ALICIA M. WILSON

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EDUCATION

Johns Hopkins University, Ph.D. 1999	Earth and Planetary Sciences (Hydrogeology)
Stanford University, M.S. 1993	Applied Earth Science (Hydrogeology)
Dartmouth College, B.A. 1991	Earth Science

RESEARCH INTERESTS

Hydrogeology, particularly coastal hydrogeology as it pertains to coastal ecosystems and submarine groundwater discharge.

APPOINTMENTS

2017 to present	Professor, School of the Earth, Ocean, and Environment, UofSC
2020-2022	Director, School of the Earth, Ocean, and Environment, UofSC
2017-2020	Associate Director, School of the Earth, Ocean, and Environment, UofSC
2010-2011	Blaustein Visiting Professor, Stanford University
2007 to 2016	Associate Professor, Earth & Ocean Sciences, University of South Carolina
2001 to 2007	Assistant Professor, Geological Sciences, University of South Carolina
2000	Post-doc, Bren School of Environmental Science & Management
1999	National Research Council Post-doctoral Research Associate, USGS WRD, Reston VA

HONORS AND AWARDS

2023	The 2023 Darcy Lecturer, National Ground Water Association
2018	Mungo Undergraduate Teaching Award, University of South Carolina
2017	Fellow, Geological Society of America
2017	Finalist, Mungo Undergraduate Teaching Award, University of South Carolina
2016	University of South Carolina Student Disability Services “Two Thumbs Up” Award

Publications (57 in print) Google scholar profile *Wilson graduate student; **Wilson undergraduate; [+]corresponding author

1. Xiao, Kai, and 21 other authors (2024) Widespread crab burrows weaken coastal blue carbon sinks. Communications Earth & Environment, v. 5, article no. 437. https://doi.org/10.1038/s43247-024-01621-2

2. Wilson, Stephanie J., Moody, A., McKenzie, T., Cardenas, M.B., Luijendijk, E., Sawyer, A., Wilson, A.M. et al. (2024) Global subterranean estuaries control groundwater nutrient loading to the ocean, L&O Letters v. 9, p. 411-422. http://doi.org/10.1002/lol2.10390

3. Vincent, Jacob, and A.M. Wilson (2024) Detecting changes in seafloor elevation in sandy coastal environments using low-cost opensource tooling. HardwareX 18, E00532, DOI: https://doi.org/10.1016/j.ohx.2024.e00532

4. Wilson, A.M., *Osborne, A., and White, S.M. (2024) Large-scale groundwater flow and sedimentary diagenesis in continental shelves influence marine chemical budgets. Nature Communications v. 15, article no. 1143. https://doi.org/10.1038/s41467-024-44919-7
5. Yin, M., Xiao, K., Xin, P., Li, H., Zhen, C., Smith, E., and Wilson, A.M. (2023) Randomly Distributed Crab Burrows Enhance Groundwater Flow and Salt Transport in Creek-Marsh Systems. Water Resources Research 59(11), e2023WR035612. https://agupubs.onlinelibrary.wiley.com/doi/10.1029/2023WR035612.
6. White, S. M., Smoak, E., Leier, A. L., & Wilson, A. M. (2023). Small Muddy Paleochannels and Implications for Submarine Groundwater Discharge near Charleston, South Carolina, USA. *Geosciences*, *13*(8), 232. https://doi.org/10.3390/geosciences13080232
7. Moore, W.S., *J. Vincent, J.L. Pinckney, and A.M. Wilson (2022) Predicted episode of submarine groundwater discharge onto the South Carolina, USA, continental shelf and its effect on dissolved oxygen. Geophysical Research Letters v. 49, e2022GL100438. https://doi.org/10.1029/2022GL100438
8. Pinckney, J, S. Saunbrecher, S. Lang, A. Wilson, and A. Knapp (2022) Seasonality of benthic microalgal community abundance in shallow shelf waters. Continental Shelf Research v. 244, 104797. https://doi.org/10.1016/j.csr.2022.104797
9. Xin, Pei, Alicia M. Wilson, Chengji Shen, Zhenming Ge, Kevan B. Moffett, Isaac R. Santos, Xioagang Chen, Xinghua Xu, Yvonne Y.Y. Yau, Willard Moore, Ling Li, and D.A. Barry. (2022) Surface water and groundwater interactions in salt marshes and their impact on plant zonation and outwelling. Reviews of Geophysics 60(1), e2021RG000740. https://doi.org/10.1029/2021RG000740
10. Correa, R.E., Xiao, K., Conrad, S.R., Wadnerkar, P.D., Wilson, A.M., Sanders, C.J., and Santos, I.R. (2022) Groundwater Carbon Exports Exceed Sediment Carbon Burial in a Salt Marsh. *Estuaries and Coasts*. https://doi.org/10.1007/s12237-021-01021-1
11. Wilson, Alicia M., *Meghan Shanahan, and Erik M. Smith (2021) Salt marshes as groundwater buffers for development: A survey of South Carolina salt marsh basins. Frontiers in Water v.3 article 770819. https://doi.org/10.3389/frwa.2021.770819
12. Xiao, Kai, Alicia M. Wilson, Hailong Li, Isaac R. Santos, Joseph Tamborski, Erik Smith, Susan Q. Lang, Chunmiao Zheng, Xin Luo, Rogger E. Correa (2021) Large CO_2 release and tidal flushing in salt marsh crab burrows reduce the potential for blue carbon sequestration. Limnology and Oceanography. https://doi.org/10.1002/lno.11582
13. *George, C., W.S. Moore, S.M. White, E. Smoak, S.B. Joye, A. Leier, and A.M. Wilson^{+} (2020) A new mechanism for submarine groundwater discharge from continental shelves. Water Resources Research, 56, e2019WR026866. https://doi.org/10.1029/2019WR026866.
14. *Evans, Tyler B., Scott M. White, and Alicia M. Wilson^{+} (2020) The impact of future sea-level rise on coastal groundwater systems at the nearshore and embayment scales. Water Resources Research, 56, e2019WR026445. https://doi.org/10.1029/2019WR026445
15. Schutte, C.A., W.S. Moore, A.M. Wilson, and S.B. Joye (2020) Groundwater-driven methane export reduces salt marsh blue carbon potential. Global Biogeochemical Cycles v. 34, e2020GB006587. https://doi.org/10.1029/2020GB006587
16. Duque, C., H.A. Michael, and A.M. Wilson (2020) The subterranean estuary: Technical term, simple analogy, or source of confusion? Water Resources Research v. 56, https://doi.org/10.1029/2019WR026554.
17. Xiao, K, H. Li, Y, Xia, J. Yan, A.M. Wilson, H.A. Michael, X. Geng, E. Smith, M.C. Boufadel, P. Yuan, X. Wang (2019) Effects of tidally varying salinity on groundwater flow and solute transport: insights

from modelling an idealized creek-marsh aquifer. Water Resources Research v. 55. https://doi.org/10.1029/2018WR024671.

18. Xiao, K, A.M. Wilson, H. Li, and *C. Ryan (2019) Crab burrows as preferential flow conduits for groundwater flow and transport in salt marshes: a modeling study. Advances in Water Resources. v. 132, 103408. https://doi.org/10.1016/j.advwatres.2019.103408
19. Xiao, K, H. Li, D.H. Song, Y.Y. Chen, A.M. Wilson, *M. Shanahan, G. Li, Y.M. Huang (2019) Field measurements for investigating the dynamics of the tidal prism during a spring-neap tidal cycle in Jiaozhou Bay, China. Journal of Coastal Research 35, 335 – 347. Doi: 10.2112/JCOASTRES-D-17-00121.1
20. Xiao, K., J. Wu, H. Li, Y. Hong, A.M. Wilson, J.J. Jiao, *M. Shanahan (2018) Nitrogen fate in a subtropical mangrove swamp: potential association with seawater-groundwater exchange. Science of the Total Environment, 635:586-597.
21. Schutte, C.A., A.M. Wilson, T.B. Evans*, W.S. Moore, S.B. Joye (2018) Deep oxygen penetration drives nitrification in intertidal beach sands. Limnology and Oceanography 63, S193-S208. Doi: 10.1002/lno.10731
22. *Evans, Tyler and Alicia M. Wilson (2017) Submarine groundwater discharge and solute transport under a transgressive barrier island. Journal of Hydrology, 547:97-110.
23. Michael, H.A., V.E.A. Post, A.M. Wilson, and Adrian D. Werner (2017) Science, society, and the coastal groundwater squeeze. Water Resources Research. Doi: 10.1002/2017WR020851
24. Xiao, K., H. Li, A.M. Wilson, Y. Xia, L. Wan, C. Zheng, Q. Ma, C. Wang, X, Wang, X. Jiang (2017) Tidal groundwater flow and its ecological effects in a brackish marsh at the mouth of a large sub-tropical river. Journal of Hydrology, 555:198-212. Doi: 10.1016/j.jhydrol.2017.10.025
25. Savidge, W.B., A.M. Wilson, and G. Woodward** (2016) Using a thermal proxy to examine sediment-water exchange in mid-continental shelf sandy sediment. Aquatic Geochemistry 22:419-441. doi:10.1007/s10498-016-9295-1.
26. Wilson, A.M., W.B. Savidge, and G. Woodward** (2016) Using heat as a tracer to estimate the depth of rapid porewater advection below the sediment-water interface. Journal of Hydrology 538:743-753. https://doi.org/10.1016/j.jhydrol.2016.04.047
27. *Evans, Tyler, and Alicia M. Wilson (2016) Groundwater transport and the freshwater-saltwater interface below beaches. Journal of Hydrology 538:563-573. https://doi.org/10.1016/j.jhydrol.2016.04.014
28. Schutte, C.A., S.M. Joye, A.M. Wilson, W.S. Moore, and T.B. Evans* (2016) Methanotrophy controls groundwater methane export from a barrier island. Geochimica et Cosmochimica Acta 17:242-256.
29. Schutte, Charles A., S.B. Joye, A.M. Wilson, T.B. Evans*, W.S. Moore and K. Casciotti (2015). Intense nitrogen cycling in permeable intertidal sediment revealed by a nitrous oxide hotspot. Global Biogeochemical Cycles, 29, doi:10.1002/2014GB005052.
30. *Hughes, A.H., A.M. Wilson, and W.S. Moore (2015) Groundwater transport and radium variability in coastal porewaters. Estuarine, Coastal and Shelf Science, 164, p 94-104. http://dx.doi.org/10.1016/j.ecss.2015.06.005.
31. Wilson, Alicia M., Tyler Evans*, Willard Moore, Charles Schutte, and Samanatha Joye (2015) What time scales are important for monitoring tidally-influenced submarine groundwater discharge? Insights from a salt marsh. Water Resources Research 51, 4198-4207, doi:10.1002/2014WR015984.
32. *Gupta, Ipsita, Alicia M. Wilson, and Benjamin J. Rostron (2015) Groundwater age, brine migration, and large-scale solute transport in the Alberta Basin, Canada. Geofluids 15, 608–620. doi: 10.1111/gfl.12131.
33. Wilson, Alicia M., T.B. Evans*, A.H. Hughes*, W.S. Moore, C.A. Schutte, S.B. Joye (2015)

Groundwater controls ecological zonation of macrophytes in salt marshes. Ecology 96, 840-849. http://dx.doi.org/10.1890/13-2183.1.

34. Das, Reshmi, Michael Bizimis, and Alicia M. Wilson (2013) Tracing mercury seawater vs. atmospheric inputs in a pristine SE USA salt marsh system: Mercury isotope evidence. Chemical Geology 336, p. 50-61.
35. *Hughes, Andrea L.H., Alicia M. Wilson, and James T. Morris (2012) Hydrologic variability in a salt marsh: Assessing the links between drought and acute marsh dieback. Estuarine, Coastal and Shelf Science 111(95-106).
36. Wilson, Alicia M., and James T. Morris (2012) The influence of tidal forcing on groundwater flow and nutrient exchange in a salt marsh-dominated estuary. Biogeochemistry v. 108, no. 1, p. 27-38.
37. *Gupta, Ipsita, Alicia M. Wilson, and Benjamin J. Rostron (2012) Cl/Br ratios as indicators of the origin of brines: Hydrogeologic simulations of the Alberta Basin, Canada. GSA Bulletin, v. 124 no. 1-2, p. 200-212.
38. Wilson, Alicia M., Willard, S. Moore, Samantha B. Joye, Joseph L. Anderson*, and Charles A. Schutte (2011) Storm-driven groundwater flow in a salt marsh. Water Resources Research, v. 47, W02535, doi:10.1029/2010WR009496, 11 pp.
39. Wilson, Alicia M., Marcus Huettel, and Steven Klein (2008) Grain size and depositional environment as predictors of permeability in coastal marine sands, Estuarine, Coastal and Shelf Sediments 80(1) 193-199.
40. Carter, E.S., S.M. White, and A.M. Wilson (2008) Variation in groundwater salinity in a tidal salt marsh basin, North Inlet Estuary, South Carolina. Estuarine, Coastal and Shelf Science 76, 543-552.
41. Wilson, Alicia M., and Carolyn Ruppel (2007) Salt tectonics and shallow subseafloor fluid convection: models of coupled fluid-heat-salt transport. Geofluids 7 (4), 377-386.
42. *Thornton, M. M., and Alicia M. Wilson (2007) Topography-driven flow versus buoyancy-driven flow in the U.S. mid-continent: implications for the residence time of brines, Geofluids, 7, 69-78.
43. Gardner, Leonard R., and Alicia M Wilson (2006) Comparison of four numerical models for simulating seepage from salt marsh sediments. Estuarine, Coastal and Shelf Science, 69, 427-437.
44. Wilson, A. M., and L. R. Gardner (2006), Tidally driven groundwater flow and solute exchange in a marsh: Numerical simulations, Water Resour. Res., 42, W01405, doi:10.1029/2005WR004302
45. Wilson A. M., and L. R. Gardner (2005), Comment on “Subsurface flow and vegetation patterns in tidal environments” by Nadia Ursino, Sonia Silvestri, and Marco Marani, Water Resour. Res., 41, W07021, doi:10.1029/2004WR003554.
46. Moore, Willard S., and Alicia M. Wilson (2005) Advective flow through the upper continental shelf driven by storms, buoyancy, and submarine groundwater discharge. Earth and Planetary Science Letters, Volume 235, Issues 3-4, 15 July 2005, Pages 564-576.
47. Wilson, Alicia M. (2005), Fresh and saline groundwater discharge to the ocean: A regional perspective. Water Resources Research, v. 41, W02016, doi:10.1029/2004WR003399.
48. Hoffman, J, S.A. Leake, D.L. Galloway, and A.M. Wilson (2003) MODFLOW-2000 ground-water model – User guide to the Subsidence and Aquifer-System Compaction (SUB) Package. U.S. Geological Survey Open-File Report 03-233, 44 p.
49. Wilson, Alicia M. (2003), The occurrence and chemical implications of geothermal convection in continental shelves: Geophysical Research Letters, v. 30, no. 21, 2127, doi:10.1029/2003GL018499
50. Wilson, Alicia M., Thomas Fenstemaker, and John M. Sharp, Jr. (2003) Abnormally-pressured beds as barriers to diffusive mass transport in sedimentary basins. Geofluids 3(3), p. 203-212.
51. Whitaker, Fiona F., Gareth Jones, Ward Sanford, Peter Smart, and Alicia M. Wilson (2002), Hydrology, geochemistry, and diagenetic potential of saline groundwater: field results from the

Bahamas and model studies: Special Publication of the Karst Waters Institute no. 7, p. 124-128.
52. Keller, Arturo A., Patricia Holden, and Alicia M. Wilson (2002) Modelling the seasonal variation in bioavailability of residual NAPL in the vadose zone, in Groundwater quality; natural and enhanced restoration of groundwater. S. F. Thornton and S. E. Oswald, eds., IAHS-AISH Publication vol. 275, p. 133-139.
53. Wilson, Alicia M., Ward Sanford, Fiona Whitaker, and Peter Smart (2001), Spatial patterns of diagenesis during geothermal convection in carbonate platforms: American Journal of Science, v. 301, p. 727-752.
54. Wilson, Alicia M., James R. Boles, and Grant Garven (2000), Calcium mass transport and diagenesis during compaction-driven flow in the San Joaquin Basin, California: GSA Bulletin, v. 112, no. 6, p. 845-856.
55. Wilson, Alicia M., Ward Sanford, Fiona Whitaker, and Peter Smart (2000), Geothermal convection: a mechanism for dolomitization at Enewetak Atoll?: Journal of Geochemical Exploration, v. 69-70, no. 1-3, p. 41-45.
56. Wilson, Alicia M., Grant Garven, and James R. Boles (1999), Paleohydrogeology of the San Joaquin Basin, California: GSA Bulletin, v. 111, No. 3, pp. 432-449.
57. Wilson, Alicia M., and Steven Gorelick (1996), The effects of pulsed pumping on land subsidence in the Santa Clara Valley, California: Journal of Hydrology, Vol. 184, No. 3-4, p. 375-396.

Grants

1. NSF, $7.542M, LTER: Georgia Coastal Ecosystems – V, Feb 1, 2025 – Jan 31, 2031. $162k to USC; Wilson component $88k.
2. NSF EPSCoR, $3.3M, Aug 1, 2024 – July 31, 2028. Collaborative Research: RII Track-2 FEC: Risks, Impacts & Strategies for Coastal Communities (RISCC): Advancing convergent science to support climate change adaptation & resilience. Wilson subcontract $389k.
3. NOAA Climate Program Office, $289k, 9/1/2021 – 8/31/2024. Studying how things fall apart: Exploring municipal services system failures to help develop science-based decision-points in South Carolina coastal communities. Lead PI Susan Lovelace, SC SeaGrant Consortium. Wilson subcontract $142k.
4. NSF OCE, $6.7M 12/01/18 – 11/31/24, LTER: Georgia Coastal Ecosystems – IV. Wilson subcontract $119k
5. National Center for Women & IT, $2000 6/15/2018 – 6/14/2019. Girls Go for IT Summer Camp: Week 1 Scratch. Lead PI Wilson, co-PI Dr. Toni Williams (School of Education)
6. National Center for Women & IT, $2000 6/15/2018 – 6/14/2019. Girls Go for IT Summer Camp: Week 2 Storytelling with Alice. Lead PI Wilson, co-PI Dr. Toni Williams (School of Education)
7. NSF (Biological Oceanography) $993K. Groundwater sources of “new” N for benthic microalgal production in the South Atlantic Bight. 1/1/2018-12/31/2021. Lead PI Jay Pinckney, co-PIs Alicia Wilson and Susan Lang. Wilson portion $217k.
8. NSF (Hydrology) $575K. Fluid and chemical fluxes across the seafloor of a passive margin. 7/1/2013 – 6/30/2018. Lead PI Wilson, co-PIs Billy Moore and Scott White.
9. National Center for Women & IT, $2000 5/15/2017-9/15/2017. 2017 Girls Go for IT Summer Camp. Lead PI Wilson. Co-PI Dr. Toni Williams, UofSC School of Education.
10. National Center for Women & IT, $2000 5/15/2016-9/15/2016. 2016 Girls Go for IT Summer Camp. Lead PI Wilson. Co-PI Dr. Toni Williams, UofSC School of Education.
11. South Carolina Sea Grant, $149k. How does coastal development impact groundwater inputs to estuarine tidal creeks? 2/1/2016-1/30/2018. Lead PI Wilson, co-PI Erik Smith.
12. National Center for Women & IT, $2000. 10/15/2015 – 5/15/2016. Girls Go for IT Computer Club. Sole PI.

13. National Center for Women & IT, $2000 5/15/2015-8/15/2015. 2015 Girls Go for IT Summer Camp. Lead PI Wilson. Co-PI Dr. Toni Williams, UofSC School of Education.
14. USC Provost's Office Research Engagement Collaborative Seed Grant, $25k. Coastal Health, Sustainability and Adaptation. Lead PI Dr. Kirstin Dow. Wilson is (unfunded) co-PI.
15. National Center for Women & IT, $1500 4/21/2014-8/15/2014. Girls Go for IT Summer Camp. Sole PI.
16. USC Internal funding (VPR) $14,855 Measurement of oxygen consumption in beach face pore waters. 4/16/2012-4/15/2013. Lead PI Tim Shaw. Wilson is co-PI (unfunded).
17. NSF (Hydrology) $574,094 (USC portion $374,094); 9/1/2007 – 8/31/2012. Collaborative Research: Groundwater dynamics of a barrier island. Lead PI Wilson. USC co-PI Billy Moore; UGA co-PI Mandy Joye.
18. South Carolina Sea Grant, $42,720, 2/1/2008 – 8/31/2009. An integrated hydrologic and ecological study of salt marsh dynamics. Lead PI Wilson. Co-PI Jim Morris (USC Biology).
19. South Carolina Sea Grant, $147,543, 3/1/2006 – 7/31/2008. An integrated hydrologic and ecological study of salt marsh dynamics. Lead PI Wilson. Co-PI Jim Morris (Biology).
20. USC Magellan Scholar Program $1200 6/1/2006 – 5/15/2007. 3-D Maps of Salinity and Groundwater Composition beneath South Carolina's Coastal Plain. With Elizabeth (Ashley) Shull, USC Geology Undergraduate Major.
21. DOE (Basic Energy Science), $158,000; 3/1/2004 – 5/15/2008. Understanding long-term solute transport in sedimentary basins: Simulating brine migration in the Alberta Basin, Canada. Sole PI.

Abstracts (2013-2024) *Wilson graduate student. Includes invited papers.

1. *Abioye, Riliwan, AM Wilson, N Levine, A Guthrie, L Knapp (2024). Mapping risk associated with high water tables in low-lying coastal regions. Geological Society of America Abstracts 56, 401344
2. Levine, Norman, D Williamson, AM Wilson, *R Abioye, L Knapp, A Guthrie, Huang, Shu-Mei (2024). Beaufort Adapts: Sea Level Rise Impacts on Groundwater and Septic Systems in Beaufort, SC. Geological Society of America Abstracts 56, 404841
3. Wilson, Alicia, *Osborne, Andrew and White, Scott M (2024).Large-Scale Groundwater Flow and Sedimentary Diagenesis in Continental Shelves are Important Controls on the Major Ion Chemistry of the Ocean. Geological Society of America Abstracts 56, 401247
4. *Abioye, Riliwan, A Wilson, N Levine, D Williamson (2024). Low-lying coastal communities as future wetlands. Geological Society of America Abstracts 56, 398090 (SE GSA, Asheville)
5. Wilson, Alicia, A. *Osborne, and S. White (2024). Large-scael flow of saline groundwateer through continental shelves influences the major ion chemistry of the ocean. AGU Fall Meeting Abstracts 2024, GC51AA-0009
6. Wilson, Alicia, R. Abioye, N. Levine, A. Guthrie, and L. Knapp (2024) "Rising Water Tables and Septic Systems: Estimating Risk in Coastal South Carolina". South Carolina Water Resources Conference. Oct 16-17, 2025. (Columbia SC)
7. Levine, Norman S., Williamson, D., Wilson, A., Abioye, R., Knapp, L., Guthrie, A. and Huang, S-M. Beaufort Adapts: Sea level rise impacts on groundwater and septic systems in Beaufort, SC. South Carolina Water Resources Conference. Oct 16-17, 2025. (Columbia SC)
8. *Abioye, Riliwan Damilola, and Alicia Wilson (2023) Climate Change and rising water tables in low-lying coastal South Carolina. Geological Society of America Abstracts with Programs. Vol. 55, No. 6, 2023, doi: 10.1130/abs/2023AM-395059

9. *Abioye, Riliwan Damilola, and Alicia Wilson (2023) Groundwater tables amidst climate change in low-lying Beaufort, South Carolina. Presented at the 42nd National Association of Black Geoscientists Conference. NABG 2023 Abstracts, page 38, September 28-30, 2023, Washington DC.
10. *Rossiello, Camille, and Alicia Wilson (2023) Groundwater flow and salt marsh migration: The forest/marsh boundary. Geological Society of America Abstracts with Programs. Vol. 55, No. 2, 2023 doi: 10.1130/abs/2023SE-385344
11. **Invited** Wilson, Alicia (2023) Where is the freshwater-saltwater interface in offshore coastal aquifers? Paper number EGU23-8357, EGU General Assembly, Vienna, Austria, https://doi.org/10.5194/egusphere-egu23-8357
12. **Invited** Wilson, Alicia (2022) Darcy Lecture: Subseafloor Hydrogeology: Moving beyond watersheds. Groundwater Week 2022, Las Vegas, NV.
13. Vincent, Jacob and Alicia Wilson (2022) Annual patterns and observations of submarine groundwater discharge and porewater exchange in the South Atlantic Bight. AGU Fall Meeting 2022, held in Chicago, IL, 12-16 December 2022, id. H42D-1292.
14. Schutte, Charles A, WS Moore, AM Wilson, and SB Joye (2020) Groundwater-driven methane export reduces salt marsh blue carbon potential. Abstract B049-0008, presented at 2020 Fall Meeting, AGU, Online, 1-17 Dec.
15. *George, Camaron, *J. Vincent and A.M. Wilson (2020) Estimating submarine groundwater discharge to continental shelves. Abstract OS041-02, presented at 2020 Fall Meeting, AGU, Online, 1-17 Dec.
16. **Invited** Wilson, AM (2020) The hydrogeology of passive continental margins: An evolving conceptual model. Geological Society of America *Abstracts with Programs*. Vol 52, No. 6, 2020 doi: 10.1130/abs/2020AM-356667.
17. Xiao, Kai et al. (2020) Impacts of crab burrow on exchange of inorganic and organic carbon across the interface of water column and sediments in salt marshes, EGU2020-4436, Session GM6.1 – Coastal wetlands: Processes, interactions, management.
18. Wilson, AM, *CM George, WS Moore, *J Vincent, and SM White (2019) A new model for submarine groundwater discharge. Abstract H52B-04, presented at 2019 Fall Meeting, AGU, San Francisco, 9-13 Dec.
19. *Vincent, J, and AM Wilson (2019) Detecting SGD, hyporheic/hypokymatic flow, and sediment transport in coastal environments using low-cost and opensource tooling. Abstract H53I-1859, presented at 2019 Fall Meeting, AGU, San Francisco, 9-13 Dec.
20. Williams, Toni, and AM Wilson (2019) Informational Technology and Middle School Girls: Learning the Codes for Summer, AMLE19 (Annual Conference for Middle Level Education), November 7-9, 2019 in Nashville, TN.
21. Wilson, AM, *M Shanahan, and EM Smith (2019) Groundwater exports of DOC from Salt Marshes: A survey of South Carolina tidal creeks. 2019 GSA Southeastern Section Meeting. Geological Society of America *Abstracts with Programs.* Vol. 51, No. 3. doi: 10.1130/abs/2019SE-327621.
22. **Invited** Wilson, AM (2018) Heat as a tracer for submarine groundwater discharge. Geological Society of America *Abstracts with Programs*. Vol 50, No. 6, ISSN 0016-7592, doi: 10.1130/abs/2018AM-323559

23. *George, CM, AM Wilson, WS Moore, SM White, and E Smoak (2018) Submarine groundwater discharge to the continental shelf in the South Atlantic Bight. Geological Society of America Abstracts with Programs. Vol. 50, No. 6, ISSN 0016-7592, doi: 10.1130/abs/2018AM-323695
24. Wilson, AM, M Shanahan* and EM Smith (2018) How does coastal development impact groundwater quality surrounding tidal creeks? Presented at the 6th South Carolina Water Resources Conference, Oct 17-18, 2018, Columbia SC.
25. Wilson, AM, M. Shanahan* and EM Smith (2018) Groundwater exports of DOC from tidal marshes: A survey of South Carolina Tidal Creeks. Abstract B42C-07, presented at 2018 Fall Meeting, AGU, Washington, DC, 10-14 Dec.
26. **Invited** Wilson, A.M. (2017) Hydrologic variability in coastal wetlands: Using current observations to predict the future. Symposium on Coastal Resources and Environment (CORE2017), Oct 28-29, Nanjing, China
27. *Shanahan, Meghan, and Alicia M. Wilson, Erik M. Smith (2017), Impact of coastal development and marsh width variability on groundwater quality in estuarine tidal creeks, Abstract H43J-1781 presented at 2017 Fall Meeting, AGU, New Orleans, LA, 11-15 Dec.
28. *George, Camaron, and Alicia Wilson, Willard Moore, Scott White, Erin Smoak (2017), Submarine groundwater discharge to the continental shelf in the South Atlantic Bight. Geological Society of America Abstracts with Programs. Vol. 49, No. 6. doi: 10.1130/abs/2017AM-303862
29. *George, C.P., A.M. Wilson, W.S. Moore, S.M. White, and E Smoak (2016) Submarine groundwater discharge to the continental shelf in the South Atlantic Bight. Abstract EP21B-0885 presented at the 2016 Fall Meeting, AGU, San Francisco, CA, 12-16 Dec.
30. *Evans, T, and A.M. Wilson (2016) Groundwater transport and the freshwater-saltwater interface below sandy beaches. 2016 GSA Southeastern Section Meeting. Geological Society of America *Abstracts with Programs.* Vol. 48, No. 3. doi: 10.1130/abs/2016SE-273623
31. *George, C.P., E. Smoak, A.M. Wilson, S.M. White, and W.S. Moore (2016) Submarine groundwater discharge to the continental shelf in the South Atlantic Bight. 2016 GSA Southeastern Section Meeting. Geological Society of America *Abstracts with Programs.* Vol. 48, No. 3. doi: 10.1130/abs/2016SE-273724
32. *Hughes, A.L.H., A.M. Wilson, and W.S. Moore (2016) Groundwater transport and radium variability in coastal porewaters. 2016 GSA Southeastern Section Meeting. Geological Society of America *Abstracts with Programs.* Vol. 48, No. 3. doi: 10.1130/abs/2016SE-273951
33. Wilson, A.M. (2016) How does sea level rise affect salt marsh hydrogeology and submarine groundwater discharge (SGD)? 2016 GSA Southeastern Section Meeting. Geological Society of America *Abstracts with Programs.* Vol. 48, No. 3. doi: 10.1130/abs/2016SE-273728
34. Wilson A.M. and W.B. Savidge (2016) A new heat tracer method to complement Ra-Rn methods for porewater transport. 6th International Ra-Rn workshop. https://sites.google.com/site/rarngirona/abstracts
35. *George, C.P., A.M. Wilson, W.S. Moore, S.M. White, and E Smoak (2016) Submarine groundwater discharge to the continental shelf in the South Atlantic Bight. Abstract EC53B-04 presented at the 2016 Ocean Sciences Meeting, New Orleans LA, 21-26 Feb.
36. Angel, A., Bodnar, R.J., and Wilson, A.M. (2016) The Role of the Cryosphere in Earth's Geohydrologic Cycle in Deep Time, *Goldschmidt Conference*, Yokohama, Japan.

37. Smoak, E., S.M. White, and A.M. Wilson (2015) Depositional environments during sea-level rise based on paleochannel fill offshore Charleston, SC. Geological Society of America *Abstracts with Programs*. Vol. 47, No. 7, p. 266.
38. **Invited** Wilson, A.M. (2015a) How far can we stretch the concept of a watershed? Groundwater-seawater exchange far from shore. Geological Society of America *Abstracts with Programs.* Vol. 47, No. 7, p. 411.
39. Wilson, A.M. (2015b) How does sea level rise affect salt marsh hydrogeology? Implications for ecological zonation and nutrients. Abstracts, 25th Biennial Conference of the Coastal and Estuarine Research Federation.
40. **Invited** Wilson, A.M. (2014) Regional groundwater flow and energy resources: New challenges in continental shelves. Geological Society of America Abstracts with Programs, Vol. 46, No. 6, p. 230.
41. *Evans, T.B., S.M. White and A.M. Wilson (2014) Position of the freshwater-saltwater interface in a coastal confined aquifer. Abstract H23D-0912 (#22555) presented at the 2014 Fall Meeting, AGU, San Francisco, CA, 15-19 Dec.
42. S.M. White, W.S. Moore, E. Smoak, *C. George and A.M. Wilson (2014) Fluid Exchange Across the Seafloor of the Continental Shelf in the South Atlantic Bight. Abstract H23D-0907 (#16023) presented at the 2014 Fall Meeting, AGU, San Francisco, CA, 15-19 Dec.
43. M.C. Marvin-DiPascuale, L.M. Windham-Myers, A.M. Wilson, T. Buck, and E. Smith (2014) The influence of coastal wetland zonation on surface sediment and porewater mercury speciation. Abstract OS53E-1092 (#6839) presented at the 2014 Fall Meeting, AGU, San Francisco, CA, 15-19 Dec.
44. M.C. Marvin-DiPascuale, L.M. Windham-Myers, A. Wilson, T. Buck, and E. Smith (2014) The Influence of Coastal Wetland Zonation on Surface Sediment and Porewater Mercury Speciation. 2014 NERRS/NERRA Annual Meeting, November 17 – 21, 2014, Shepherdstown, WV.
45. *Hughes, A.H., and A.M Wilson (2014) Groundwater transport and radium variability in coastal porewaters. Geological Society of America Abstracts with Programs, Vol. 46, No. 6, p. 481.
46. Wilson, A.M. and W.S. Savidge (2014) USING HEAT AS A TRACER TO QUANTIFY TRANSIENT FLUSHING BELOW THE SEDIMENT-WATER INTERFACE IN A SANDY CONTINENTAL SHELF. Geological Society of America Abstracts with Programs, Vol. 46, No. 6, p. 479.
47. Wilson, A.M., A.H. Hughes, and W.S. Moore (2013) Radium isotopes as tracers for groundwater-surfacewater interactions in tidally-influenced creeks. Geological Society of America *Abstracts with Programs.* Vol. 45, No. 7, p.196.
48. *Evans, Tyler, A.M. Wilson, W.S. Moore (2013) Salinity and groundwater flow below beaches, Abstract 1802427 presented at 2013 Fall Meeting, AGU, San Francisco, CA, 9-13 Dec.
49. *Hughes, A.L., A.M. Wilson (2013) Improving radium-based tracer techniques: Hydrologic controls on porewater radium activity, Abstract 1817479 presented at 2013 Fall Meeting, AGU, San Francisco, CA, 9-13 Dec.
50. *Peurifoy, J. Brad, A.M. Wilson (2013) Quantifying relative changes in SGD in response to fluctuations in tidal amplitude and MSL from a fringing marsh system, North Inlet, SC, Abstract presented at 2013 Fall Meeting, AGU, San Francisco, CA, 9-13 Dec.
51. Wilson, A.M., W.S. Moore, T.B. Evans, S.B. Joye, C.S. Schutte (2013) Groundwater controls on ecological zonation in the U.S. Southeast. H33I-02. Abstract presented at the 2013 Fall Meeting, AGU, San Francisco, CA, 9-13 Dec.

Seminars and Other Invited Talks (Since 2010)

2024
1. "Subseafloor Hydrogeology: Moving beyond watersheds" **Keynote**, Washington Hydrogeology Symposium. April 22, 2024, Seattle WA.
2. "Saline submarine groundwater discharge, continental shelves, and seawater chemistry" June 12, 2024, I**nvited**, Ocean Carbon Biogeochemistry Meeting (OCB2024), Woods Hole, MA
3. Saline submarine groundwater discharge, continental shelves, and seawater chemistry. University of Connecticut Dept of Marine Sciences seminar series. Oct 11, 2024.

2023
4. **38 Darcy Lectures** Dec 4, 2022 through Dec 1, 2023 at institutions spanning North America, China (virtual), Spain, and the UK. 29 in-person lectures. (Itinerary available on request.)

2022
5. Submarine groundwater discharge far from shore: How far is far? International Virtual SGD Seminar Series, Oct 25, 2022

2018
6. Groundwater flow and intertidal wetlands: Ecohydrology, Submarine Groundwater Discharge, and Sea Level Rise. Presented at the 2018 Indo-US Bilateral Workshop: Coastal Groundwater Dynamics: Combining Future Climate Change and Human Development, Pondicherry University, Puducherry (Pondicherry), India, June 7-9, 2018.

2017
7. Hydrologic variability in coastal wetlands: using current observations to predict the future Symposium on Coastal Resources and Environment (CORE2017), Hohai University, Nanjing, China. Oct 28, 2017.
8. Onshore-Offshore Drilling and Sampling to Understand Freshwater Resources along the New England continental Shelf: an IODP-ICDP Workshop. Woods Hole Oceanographic Institute. May 22, 2017

2016
9. Florida International University, Department seminar. January 29, 2016

2013
10. University of Georgia, Dept. Marine Sciences March 4, 2013
11. Virginia Tech, Department of Geology March 29, 2013
12. Clemson University, Dept. Environmental Engineering and Earth Science April 19, 2013
13. University of Missouri, Dept. Geological Sciences Oct 11, 2013

2012
14. University of South Carolina, Dept. Mechanical Engineering , "The residence time of porefluids in deep sedimentary basins: Can you conduct a tracer test over millions of years?" Nov 9, 2012

2011
15. USGS Water Resources Discipline Research Seminar (Western Regional Headquarters, Menlo Park; "Hydrologic variability and the hydrogeology of salt marshes: Some insights from field and modeling studies." March 3, 2011. Video streamed nationally and archived at http://wwwrcamnl.wr.usgs.gov/wrdseminar/pastseminarsonvideo.htm
16. March 23, 2011: University of the Pacific, Earth, and Environmental Science Dept. Seminar, "Hydrogeology of salt marshes: Some insights from field and modeling studies"
17. April 7, 2011: UC Santa Barbara, Earth Science Dept Seminar. "Hydrologic variability and salt marsh ecosystems"
18. April 27, 2011, UC Santa Cruz, Dept Earth and Planetary Sciences (brown bag) "Groundwater flow and hydrologic variability in salt marshes."

2010
19. March 1, 2010: Skidaway Institute of Oceanography.
20. October 21, 2010: Rice University , Dept. Earth Science
21. November 17, 2010: Stanford University, Dept. Environmental Earth System Science

ADVISERS

M.S.: Prof. Steve Gorelick, Environmental Earth System Sciences, Stanford University
Ph.D.: Prof. Grant Garven, now at Tufts University
Post-doc: Dr. Ward Sanford, National Research Program, USGS Reston, Virginia
Post-doc: Profs. Patricia Holden and Arturo Keller, Bren School, UC Santa Barbara

STUDENTS ADVISED

Masters students:

1. Camille Rossiello (MS 2023)
2. Sophia Sanders (MS 2021)
3. Andrew Osborne (MS 2021)
4. Meghan Shanahan (MS 2018)
5. Carolyn Ryan (MS 2017)
6. Brad Peurifoy (MS 2013)
7. Joseph Anderson (MS 2010)
8. Alan Mehrzad (MEERM 2009)
9. Melissa Thornton (MS 2005)
10. Justin Scheidt (MS 2005)

Ph.D. Students:

1. Riliwan Aboiye (current, Geology)
2. Jacob Vincent (current, Geology)
3. Camaron George (current, Marine Science)
4. Tyler Evans (2016)
5. Andrea Hughes (2016)
6. Ipsita Gupta (2010)
7. Kai Xiao (visiting PhD student from China University of Geosciences Beijing, 9/15/2017 – 3/15/2018; returned as Baruch Visiting Scholar 7/17 – 8/28/2018)

PROFESSIONAL MEMBERSHIPS

AGU, GSA, AWG (Association for Women Geoscientists), AAAS

Selected USC Service (emphasizing last 5 years)

- 2020-2022 Director, School of the Earth, Ocean, and Environment
- 2017-2020 Associate Director, School of the Earth, Ocean, and Environment

Professional Service

- Advisory Committee for South Carolina SeaGrant Consortium Coastal Resilience Collective (CRC)
- External Review Committee, Auburn University PhD Program in Environmental Science, May 2022
- External Review Committee, University of New Hampshire Department of Earth Science, February 2020
- Kohout Award Selection Committee, GSA Hydrogeology Division, 2019 – 2021
- Nominating committee, GSA Hydrogeology Division, 2017-2019
- Chair, Geological Society of America Hydrogeology Division, 2016
- Geological Society of America Hydrogeology Division Management Board, 2013-2017
- Associate Editor, Water Resources Research 3/2014-3/2020
- NSF Panels: Hydrology Panel 2011, 2012, 2015; MG&G (pre-2010), Coastal SEES (2016)
- Geological Society of America Joint Technical Program Committee, Hydrogeology Division rep, 2010-2012 (Responsible for the Hydrogeology Div. technical program for the 2012 Annual meeting)
- Associate Editor, Hydrogeology Journal, 2005 - 2009
- Integrated Ocean Drilling Program Scientific Steering and Evaluation Panel (SSEP), 2005-2008
- Reviewer for NSF and other funding agencies
- Reviewer for many journals, particularly Water Resources Research and Journal of Hydrology.

Outreach and Outside Activities

- Founder and Director (with Dr. Toni Williams), Girls Go for I.T. Summer Camps (2014-2019) and Clubs

(2015-2016 school year). These coding camps and clubs were designed to attract middle-school girls to careers in IT and STEM fields, with discussions of pathways to college and field trips through the SEOE building to see the uses of IT in earth and environmental science. The camp served 40 campers each year with roughly 50% participation by underrepresented minorities.

- Director, Dent Gets I.T. Club (2015-2016 school year). This coding club was designed to attract middle-level students from a school (Dent Middle School) with a large population of underserved and underrepresented groups to careers in IT and STEM fields.