds BJ, **Wilson KE**, 2017. Bathymetry Data Collected in October 2014 from Fire Island, New York: Wilderness Breach, Shoreface, and Bay: U.S. Geological Survey Data Series 1034, https://doi.org/10.3133/ds1034.

5. Nelson TR, Miselis JL, Hapke CJ, **Wilson KE**, Henderson RE, Brenner OT, Reynolds BJ, Hansen ME. 2016. Coastal Bathymetry Data Collected in 2014 from Fire Island, New York: Wilderness Breach and Shoreface: U.S. Geological Survey Data Series 1007 http://dx.doi.org/10.3133/ds1007.

PRESENTATIONS
Invited Talks

2023 American Geophysical Union Fall Meeting, Coastal Geomorphology and Morphodynamics Session. *Modeling The Influence Of Surface Properties And Sediment Mobility On Coastal Dune Morphology*

2023 Woods Hole Oceanographic Institute Coastal Ocean Fluid Dynamics Laboratory Lecture Series. *Swell Generated Transport and Washover Deposition of Sand and Boulders on Eleuthera, The Bahamas.*

2022 Boston College Department of Earth and Environmental Sciences. *Leveraging the Geomorphology of Carbonate Coastal Dunes as Paleo-Environmental Records*.

2021 Geological Society of America Annual Meeting. *Geomorphology and Stratigraphy of Carbonate Coastal Dune Complexes in The Bahamas.*

2021 University of Alaska Anchorage, Department of Geological Sciences. *Connecting Earth Surface Processes to Coastal Landscapes and the Sedimentary Record: From Storms to Millenia.*

Selected Conference Abstracts

2023 **Wilson KE**, Swanson T, Mohrig D. *Modeling environmental controls on coastal dune morphology and aeolian landscape evolution*. International Conference on Aeolian Research XI, Las Cruces, NM.

2021 **Wilson KE**, Mohrig D, Rendall B*. Development of a terrestrial proxy for paleo sea-level using lithified coastal-dune morphology*. Geological Society of America Abstracts 52 (6).

2019   **Wilson KE**, Mohrig D, Swanson T, Kerans C. *Investigating the mid-Holocene wind climate on San Salvador, The Bahamas using an Aeolian Surface Model*. IAS 34th Meeting of Sedimentology. Rome, Italy

2019   *Ruangsirikulchai A, **Wilson KE**, Mohrig D, Hassenruck-Gudipati H, Laporte M. *Developmental History of Return-Flow Channels Caused by Hurricane Harvey at San Jose Island, Texas, USA,* EGU General Assembly 2019. Vienna, Austria. Abstract ID: EGU2019-1475

2018   *Ruangsirikulchai A, **Wilson KE**, Hassenruck-Gudipati H, Laporte M, Mohrig D. *Evolution of Return-Flow Channels Cut into San Jose Island, Texas, Caused by Hurricane Harvey*. AGU Fall Meeting 2018. Washington D.C., Abstract ID: EPC23C-2347

2018   **Wilson KE**, Hassenruck-Gudipati HJ, Mason J, Schroeder CL, Smith B, Mohrig D. *Coastal impacts from far field storms – Evidence from Eleuthera, The Bahamas*. AGU Fall Meeting 2018. Washington D.C.

2017   **Wilson KE**, Swartz JM, Mohrig D. *Back-barrier topographic control on the morphology of Hurricane Harvey washover deposits.* AGU Fall Meeting. New Orleans, LA

2017   **Wilson KE**, Lentz EE, Miselis JL, Brenner OT, Safak, I. *Forecasting upper beach morphodynamics at Fire Island, New York.* CERF Biennial Conference. Providence, RI

2016   **Wilson KE**, Lentz EE, Brenner OT, Safak I, Hapke CJ. *Development of a Probabilistic Decision-Support Model to Forecast Coastal Resilience*. AGU Ocean Sciences. New Orleans, LA

2015   **Wilson KE**, Hapke, CJ, Lentz EE, Brenner OT. *Forecasting Beach Recovery Using Bayesian Networks*. American Shore and Beach Preservation Association National Coastal Conference, 2015. New Orleans, LA