



C PATRICK BARRINEAU

Coastal Scientist

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Education

PhD. Geography, Texas A&M University
MS. Geography, University of South Carolina
BA. Geography, Auburn University

Registration

Professional Geologist (SC #2773)

Experience Highlights

Dr. Barrineau serves as a coastal scientist and project manager for CSE, performing work in the field, laboratory, and office. He has served as project manager at Arcadian Shores and Singleton Swash (2018), Myrtle Beach (2017-present), Pawleys Island (2020), Sea Island (2018-present), and regularly curates coastal data from collection to publication in concert with CSE staff. While at CSE, Dr. Barrineau has prepared reports and/or permit documents for projects at Bridgehampton-Sagaponack (NY), Nags Head (NC), Avon (NC), Buxton (NC), Myrtle Beach (SC), Pawleys Island (SC), Debidue Island (SC), Kiawah Island (SC), Seabrook Island (SC), Edisto Beach (SC), and Sea Island (GA). He holds a BA from Auburn University, an MS from the University of South Carolina, and a PhD from Texas A&M University. Prior to joining CSE, Dr. Barrineau studied coastal processes and landforms through field-based research on sediment transport and barrier-lagoon evolution. He has organized and led field studies in South Carolina, Texas, New Mexico, California, and Brazil. In addition to his work at CSE, Dr. Barrineau teaches a graduate-level course in Coastal Zone Management at the University of South Carolina.

Relevant Professional Experience

Coastal Scientist (2017-present)
Coastal Science & Engineering, Inc.
Columbia, SC

Adjunct Faculty (2018-present)
University of South Carolina
Columbia, SC

Adjunct Faculty (2017)
Midlands Technical College
Columbia, SC

Adjunct Faculty (2014-2017)
Eastern Kentucky University
Richmond, KY

Graduate Assistant (2012-2014)
Texas A&M University
College Station, TX

Graduate Assistant (2010-2012)
University of South Carolina
Columbia, SC

Undergraduate Assistant (2009-2010)
Auburn University
Auburn, AL

Publications – Peer-Reviewed

Harris, M., Ellis, J., Barrineau, P., 2020. Evaluating the geomorphic response from sand fences on dunes impacted by hurricanes. *Ocean and Coastal Management* 193 DOI 10.1016/j.ocecoaman.2020.105247.

Barrineau, P., Kana, T., 2019. Unpacking Storm Damages on a Developed Shoreline: Relating Dune Erosion and Urban Runoff. *Shore and Beach* 87(3), 35-45.

Barrineau, P., Janmaat, R., Kana, T., 2019. An empirical estimation of depth of closure along the US East Coast. *Coastal Sediments*, vol. 9, Coastal Sediments Conference Proceedings, St. Petersburg Beach FL.

Ewing, R., Phillips, J., Bowling, R., Weymer, B., Barrineau, P., Nittouer, J., Everett, M., 2019. Low-angle eolian deposits formed by protodune migration, and insights into slipface development at White Sands Dune Field, New Mexico. *Aeolian Research* 36, 9-26.

Barrineau, P., Dobрева, I., Bishop, M., Houser, C., Forman, S., 2018. Deconstructing aeolian landscapes. *CATENA* 174, 452-468.

Barrineau, P., Dobрева, I., Bishop, M., Houser, C., 2016. "Deconstructing a polygenetic landscape using LiDAR and multi-resolution analysis". *Geomorphology* 258, 51-57.

Weymer, B., Everett, M., Houser, C., Wernette, P., Barrineau, P., 2016. "Differentiating tidal and

groundwater dynamics from barrier island framework geology". *Geophysics* 81(5), E347-E361.

Houser, C., Bishop, M., Barrineau, P., 2015. "Characterizing instability of aeolian environments using analytical reasoning". *Earth Surface Processes and Landforms* 40(5), 696-705.

Barrineau, C.P. and Ellis, J.T., 2013. "Sediment transport and wind flow around hummocks". *Aeolian Research* 8, pp. 19-27.

Publications – Book Chapters

Houser, C., Barrineau, P., Hammond, B., Saari, B., Rentschler, E., Trimble, S., Wernette, P., Young, S., 2017. Role of the foredune in controlling barrier island response to sea level rise. In: *Barrier Islands*, ed. Moore and Murray.

Barrineau, P., Wernette, P., Weymer, B., Trimble, S., Hammond, B., Houser, C., 2015. Coastal Landscapes in the Critical Zone. In: *Principles and Dynamics of the Critical Zone*, Vol. 19, pp. 495-420.

Specializations

- Collection and analysis of elevation and geophysical data
- Collection and analysis of coastal sediments
- Beach and Dune processes
- Conceptual models of landscape evolution
- Synthesizing interdisciplinary research into a coherent narrative

Research Experience

Conceptual and numerical modeling of landscape evolution in coastal and desert systems; modeling fluid dynamics and sediment transport; identifying controls on sediment transport patterns; monitoring beach and dune response and recovery following storm impact; environmental and natural resource management for conservation and forestry. Published or led field research at Myrtle Beach (SC), Isle of Palms (SC), Seabrook Island (SC); Core Banks (NC); Sea Island (GA); Padre Island (TX); Kenedy Ranch (TX); White Sands (NM); Pismo Beach (CA); Jericoacoara, Brazil.

Technical Experience

Extensive experience working in coastal and desert settings, collecting elevation and geophysical data using RTK-GPS, Total Station,

ground-penetrating RADAR, and Electromagnetic Induction Profilers. Collected hundreds of vibracores as well as push cores, and analyzed thousands of sediment samples for grain size, sorting, mineralogy, and X-ray fluorescence.

Software Capabilities

- General: Microsoft Office suite
- GIS: ArcGIS, QGIS, Global Mapper
- Remote Sensing: ERDAS Imagine, ENVI
- Coding Languages: MATLAB, Python, R

Service and Memberships

- Editorial Board; *Shore & Beach*
- Science & Technology Committee; *ASBPA*
- Reviewer; *J. Geophys. Res., Earth Surf. Proc. Land., CATENA, Physical Geography, J. Mar. Sci. Eng., Water*
- Member; ASCE (Associate), ASBPA, Sigma Xi, GSA, AGU, AAG

Grants, Awards, and Honors

- Who's Who in America
 - Marquis Who's Who
 - November 2020
- Norb Psuty Outstanding Student Pres
 - Assoc. Amer. Geographers
 - April 2017 & February 2012
- Dissertation Fellowship
 - Assoc. Amer. Geographers
 - February 2016
- Pipes Endowed Scholarship
 - Texas A&M University
 - August 2014
- Eagle Scout, Bronze Palm
 - Indian Waters Council (SC)
 - December 2005

Professional References

Dr. Tim Kana, Coastal Science & Engineering Inc., tkana@coastalscience.com

Dr. Chris Houser, University of Windsor, Chris.Houser@uwindsor.ca

Dr. Vatche Tchakerian, Texas A&M University, v-tchakerian@tamu.edu

Dr. Jean Ellis, University of South Carolina, jellis@seoe.sc.edu