

Nathaniel B. Weston

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Education

2005 Ph.D. in Marine Science, University of Georgia
1997 B.A. in Environmental Science, Hampshire College

Professional Experience

Department Chair Department of Geography and the Environment, Villanova University, Villanova, PA	2019-present
Masters in Environmental Science Graduate Program Director Department of Geography and the Environment, Villanova University, Villanova, PA	2018-2019
Associate Professor Department of Geography and the Environment, Villanova University, Villanova, PA	2014-present
Assistant Professor Department of Geography and the Environment, Villanova University, Villanova, PA	2008-2014
Visiting Adjunct Professor Department of Biology, Villanova University, Villanova, PA	2007-2008
Postdoctoral Scientist Department of Biology, Villanova University, Villanova, PA	2006-2008
Postdoctoral Fellow Patrick Center for Environmental Research, The Academy of Natural Sciences, Philadelphia, PA	2005-2006

Peer-Reviewed Publications (Undergraduate student; ‡Graduate student; *Sponsored postdoc*)

‡Jezycki K.E., ‡Rodriguez E., Craft C.B., Neubauer S.C., Morris J.T., Goldsmith S.T., Kremer P., **Weston N.B.** 2024. Metal accumulation in salt marsh soils along the East Coast of the United States. *Science of the Total Environment*, 922: 171025.
<https://doi.org/10.1016/j.scitotenv.2024.171025>

- Hopkinson, C.S., **N.B. Weston**, W-J. Cai. 2024. Global change and Estuarine Carbon Dynamics. In: M.J. Kennish, H. W. Paerl, J.R. Crosswell, Eds. Climate Change and Estuaries. CRC Press.
- Richardson J.L., A.R. Desai, J. Thom, K. Lindgren, H. Laudon, M. Peichl, M. Nilsson, A. Campeau, J. Järveoja, P. Hawman, D.R. Mishra, D. Smith, B. D'Acunha, S.H. Knox, D. Ng, M.S. Johnson, J. Blackstock, S.L. Malone, S.F. Oberbauer, M. Detto, K.P. Wickland, I. Forbrich, **N.B. Weston**, J.K.Y. Hung, C Edgar, E.S. Euskirchen, S. Bret-Harte, J. Dobkowski, G. Kling, E.S. Kane, P. Badiou, M. Bogard, G. Bohrer, T. O'Halloran, J. Ritson, A. Arias-Ortiz, D. Baldocchi, P. Oikawa, J. Shahan, M. Matsumura. 2024. On the Relationship Between Aquatic CO₂ Concentration and Ecosystem Fluxes in Some of the World's Key Wetland Types. *Wetlands* 44: 1. <https://doi.org/10.1007/s13157-023-01751-x>
- Weston, N.B.**, E. Rodriguez[‡], B. Donnelly, E. Solohin[‡], K. Jezycki[‡], S. Demberger[‡], L. Sutter, J.T. Morris, S. Neubauer, and C.B. Craft. 2023. Recent acceleration of coastal wetland accretion. *Earth's Future*, 11, e2022EF003037. <https://doi.org/10.1029/2022EF003037>
- Sage, L., O. Bassetti, E. Johnson, K. Shakya, **N.B. Weston**. 2023. Assessment of heavy metal contamination in soil and produce of Philadelphia community gardens. *Environmental Pollutants and Bioavailability*, 35:1, 2209283, DOI: 10.1080/26395940.2023.2209283.
- Testa, J.M., C.S. Hopkinson, P.A. Stæhr, and **N.B. Weston**. 2022. Estuarine Ecosystem Metabolism. In: B.C. Crump, J.M. Testa, K.H. Dunton, Eds. Estuarine Ecology, 3rd Edition. Wiley.
- Morris, J.T., D.R. Cahoon, J.C. Callaway, C. Craft, S.C. Neubauer, and **N.B. Weston** (2021) Marsh Equilibrium Theory: Implications for response to rising sea-level. In: Fitzgerald, D.M., and Hughes, Z.J., Eds. Salt Marshes. Cambridge University Press.
- Tully K., K. Gedan, R. Epanchin-Niell, A. Strong, E. Bernhardt, T. BenDor, M. Mitchell, J. Kominoski, T. Jordan, S.C. Neubauer, and **N.B. Weston**. 2019. The invisible flood: The chemistry, ecology, and social implications of coastal saltwater intrusion. *BioScience* 69: 368-378.
- Paudel, B., **N.B. Weston**, J. O'Connor, L. Sutter, and D.J. Velinsky. 2017. Phosphorus dynamics in the water column and sediments of Barnegat Bay, New Jersey. *Journal of Coastal Research* 78: 60-69.
- Kearns, P.J., **N.B. Weston**, J.L. Bowen, T. Živković, and M.A. Vile. 2016. Tidal freshwater marshes harbor phylogenetically unique clades of sulfate reducers that are resistant to climate-change induced salinity intrusion. *Estuaries and Coasts* 39: 981-991.

- Sutter, L.A., **N.B. Weston** and S.T. Goldsmith. 2015. Hydraulic fracturing: Potential impacts to wetlands. *Wetland Science & Practice* 32: 7-16.
- Weston, N.B.**, S.C Neubauer, D.J. Velinsky and M.A. Vile. 2014. Net ecosystem carbon exchange and the greenhouse gas balance of tidal marshes along an estuarine salinity gradient. *Biogeochemistry* 120: 163-189.
- Weston, N.B.** 2014. Declining sediments and rising seas: An unfortunate convergence for tidal wetlands. *Estuaries and Coasts* 37: 1-23.
- Porubsky, W.P., **N.B. Weston**, W.S. Moore, C. Ruppel and S.B. Joye. 2014. Dynamics of submarine groundwater discharge (SGD) and associated fluxes of dissolved nutrients, carbon, and trace gases to the coastal zone (Okatee River estuary, South Carolina). *Geochimica et Cosmochimica Acta*. 131: 81-97.
- Giblin, A.E., C. Tobias, B. Song, **N.B. Weston**, G.T. Banta and V. Rivera-Monroy. 2013. The importance of dissimilatory nitrate reduction to ammonium (DNRA) in the nitrogen cycle of coastal ecosystems. *Oceanography* 26: 124-131.
- Weston, N.B.**, M.A. Vile, D.J. Velinsky and S.C. Neubauer. 2011. Accelerated microbial organic matter mineralization following salt-water intrusion into tidal freshwater marsh soils. *Biogeochemistry* 102: 135-151.
- Weston, N.B.**, A.E. Giblin, G. Banta, C.S. Hopkins and J. Tucker. 2010. The effects of varying salinity on ammonium exchange in estuarine sediments of the Parker River, Massachusetts. *Estuaries and Coasts* 33: 985-1003.
- Giblin, A.E., **N.B. Weston**, G.T. Banta, J. Tucker and C.S. Hopkins. 2010. The effects of salinity on nitrogen losses from an oligohaline estuarine sediment. *Estuaries and Coasts* 33: 1054-1068.
- Porubsky, W.P., **N.B. Weston**, and S.B. Joye. 2009. Benthic metabolism and the fate of dissolved inorganic nitrogen in intertidal sediments. *Estuarine, Coastal and Shelf Science* 83: 392-402.
- Edmonds, J.W. **N.B. Weston**, S.B. Joye, X. Mou and M.A. Moran. 2009. Microbial community response to seawater amendment in low-salinity tidal sediments. *Microbial Ecology* 58: 558-568.
- Weston, N.B.**, J.T. Hollibaugh and S.B. Joye. 2009. Population growth away from the coastal zone. Thirty years of land use change and nutrient export in the Altamaha River, GA. *Science of the Total Environment* 407: 3347-3356.
- Edmonds, J.W., **N.B. Weston**, S.B. Joye and M.A. Moran. 2008. Variation in prokaryotic community composition as a function of resource availability in tidal creek sediments. *Applied and Environmental Microbiology* 74: 1836-1844.
- Weston, N.B.**, S.B. Joye, W.P. Porubsky, V. Samarkin, M. Erickson and S.E. MacAvoy. 2006a. Porewater stoichiometry of terminal metabolic products, sulfate, and

dissolved organic carbon and nitrogen in estuarine intertidal creek-bank sediments. *Biogeochemistry* 77: 375-408.

Weston, N.B., R.E. Dixon and S.B. Joye. 2006b. Ramifications of increased salinity in tidal freshwater sediments: Geochemistry and microbial pathways of organic matter mineralization. *Journal of Geophysical Research - Biogeosciences* 111: G01009.

Weston, N.B. and S.B. Joye. 2005. Temperature-driven decoupling of key phases of organic matter degradation in marine sediments. *Proceedings of the National Academy of Sciences* 102: 17036-17040.

Published Conference Proceedings (Undergraduate student)

Joye, S.B., W.P. Porubsky, **N.B. Weston**, and R.Y. Lee. 2003. Benthic microalgal production and nutrient dynamics in intertidal sediments. In: Rullkötter, J. (Ed.), BioGeoChemistry of Tidal Flats, Proceedings of a Workshop held at the Hanse Institute of Advanced Study, Delmenhorst, Germany, May 14-17, 2003. Forschungszentrum Terramare Berichte 12: 67-70.

Weston, N.B., J.T. Hollibaugh, J. Sandow and S.B. Joye. 2003. Nutrients and dissolved organic matter in the Altamaha river and loading to the coastal zone. *Proceedings of the 2003 Georgia Water Resources Conference*, held April 23-24, 2003, at the University of Georgia. Kathryn J. Hatcher, editor, Institute of Ecology, The University of Georgia, Athens, Georgia.

Schmitt, C., **N.B. Weston** and C. Hopkinson. 1998. Preliminary evaluation of sedimentation rates and species distribution in Plum Island Estuary, Massachusetts. *Biological Bulletin* 195:232-233.

Weston, N.B., S. Carini, A. Giblin, G. Banta, C. Hopkinson and J. Tucker. 1996. Estimating denitrification in sediments of the Parker River estuary, Massachusetts. *Biological Bulletin* 191: 334-335.

Carini, S., **N.B. Weston**, C. Hopkinson, J. Tucker, A. Giblin and J. Vallino. 1996. Gas exchange rates in the Parker River estuary, Massachusetts. *Biological Bulletin* 191: 333-334.

Manuscripts in Review (Undergraduate student; †Graduate student; *Sponsored postdoc*)

Manuscripts in Preparation (Undergraduate student; †Graduate student; *Sponsored postdoc*)

Weston, N.B., Cynthia Troy, William Porubsky, Christelle Hyacinth†, Christof Miele, Phillip Van Cappellen, and Samantha B. Joye. Controls on nitrous oxide production

in soils and sediments: The role of stress. In preparation for *Soil Biology and Biochemistry*.

Weston, N.B. and C.H. Hopkinson. Long-term trends in estuarine ecosystem metabolism in Plum Island Sound, MA. In preparation for *Limnology and Oceanography*.

Weston, N.B., L. Sutter. Marsh plant response to sea-level rise and salt-water intrusion along an estuarine salinity gradient. In preparation for *Ecology*.

‡Rodriguez E, Jezycki K, Solohin E, Donnelly B, Craft C, Neubauer SC, Morris JT, Kremer P, **Weston NB**. Land cover change and rates of marsh vertical accretion along the U.S. East Coast. In preparation for *Journal of Geophysical Research*.

‡Davis A, Strader S, Kremer P, Morris JT, **Weston NB**. Examining marsh extent under various scenarios of sea level rise and sediment supply: Identifying potential risks to coastal communities. In preparation for submission to *Estuaries and Coasts*.

Zawatski M, Forbrich I, Weston NB. Carbon exchange in a heterogeneous New England salt marsh. In preparation for *Estuaries and Coasts*.

‡Jezycki K, Craft C, Solohin E, **Weston NB**. History of heavy metal delivery to the U.S. East Coast as recorded in salt-marsh soils. In preparation for *Environmental Science and Technology*.

Weston NB, Forbrich I, Sutter L, Donnelly B. The lateral exchange of carbon, nitrogen, and sediment in tidal marshes of contrasting elevation. In preparation for *Limnology and Oceanography*.

Press Coverage of Research

American Geophysical Union Press Release, 2023.

(<https://news.agu.org/press-release/some-coastal-salt-marshes-are-keeping-up-with-sea-level-rise-for-now/>)

The Working Waterfront, 2023.

(<https://www.islandinstitute.org/working-waterfront/a-delicate-dance-between-sea-and-land/>)

Research that Resonates podcast, 2019.

(<https://www1.villanova.edu/villanova/artsci/newsevents/podcast.html>)

Villanova Magazine cover article. 2014.

(<http://villanovamagazine.villanova.edu/i/377959-fall-2014>)

Coastal and Estuarine Science News, 2013.

(<http://www.erf.org/cesn-october-2013#Muddywaters>)

Science Nation, 2011.

(http://www.nsf.gov/news/special_reports/science_nation/marshescoasts.jsp)

External Research Grants Funded

PIs: N.B. Weston
Title: Proposal for Monitoring Surface Elevation Tables, Marker Horizons, and Vegetation at the Rancocas, Raccoon, Salem, Stow, Dennis, and Dividing Tidal Wetland Sites in the Delaware River
Funding Agency: New Jersey Department of Environmental Protection
Amount: \$14,652
Dates: 01/23-12/23

PIs: Giblin, A.E., W. Wollheim, J.W. McClelland, J.L. Bowen, J.A. Nelson, N.B. Weston
Title: LTER: Plum Island Ecosystems, the impact of changing landscapes and climate on interconnected coastal ecosystems
Funding Agency: National Science Foundation, Long Term Ecological Research Program
Amount: \$361,815 to Villanova (\$7,649,999 total project)
Dates: 10/22-9/28

PIs: Sutter, L., N.B. Weston, D. Mishra, Y. Hashida
Title: Evaluating risk of tidal marsh inundation and monetizing services to prioritize management actions
Funding Agency: National Oceanographic and Atmospheric Administration
Amount: \$219,191 to Villanova (\$1,420,729 total project)
Dates: 10/22-11/25

PIs: Weston, N.B., S. Goldsmith, M. Vile, R.K. Wieder
Title: MRI: Acquisition of an Inductively Coupled Plasma Mass Spectrometer (ICP-MS) for Ecological, Environmental, and Ecosystem-Level Research
Funding Agency: National Science Foundation, Major Research Instrumentation
Amount: \$286,947
Dates: 8/17-7/22

PIs: Giblin, A.E., W. Wollheim, N.B. Weston, J. Vallino, L. Deegan
Title: LTER-Plum Island Ecosystems: Dynamics of coastal ecosystems in a region of rapid climate change, sea-level rise, and human impacts
Funding Agency: National Science Foundation, Long Term Ecological Research Program
Amount: \$348,176 to Villanova (\$6,761,476 total project)
Dates: 1/17-12/22

PIs: Weston, N.B., S. Neubauer, J. Morris, C. Craft

Title: RUI: Human alteration of sediment delivery to the coast – Legacies of land use, coastal wetland accretion, and future vulnerability to sea level rise

Funding Agency: National Science Foundation

Amount: \$331,649 to Villanova (\$665,661 total project)

Dates: 8/15-7/19

PIs: Velinsky, D.J., Weston, N.B.

Title: Phosphorus cycling in Barnegat Bay

Funding Agency: New Jersey Department of Environmental Protection

Amount: \$28,000 to Villanova (\$100,000 total project)

Dates: 6/14-6/15

PIs: Goldsmith, ST., N.B. Weston, D. Velinsky, J. Mead

Title: Establishing a Link between Hydraulic Fracturing Activities and Streamwater Impacts in North-Central Pennsylvania

Funding Agency: Pennsylvania Sea Grant

Amount: \$67,913

Dates: 1/13-12/13

PIs: Hopkinson, C.S., M.A. Alber, N.B. Weston, A.E. Giblin

Title: Determining the effects of land use and climate change on estuarine metabolism: development of a new method for analyzing macro-tidal coastal systems

Funding Agency: YSI Minding the Plant Competition

Amount: \$10,778

Dates: 1/11-1/12

PIs: Weston, N.B.

Title: Delaware Estuary Tidal Wetlands Monitoring

Funding Agency: Academy of Natural Sciences of Philadelphia (subcontract)

Amount: \$20,000

Dates: 9/10 – 7/12

PIs: Weston, N.B. and M.A. Vile

Title: RUI: Integrating the Effects of Sea Level Rise on Tidal Freshwater and Salt Marsh Stability in the Delaware River Estuary

Funding Agency: National Science Foundation

Amount: \$283,589

Dates: 1/10 – 12/12

Internal Grants

PIs: Weston, N.B.
Title: The Future of "Blue Carbon" in the Delaware River Estuary
Funding Agency: Villanova University Summer Research Fellowship and Research Support Grant
Amount: \$12,450
Dates: 6/18-8/18

PIs: Weston, N.B.
Title: Assessing radioactive and trace metal contamination of streams by natural gas extraction activities in the Marcellus Shale
Funding Agency: Villanova University Summer Research Fellowship and Research Support Grant
Amount: \$12,450
Dates: 6/13-8/13

PIs: Weston, N.B.
Title: The Impacts of Climate Change and Sea Level Rise on Tidal Freshwater Marshes of the Delaware River Estuary
Funding Agency: Villanova University Summer Research Fellowship and Research Support Grant
Amount: \$11,350
Dates: 6/10-8/10

Teaching Grants and Student Funding (Undergraduate Student; ‡Graduate Student)

Polakiewicz, C. 2023. Villanova Undergraduate Research Fellowship (\$3500)
‡Baker, P. 2023. Villanova University Graduate Summer Research Fellowship (\$3000)
‡Leach, I. 2022. Department of Geography and the Environment Graduate Research Opportunity Fellowship (\$3000)
‡Shimon, M. 2020. Villanova University Graduate Summer Research Fellowship (\$3000)
Curren, G. 2019-2020. Beckman Scholarship (\$23,200)
Stumpf, A. 2019. Society of Wetland Scientists Research Support Grant (\$1000)
Stumpf, A. 2019. Department of Geography and the Environment Graduate Summer Research Fellowship (\$3000)
Jezycki, K. 2018. Villanova University Graduate Summer Research Fellowship (\$3000)
Weston, N.B. 2018. Research Experience for Undergraduates (REU) Supplemental Funding. National Science Foundation. (\$7000)

Shakya, K. and N.B. Weston. 2017. Determination of aldehydes and ketones in drinking water from a variety of storage containers by HPLC. Villanova University Freshman Match Program.

‡Zawatski, M. 2017. The Wetland Foundation travel grant to attend the Society of Wetland Scientists' annual meeting (\$1400)

‡Zawatski, M. 2017. Villanova University Graduate Summer Research Fellowship (\$3000)

‡Rodriguez, E. 2017. Department of Geography and the Environment Graduate Summer Research Fellowship (\$3000)

Lampasona, D. 2017. Villanova Undergraduate Research Fellowship (\$3000)

‡Zawatski, M. 2016. North American Carbon Project and Ameriflux travel funding (\$1500)

Jordan, M. 2016. Villanova Undergraduate Research Fellowship (\$3000)

Stephens, J. 2010. Villanova Undergraduate Research Fellowship (\$3000)

Patson, M. 2009. Villanova Undergraduate Research Fellowship (\$3000)

Selected Conference Presentations (Undergraduate Student; ‡ Graduate Student; *Sponsored Postdoc*)

Weston, N.B., W. Wollheim, C. Hopkinson. 2023. Three Decades of Estuarine Metabolism in the Parker River / Plum Island Sound Estuary. Coastal and Estuarine Research Federation, Portland, OR (Poster Presentation).

Johnson, E., N.B. Weston. 2023. Influence of marsh elevation and geomorphology on current and future sediment delivery and deposition. Coastal and Estuarine Research Federation, Portland, OR (Oral Presentation).

Weston, N.B. 2023. Sediment Supply and Tidal Wetland Response to Sea-Level Rise Along the U.S. East Coast. Department of Earth, Geographic, and Climate Sciences, University of Massachusetts, Amherst, MA (Oral Presentation – *Invited*).

Weston, N.B. 2023. Sediment Supply and Tidal Wetland Response to Sea-Level Rise Along the U.S. East Coast. Department of Biology, University of North Carolina Wilmington, Wilmington, NC (Oral Presentation – *Invited*).

Weston, N.B., C.S. Hopkinson, W. Wollheim. 2023. Three Decades of Estuarine Metabolism in the Parker River / Plum Island Sound Estuary. Coastal and Estuarine Research Federation, Portland, OR (Poster Presentation).

Johnson, E., N.B. Weston. 2023. Influence of marsh elevation and geomorphology on current and future sediment delivery and marsh deposition. Coastal and Estuarine Research Federation, Portland, OR (Oral Presentation).

Hopkinson, C.S., N.B. Weston. 2023. Comparative metabolism and blue carbon sequestration of two wetland-dominated estuaries. American Society of Limnology and Oceanography. Mallorca, Spain (Oral Presentation).

Weston, N.B. 2022. Recent acceleration of accretion in tidal marshes along the U.S. East Coast. Georgia Coastal Ecosystems All Scientists Meeting (Oral Presentation).

Weston, N.B. 2022. Lateral Exchange of Carbon, Nutrients, and Sediment at Different Scales. Plum Island LTER All Scientists Meeting (Oral Presentation).

Testa, J., C. Hopkinson, P. Stæhr, N.B. Weston. 2021. Communicating the concept of ecosystem metabolism. Coastal and Estuarine Research Federation (Oral Presentation - virtual).

- Forbrich, I., N.B. Weston, J. Tamborski. 2021. Temporal and spatial variability in carbon fluxes how do we estimate the contemporary marsh NECB? Coastal and Estuarine Research Federation (Poster Presentation - virtual).
- Johnson, E. N. B Weston. 2021. Salt Marsh Response to Changing Climate: Investigating Ecosystem Function in High- and Low Elevation Marshes. Delaware Estuary Science and Environmental Summit (Oral Presentation - virtual)
- Eastment, L., N.B. Weston. 2021. A finished mug of coffee, an unfished story: Caffeine in estuarine waters. Plum Island LTER All Scientists Meeting (Oral Presentation)
- Johnson, E., N.B. Weston. 2021. Ecosystem function in high and low elevation marshes. Plum Island LTER All Scientists Meeting (Oral Presentation)
- Giordano, G. N.B. Weston 2020. Heavy metals in Plum Island soils and marsh sediments. Plum Island LTER All Scientists Meeting (Oral Presentation)
- Weston, N.B. 2019. The response of coastal marshes to accelerating sea-level rise and changes in sediment supply. Temple University (Oral Presentation).
- ‡Demberger, S., N.B. Weston, C. Craft, E. Rodriguez, K. Jezycki. 2019. Carbon and nitrogen sequestration: Identifying drivers and monetizing sequestration. Coastal and Estuarine Research Federation, Mobile, AL (Oral Presentation)
- ‡Stumpf, A., N. Weston, L.A. Sutter. 2019. Tidal marsh response to sediment deposition from seasonal storms. Coastal and Estuarine Research Federation, Mobile, AL (Poster Presentation)
- Weston, N.B., I. Forbrich, M. Zawatski, L. Sutter, B. Donnelly, M. Jordan. 2019. Vertical and lateral exchange of carbon, nitrogen, and sediment in tidal marshes of contrasting elevation. Coastal and Estuarine Research Federation, Mobile, AL (Oral Presentation)
- ‡Stumpf, A., N. Weston, L.A. Sutter. 2019. Fate of sediment from seasonal storm deposition events. Ecological Society of America, Louisville, KY (Poster).
- Hopkinson, C., N.B. Weston, 2019. Comparative metabolism of two wetland-dominated estuaries. Coastal and Estuarine Research Federation, Mobile, AL (Oral Presentation).
- ‡Stumpf, A., N. Weston, L.A. Sutter. 2019. Fate of sediment from seasonal storm deposition events. Ecological Society of America, Louisville, KY (Poster).
- ‡Jezycki, K., N.B. Weston. 2019. Assessing heavy metal pollution in estuarine systems along the eastern United States in relation to land use changes. Atlantic Estuarine Research Society, Woodbridge, VA (Oral Presentation).
- ‡Cento, M., N.B. Weston. 2019. The effect of saltwater intrusion on methane production and consumption processes in tidal freshwater wetlands. Atlantic Estuarine Research Society, Woodbridge, VA (Oral Presentation).
- Weston N.B., J. Bowen, P. Kearns, C. Troy, W. Porubsky, C. Hyacinthe, C. Meile, P. Van Cappellen, and S. Joye. 2018. The role of physicochemical perturbation on denitrification and nitrous oxide production. Society of Wetland Scientists, Denver, CO (Oral Presentation).
- ‡Davis, A., N.B. Weston. 2018. Examining Marsh Extent Under Various Scenarios of Sea Level Rise and Sediment Supply, and Identifying Potential Risks to Coastal Communities. Atlantic Estuarine Research Society, Rehoboth Beach, DE (Oral Presentation).

- †Rodriguez, E., N.B. Weston. 2018. Land Use Impacts on Mineral Sediment Delivery and Accretion Rates in Tidal Wetlands. Atlantic Estuarine Research Society, Rehoboth Beach, DE (Oral Presentation).
- †Zawatski, M., N.B. Weston. 2018. Modeling carbon cycling in salt marshes as a driver of marsh resilience to sea level rise. Atlantic Estuarine Research Society, Rehoboth Beach, DE (Oral Presentation).
- †Rodriguez, E., N.B. Weston, C. Craft, E. Solohin. 2017. Land use impacts on mineral sediment delivery and accretion rates in tidal wetlands. Coastal and Estuarine Research Federation, Providence, RI (Poster).
- †Zawatski, M., N.B. Weston. 2017. Carbon dynamics in the face of sea-level rise in salt marshes of Plum Island, MA. Coastal and Estuarine Research Federation, Providence, RI (Poster).
- Lampasona, D., N.B. Weston. 2017. Creating digital elevation models and vegetation classification systems to determine marsh response. Coastal and Estuarine Research Federation, Providence, RI (Poster).
- Weston, N.B., M.A. †Zawatski, M. Jordan, D. Lampasona, B. Donnelly, and *L. Sutter*. 2017. Atmospheric and lateral exchange of carbon, nitrogen, and sediment in tidal marshes of contrasting elevation. Coastal and Estuarine Research Federation, Providence, RI (Poster).
- †Zawatski, M., N.B. Weston. 2017. Carbon and sediment dynamics in salt marshes in Plum Island Sound Estuary, Massachusetts. Society of Wetland Scientists, San Juan, Puerto Rico (Oral Presentation).
- †Rodriguez, E., N.B. Weston. 2017. Land use impacts on mineral sediment delivery and accretion rates in tidal wetlands. Society of Wetland Scientists, San Juan, Puerto Rico (Oral Presentation).
- Weston, N.B. 2017. Alterations to tidal marsh biogeochemical cycling and greenhouse gas exchange in response to sea-level and salinity intrusion. SESYNC Workshop, Annapolis, MD (Oral Presentation - *Invited*).
- Forbrich, I., M. Zawatski†, B. Donnelly, N. Weston, A. Giblin, J. Tucker, C. Hopkinson. 2017. Analyzing ecosystem- and plot-scale CO₂ exchange in a heterogeneous New England salt marsh. North American Carbon Program, Bethesda, MD (Poster Presentation).
- †Zawatski, M., N.B. Weston. 2017. Carbon and sediment dynamics in salt marshes in Plum Island Sound Estuary, Massachusetts. Plum Island Ecosystem Long Term Ecological Research Conference, Woods Hole, MA (Poster Presentation).
- †Rodriguez, E., N.B. Weston. 2017. Land use impacts on mineral sediment delivery and accretion rates in tidal wetlands. Plum Island Ecosystem Long Term Ecological Research Conference, Woods Hole, MA (Poster Presentation).
- Weston, N.B. 2017. Creekshed-scale import and export of sediment, nutrients, and carbon during tidal exchange. Plum Island Ecosystem Long Term Ecological Research Conference, Woods Hole, MA (Oral Presentation).
- Weston, N.B., S. Neubauer, D.J. Velinsky, M.A. Vile. 2017. Net ecosystem carbon exchange and the greenhouse gas balance of tidal marshes along the salinity gradient in the Delaware River Estuary. Delaware Estuary Science and Environmental Summit, Cape May, NJ (Oral Presentation).

- ‡Zawatski, M., N.B. Weston. 2016. Carbon and sediment dynamics in salt marshes in Plum Island Sound Estuary, Massachusetts. Atlantic Estuarine Research Society, Baltimore, MD (Oral Presentation).
- Donnelly, B.R., N.B. Weston. 2016. Microbial iron reduction rates along a salinity gradient in Gulf-Coast, Mid-Atlantic, and Northeastern wetland ecosystems. Atlantic Estuarine Research Society, Baltimore, MD (Oral Presentation).
- Weston, N.B. 2016. Carbon and sediment exchange between tidal marshes and estuarine waters. Atlantic Estuarine Research Society, Baltimore, MD (Oral Presentation).
- Lampasona, D., N.B. Weston. 2016. Respiration and potential denitrification in tidal marsh soils. Atlantic Estuarine Research Society, Baltimore, MD (Oral Presentation).
- Weston, N.B., J. Bowen, P. Kearns, C. Troy, W. Porubsky, C. Hyacinthe, C. Meile, P. Van Cappellen, S. Joye. 2016. Controls on nitrous oxide production in soils and sediments: The role of physicochemical stress. Bryn Mawr Global Change Research Symposium, Bryn Mawr, PA (Oral Presentation - **Invited**).
- O'Connor, J., N.B. Weston, B. Paudel, D Velinsky. 2016. Are sediments a source or sink of nutrients in Barnegat Bay, NJ? Atlantic Estuarine Research Society, Virginia Beach, VA (Oral Presentation).
- Weston, N.B., J. Bowen, P. Kearns, C. Troy, W. Porubsky, C. Hyacinthe, C. Meile, P. Van Cappellen, S. Joye. 2015. Controls on nitrous oxide production in soils and sediments: The role of physicochemical stress. Coastal and Estuarine Research Federation, Portland, OR (Oral Presentation).
- Sutter, L., N.B. Weston. 2015. Tidal marsh vegetation response to sea-level rise in the Delaware Bay Estuary. Coastal and Estuarine Research Federation, Portland, OR (Oral Presentation).
- Hartman, W., N.B. Weston, M. Ardon, E. Bernhardt, S. Neubauer, S. Theroux, S. Tringe. 2015. Is methane flux response to salinity in coastal marshes mediated by interactions with nitrogen cycling? Coastal and Estuarine Research Federation, Portland, OR (Oral Presentation).
- Paudel, B., D. Velinsky, N.B. Weston, G. Keighton. 2015. Phosphorus dynamics in the Barnegat Bay. Coastal and Estuarine Research Federation, Portland, OR (Oral Presentation).
- Weston, N.B. 2015. Alterations to marsh biogeochemical cycling and greenhouse gas exchange in response to sea-level rise and salinity intrusion. Ecological Society of America, Baltimore, MD (Oral Presentation – **Invited**).
- Weston, N.B. 2015. Declining sediments and rising seas: An unfortunate convergence for tidal wetlands. Bryn Mawr Global Change Research Symposium. Bryn Mawr, PA (Oral Presentation – **Invited**).
- Weston, N.B. 2013. Alterations to marsh carbon cycling and greenhouse gas exchange in response to sea-level and salt-water intrusion. American Geophysical Union, San Francisco, CA (Oral Presentation – **Invited**).
- Weston, N.B. 2013. Declining sediments and rising seas: An unfortunate convergence for tidal wetlands. Coastal and Estuarine Research Federation, San Diego, CA (Oral Presentation).

- ‡Bryan, Jennifer, L. Harris, N.B. Weston. 2013. Morphological changes and sediment capture potential of *Zizania aquatica* under experimental inundation treatments. Coastal and Estuarine Research Federation, San Diego, CA (Oral Presentation).
- Wister, K.H., N.B. Weston, M.K. Haggerty, B.R. Donnelly, S.C. Alesi, T.N. Iaria, S.T. Goldsmith. 2013. Evaluating a link between shale gas extraction activities and groundwater/societal impacts. The Geological Society of America, Denver, CO (Poster Presentation).
- Weston, N.B. 2013. Declining sediments and rising seas: An unfortunate convergence for tidal marshes. Virginia Commonwealth University, Department of Biology, Richmond, VA (Oral Presentation - **Invited**).
- Weston, N.B. 2013. Declining sediments and rising seas: An unfortunate convergence for tidal marshes. Plum Island Ecosystem Long Term Ecological Research All Scientists Meeting, Woods Hole, MA (Oral Presentation).
- Lang, M., N.B. Weston. 2013. Denitrification in tidal marshes along the salinity gradient in the Delaware River Estuary: Implications of salt water intrusion for an important ecosystem service. Plum Island Ecosystem Long Term Ecological Research All Scientists Meeting, Woods Hole, MA (Poster Presentation).
- Haggerty, M., N.B. Weston. 2013. The role of sediment deposition in predicting marsh response to sea-level rise. Plum Island Ecosystem Long Term Ecological Research All Scientists Meeting, Woods Hole, MA (Poster Presentation).
- Weston, N.B. 2013. Declining sediments and rising seas: An unfortunate convergence for tidal marshes. Drexel University, Department of Biodiversity, Earth, and Environmental Science, Philadelphia, PA (Oral Presentation - **Invited**).
- Weston, N.B. 2013. What's mud got to do with sea level rise? Sediment supply and marsh vulnerability to climate change. Delaware Estuary Environmental Summit Conference, Cape May, NJ (Oral Presentation).
- Lang, M., N.B. Weston. 2013. Denitrification in tidal marshes along the salinity gradient in the Delaware River Estuary: Implications of salt water intrusion for an important ecosystem service. Delaware Estuary Environmental Summit Conference, Cape May, NJ (Poster Presentation – **Best Student Poster Award**).
- Haggerty, M., N.B. Weston. 2013. The role of sediment deposition in predicting marsh response to sea-level rise. Delaware Estuary Environmental Summit Conference, Cape May, NJ (Poster Presentation).
- Weston, N.B. 2012. Production, Respiration, and Net Greenhouse Gas Exchange along an Estuarine Salinity Gradient: Evaluating the Influence of Sea-Level Rise and Salt-water Intrusion. American Geophysical Union Chapman Conference, Reston, VA (Oral Presentation – **Invited**).
- Weston, N.B. 2012. Response of Tidal Freshwater Marsh Plant and Microbial Communities in the Delaware River Estuary to Sea-Level Rise and Salt-Water Intrusion. Society of Wetland Scientists, Orlando, FL (Oral Presentation – **Invited**).
- Meschter, J.E. and N.B. Weston. 2012. Quantifying Soil Greenhouse Gas Emissions in Relation to Inundation and Microbial Respiration in Tidal Wetlands. Society of Wetland Scientists, Orlando, FL (Oral Presentation – **Invited**).
- Weston, N.B. 2012. Changing Suspended Sediment Concentrations in rivers along the East and Gulf Coasts of the United States: Implications for tidal marshes. Atlantic Estuarine Research Society, Cape May, NJ (Poster).

- Garcia, M. and Weston, N.B. 2012. Microbial degradation of crude oil in salt and freshwater marsh sediment. Atlantic Estuarine Research Society, Cape May, NJ (Poster).
- Poletto, N. and Weston, N.B. 2012. Assessment of heavy metal accumulation history in tidal marshes along the Delaware River Estuary. Atlantic Estuarine Research Society, Cape May, NJ (Poster).
- Weston, N.B. 2011. Microbial organic matter mineralization in response to sea-level rise and salt-water intrusion in tidal freshwater and salt-marshes. Coastal and Estuarine Research Federation, Daytona Beach, FL (Oral Presentation – **Invited**).
- Weston, N.B. 2011. Sea-Level Rise and Salt-Water Intrusion in Tidal Freshwater and Salt-Marshes: Coupled Biogeochemical and Plant Responses. Society of Wetlands Scientists, Prague, Czech Republic (Oral Presentation).
- Weston, N.B. 2011. Changing Suspended Sediment Concentrations in Rivers Draining to Coastal Wetlands Along the East and Gulf Coasts of the United States. Society of Wetlands Scientists, Prague, Czech Republic (Oral Presentation).
- Weston, N.B. 2011. Response of salt-marsh and tidal freshwater marshes in the Delaware River estuary to sea-level rise and salt-water intrusion. Delaware Estuary Science and Environmental Summit, Cape May, NJ (Oral Presentation).
- Meschter, J., and N.B. Weston. 2011. Sediment and heavy-metal deposition in tidal freshwater and saltwater marshes in the Delaware River estuary: Temporal and spatial patterns of deposition and possible impact of sea-level rise on rates of deposition. Delaware Estuary Science and Environmental Summit, Cape May, NJ (Oral Presentation).
- Weston, N.B., M.A. Vile, S.C. Neubauer and D.J. Velinsky. 2010. Accelerated microbial organic matter mineralization following salt-water intrusion into tidal freshwater marsh soils. Society of Wetland Scientists, Salt Lake City, UT (Oral Presentation).
- Weston, N.B. 2010. Declining suspended sediment concentrations in rivers draining to the East and Gulf Coasts of the United States. Society of Wetland Scientists, Salt Lake City, UT (Poster Presentation).
- Meschter, J. and N.B. Weston. 2010. Delivery of sediments and heavy metals to tidal marshes along the Delaware River Estuary. Society of Wetland Scientists, Salt Lake City, UT (Poster Presentation).
- Patson, M., J. Meschter and N.B. Weston. 2010. Impact of sea-level rise and salt-water intrusion on plant growth and seed-bank recruitment in oligohaline marshes of the Delaware River Estuary. Society of Wetland Scientists, Salt Lake City, UT (Poster Presentation).
- Weston, N.B., M.A. Vile, S.C. Neubauer and D.J. Velinsky. 2009. Sea-Level Rise and Salt-Water Intrusion Limit Vertical Accretion Potential in Tidal Freshwater Marshes of the Delaware River Estuary. Coastal and Estuarine Research Federation. Portland, OR (Oral Presentation).
- Weston, N.B., M.A. Vile, S.C. Neubauer and D.J. Velinsky. June 2009. Climate change, sea level rise and salt-water intrusion in tidal freshwater marshes of the Delaware River Estuary. Society of Wetland Scientists. Madison, WI (Oral Presentation - **Invited**).

- Weston, N.B. May 2009. Linking impacts of climate change to carbon and phosphorus dynamics along a salinity gradient in tidal marshes. Environmental Protection Agency Meeting, Seattle, WA (Oral Presentation).
- Weston, N.B. March 2009. The impacts of climate change and sea level rise on tidal marshes in the Delaware River Estuary. Ursinus College, Collegeville, PA (Oral Presentation – ***Invited***).
- Weston, N.B., M.A. Vile, S.C. Neubauer and D.J. Velinsky. January 2009. The impact of climate change and sea level rise on tidal freshwater marshes of the Delaware River Estuary. Partnership for the Delaware River Estuary Science and Environmental Summit, Cape May, NJ (Oral Presentation).
- Prša, T., N.B. Weston and M.A. Vile. January 2009. Changes in metabolic activity and community composition of sulfate reducing bacteria in tidal freshwater marsh soils in response to climate change and saltwater intrusion. Partnership for the Delaware River Estuary Science and Environmental Summit, Cape May, NJ (Poster Presentation – ***Best Student Poster Award***).
- Prša, T., N.B. Weston and M.A. Vile. May 2008. Impact of rising sea levels and salinity intrusion on the metabolic activity and community composition of sulfate reducing bacteria in tidal freshwater marsh sediments. Society of Wetland Scientists, Washington, DC (Poster Presentation – Honorable Mention for best student poster).
- Neubauer, S.C., C.B. Craft, M.A. Vile and N.B. Weston. May 2008. Tidal freshwater wetland responses to climate change. Society of Wetland Scientists, Washington, DC (Poster Presentation).
- ‡Burke-Scoll, M.J., R.K. Wieder, M.A. Vile, K.D. Scott, N.B. Weston and D.H. Vitt. May 2008. Biological N₂ Fixation in an Alberta, Canada bog. Society of Wetland Scientists, Washington, DC (Oral Presentation).
- Weston, N.B., M.A. Vile, D.J. Velinsky, S.C. Neubauer and S.B. Joye. 2007. Shifting Pathways and Magnitude of Organic Matter Mineralization in Tidal Freshwater Marshes Following Sea-Level Rise. Estuarine Research Federation, Providence, RI (Oral Presentation).
- Giblin, A., N.B. Weston, J. Tucker, G. Banta, A. Bernhard and C. Hopkinson. 2007. Salinity Effects of Nitrogen Cycling in Estuaries. Estuarine Research Federation, Providence, RI (Oral Presentation).
- Weston, N.B., M.A. Vile, D.J. Velinsky, S.B. Joye and S.C. Neubauer. 2007. Rising sea-levels and salinity intrusion into tidal freshwater marshes: Shifting microbial communities and pathways of organic matter mineralization. American Society of Limnology and Oceanography, Santa Fe, NM (Oral Presentation).
- Hopkinson, C.S., N.B. Weston, J.J. Vallino and R.H. Garritt. 2007. Estuarine ecosystem metabolism and the importance of allochthonous subsidies. American Society of Limnology and Oceanography, Santa Fe, NM (Oral Presentation).
- Edmonds, J.W., N.B. Weston, X. Mou, S.B. Joye and M.A. Moran. 2007. Linking the response of the microbial community structure to carbon mineralization rates during sea water intrusion into freshwater estuarine sediments. American Society of Limnology and Oceanography, Santa Fe, NM (Oral Presentation).

- Weston, N.B. 2006. Ramifications of Rising Sea Levels and Salinity Intrusion into Tidal Freshwater Marshes: Shifting Microbial Communities and Pathways of Organic Matter Mineralization. Department of Biology, Villanova University, Villanova, PA (Oral Presentation – *Invited*).
- Weston, N.B., M.A. Vile and S.B. Joye. 2006. Ramifications of Rising Sea Levels and Salinity Intrusion into Tidal Freshwater Marshes: Shifting Microbial Communities and Pathways of Organic Matter Mineralization. BIOGEOMON, Santa Cruz, CA (Oral Presentation).
- Hopkinson, C.S., N. Weston, J. Vallino, and R.H. Garritt. 2006. Estuarine ecosystem metabolism as driven by gradients in DOM sources and bioavailability, and residence time. Estuarine Research Federation, Victoria, BC (Oral Presentation).
- Weston, N.B., *R.E. Dixon and S.B. Joye. 2005. Microbial and geochemical ramifications of salinity intrusion into tidal freshwater sediments. Patrick Center for Environmental Research, Academy of Natural Sciences, Philadelphia, PA. (Oral Presentation – *Invited*).
- Weston, N. B. and Joye, S. B. 2005. Seasonal variation in the breakdown of HMW-DOM in estuarine sediment: Coupling between the hydrolytic/fermentative and terminal metabolic microbial communities. American Society of Limnology and Oceanography, Salt Lake City, UT (Oral Presentation).
- Joye, S.B., Lee, R.Y., Porubsky, W.P. and Weston, N. B. 2005. Environmental controls on denitrification in temperate and tropical shallow sediments. American Society of Limnology and Oceanography, Salt Lake City, UT (Oral Presentation).
- Porubsky, W.P., N.B. Weston, and S.B. Joye, 2003. Examination of denitrification and dissimilatory nitrate reduction to ammonium as pathways for the reduction of inorganic nitrogen in saltmarsh sediment. Estuarine Research Federation, Victoria, BC (Oral Presentation).
- Weston, N.B., S.B. Joye and W.P. Porubsky. 2003. Shallow marsh groundwater biogeochemistry and dissolved organic matter lability. American Society of Limnology and Oceanography, Salt Lake City, UT (Oral Presentation).
- Joye, S.B., N.B. Weston, W.S. Moore, and W.P. Porubsky. 2003. Groundwater as source of nutrients and organic matter in freshwater and marine ecosystems. American Society of Limnology and Oceanography, Salt Lake City, UT (Oral Presentation).
- Weston, N.B., W.P. Porubsky and S.B. Joye. 2002. Seasonal patterns of porewater nutrients, dissolved organics, redox species and gases in estuarine sediments. American Society of Limnology and Oceanography, Victoria, BC (Oral Presentation).
- Porubsky, W.P., N.B. Weston, R.Y. Lee and S.B. Joye. 2002. Diel and seasonal patterns of benthic fluxes of nutrients, gases, and dissolved organics from temperate intertidal sediments. American Society of Limnology and Oceanography, Victoria, BC (Oral Presentation).

- Joye, S.B., S.E. MacAvoy, W.P. Porubsky and N.B. Weston. 2001. Groundwater inputs and sediment biogeochemical processes in Georgia and South Carolina coastal ecosystems. American Society of Limnology and Oceanography, Victoria, BC (Oral Presentation).
- Weston, N.B., S.A. Carini, A.E. Giblin, G.T. Banta, C.S. Hopkinson and J. Tucker. 1997. Estimating Denitrification in the Sediments of the Parker River Estuary, Massachusetts. Estuarine Research Federation, Providence, RI (Poster Presentation).

Teaching

Villanova University, Villanova, PA

GEV 4310	Environmental Issues Seminar	Spring 2023
GEV 1050	Environmental Science I	Fall 2022
GEV 3300	Statistics in Environmental Science	Fall 2022
GEV 2001	Professional Development in Geography and the Environment (1 cr.)	Fall 2022
GEV 4329	Global Change Research	Spring 2022
GEV 1050	Environmental Science I	Fall 2021
GEV 2001	Professional Development in Geography and the Environment (1 cr.)	Fall 2021
GEV 7000	Research Methods in Environmental Science	Fall 2021
GEV 8300	Wetland Field Research (1 cr)	Fall 2021
GEV 3300	Statistics in Environmental Science	Spring 2021
GEV 7020	Advanced Environmental Issues Seminar	Spring 2021
MSE 2501	Our Warming Planet	Fall 2020
GEV 6005	Senior Research Seminar (1 cr.)	Fall 2020
GEV 4310	Environmental Issues Seminar	Spring 2020
GEV 7000	Research Methods in Environmental Science	Fall 2019
GEV 3300	Statistics in Environmental Science	Fall 2019
GEV 7020	Advanced Environmental Issues	Spring 2019
GEV 4310	Environmental Issues Seminar	Spring 2019
GEV 8300	Wetlands Field Research (1 credit field course)	Fall 2018

GEV 4360 / 8330	Field and Lab Methods in Environmental Science	Spring 2018
GEV 1050	Environmental Science I	Fall 2017
GEV 4360	Field and Laboratory Methods in Environmental Science	Spring 2017
GEV 1050	Environmental Science I	Fall 2016
GEV 3300	Statistics in Environmental Science	Fall 2016
ASPD 2000	Professional Development for Environmental Scientists	Fall 2016
MSE 2501	Our Warming Planet	Spring 2016
GEV 3300	Statistics in Environmental Science	Spring 2016
ASPD 2000	Professional Development in Environmental Science	Fall 2015
GEV 4320	Microbial Processes in the Environment	Fall 2015
GEV 3300	Statistics in Environmental Science	Spring 2015
GEV 4300	Seminar in Environmental Issues (lecture)	Spring 2015
GEV 1050	Environmental Science I (lecture and lab)	Fall 2014
GEV 1051	Environmental Science II (lecture and lab)	Spring 2014
ASPD 2000	Professional Development for Environmental Scientists, 1-credit (lecture)	Fall 2013
GEV 4320 / BIO 9104	Microbial Processes in the Environment (lecture and lab)	Fall 2013
GEV 4500	Statistics and Experimental Design in Environmental Science (lecture)	Spring 2013
GEV 4310	Seminar in Environmental Issues (lecture)	Spring 2013
GEV 6005	Senior Research Seminar, 1-credit (lecture)	Spring 2013
MSE 2000	Our Warming Planet (lecture and lab for non-science majors)	Fall 2012
MSE 2000	Our Warming Planet (lecture and lab for non-science majors)	Fall 2011
GEV 4500	Statistics and Experimental Design in Environmental Science (lecture)	Spring 2011

GEV 4310	Seminar in Environmental Issues (lecture)	Spring 2011
GEV 1050	Environmental Science I (lecture and lab)	Fall 2010
GEV 4320/ BIO 9104	Microbial Processes in the Environment (lecture and lab)	Spring 2010
GEV 1050	Environmental Science I (lecture and lab)	Fall 2009
GEV 1051	Environmental Science II (lecture and lab)	Spring 2009
GEV 4310	Seminar in Environmental Issues (lecture)	Spring 2009
GEV 1050	Environmental Science I (lecture and lab)	Fall 2008
BIO 6950/ 6952	Advanced Topics in Biology "Life on the Edge" (lecture and lab)	Fall 2007

Teaching Development Activities

VITAL Monday Morning Mentor

Topic

How Can I Grade in Less Time with Greater Impact?

Date

22 November 2021

Research Mentorship

Graduate Advisor

<i>Student</i>	<i>Institution and Role</i>	<i>Title</i>	<i>Dates</i>
Zachary Moats	M.S. Environmental Science, Villanova University	Ribbed mussel (<i>Geukensia demissa</i>) contribution to salt marsh nitrogen cycling	2023-2025
Paris Baker	M.S. Environmental Science, Villanova University	Marsh response to sea-level rise and salinity intrusion	2022-2024
Camila Silva	M.S. environmental Science, Villanova University	Nitrogen fixation in tidal salt marshes of Plum Island Sound, MA: The missing nitrogen?	2022-2024
Isaiah Leach	M.S. environmental Science, Villanova University	"Patterns of accretion and carbon accumulation in marshes of the Plum Island Estuarine system, MA"	2021-2023
Mayci Shimon	M.S. Environmental Science, Villanova University	"Nitrogen cycling following salt-water intrusion in tidal freshwater marsh sediments"	2019-2021
Andrea Stumpf	M.S. Environmental Science, Villanova University	"Storm deposition of sediments on salt-marshes: Elevation capital or disturbance?"	2018-2020

Sandra Demberger	M.S. Environmental Science, Villanova University	"Carbon sequestration in salt-marshes along the U.S. East Coast"	2018-2020
Kristen Jezycki	M.S. Environmental Science, Villanova University	"Heavy metal pollution histories as recorded in salt-marsh soils tied to land use change along the U.S. East Coast"	2017-2019
Miranda Cento	M.S. Environmental Science, Villanova University	"The role of changing salinity in mediating methane production and oxidation in tidal marshes"	2017-2019
Mary Zawatski	M.S. Environmental Science, Villanova University	"Carbon exchange and sediment deposition in a heterogeneous New England salt marsh"	2016-2018
Elise Rodriguez	M.S. Environmental Science, Villanova University	"Land use impacts on mineral sediment delivery and accretion rates in tidal wetlands"	2016-2018
Alec Davis	M.S. Environmental Science, Villanova University	"Examining the susceptibility of marshes to sea level rise and identifying potential risks to coastal communities"	2016-2018

Member of Graduate Committee

<i>Student</i>	<i>Institution and Role</i>	<i>Title</i>	<i>Dates</i>
Melissa Jaffe	M.S. Environmental Science, Villanova University	"Carbon and nitrogen acquisition and translocation for egg development in non-bleached and bleached corals"	2017-2019
Kristen Jensen	M.S. Environmental Science, Villanova University	Nitrogen fixation by methanotrophs in the boreal peatland bogs of Alberta, CA	2017-2019
John Ngyun	M.S. Environmental Science, Villanova University	"Monitoring hydraulic fracturing impacts to the upper Susquehanna watersheds using sediment chemical analysis"	2017-2019
Mikah Schlesinger	M.S. Biology, Villanova University	"Potential Alteration of the Methane Cycle in Boreal Peatlands of Western Continental Canada in Relation to Enhanced Nitrogen Deposition"	2015-2017
Jennifer Bryan	Marine, Estuarine, & Environmental Science, University of Maryland	"Evaluating the impact of sea-level rise on oligohaline marsh macrophytes"	2013-2014

Le Wang	M.S. Biology, Villanova University	"Could elevated CO ₂ stimulate decomposition in a salt marsh?"	2008-2011
Katharine Shepard	M.S. Biology, Villanova University	"Can tidal marshes keep up with sea-level rise? Productivity and decomposition of a brackish marsh in a changing environment"	2009-2011

Undergraduate Student Theses Directed (*Honors Thesis)

<i>Student</i>	<i>Title</i>	<i>Dates</i>
Gillen Curren	Heavy metals in estuarine food webs	2021-2022
Leah Eastment	A finished mug of coffee, and unfinished story: Caffeine in estuarine waters	2020-2021
Gabriella Giordano	"Heavy metals in surficial soils and mussel tissue in Plum Island Estuary, Massachusetts"	2019-2020
Stephanie Batog	"Carbon dioxide gas evasion from streams in Eastern Pennsylvania and Northern Arkansas"	2018-2019
Keegan Ruscheinski	"The greenhouse gas balance of a constructed wetland"	2018-2019
Olivia Cacciatore	"Riparian vegetation and stream nutrient content; possible remediation using artificial floating islands"	2017-2018
Mikala Jordan	"Gas exchange between the aquatic portion of tidal marsh ecosystems and the atmosphere"	2017-2018
Danielle Radomile	"Well-pads, pipelines, and roads as land use changes in the Marcellus Shale hydraulic fracturing region"	2015-2016
John O'Connor	"Sediment accretion rates and carbon burial in Barnegat Bay, NJ"	2015
Brian Donnelly	"Iron reduction rates along salinity gradients in mid-Atlantic and Louisiana estuarine systems"	2015
*Michelle Velez	"Heavy metal contamination in vegetables grown in urban gardens"	2013-2014
Michele Wiedersum	"Radium-226 as a potential indicator of surface water contamination from hydraulic fracturing wells in Northeast Pennsylvania"	2012-2013
Michael Lang	"Denitrification in tidal marshes along a salinity gradient in the Delaware River Estuary: Implications of salt water intrusion for an important ecosystem service"	2012-2013
Jennifer Roche	"A comparative analysis of green insulation techniques"	2012-2013
Margaret Garcia	"A path to remediation: The effects of crude oil on salt and freshwater marsh sediment"	2012
Cynthia Troy	"Effects of salinity, toxicity, moisture and temperature stress on nitrous oxide production in agricultural soils"	2012
Nicole Poletto	"An assessment of heavy metal accumulation history in the Delaware River Estuary"	2011-2012
Andrew Galtieri	"The dispersal of radioisotopes due to routine nuclear power plant operation"	2011-2012

Angela Bagnasco	"New urbanist development plan in West Philadelphia"	2010-2011
Tatjana Prsa	"Impact of rising sea levels and salinity intrusion on the metabolic activity and community composition of sulfate reducing bacteria in tidal freshwater marsh sediments"	Fall 2008

Academic Year Independent Studies Directed

<i>Student</i>	<i>Title</i>	<i>Dates</i>
Chrissy Polakiewicz	VURF: Radioactive contamination along the Raritan River, NJ.	2024
Kamara Staples	"Irrigation techniques to reduce water consumption"	2021
James Dunbar	"Mosquito and West Nile Virus dynamics in Fairfax County, Virginia"	2021
Matthew Russell	"Change in nutrient concentration in streams in Eastern Pennsylvania"	2020
Samantha Huffman	"Biochar application for soil remediation and plant growth"	2019
Diana Lampasona	"Tidal marsh elevation and wetland mapping using an unattended aerial vehicle"	2017
Thomas Boland	"Land use and water quality in headwater streams"	2017
Arielle Massillon	"Sediment availability and tidal marsh accretion rates"	2017
Paige McNamara	"Fecal coliforms in a constructed wetland"	2017
Mary Rose Makoski	"Methane oxidation along salinity gradients in two estuaries"	2016
Naomi Ng	"The role of advertising in promoting environmental consciousness"	2016
Kevin Corbusier	"Sediment Import/Export Analysis of Shad Creek, Plum Island, MA"	2015
Matthew Hanagan	"Quantifying Aquaponics: The Effect of Blue Tilapia on Plant Biomass Production"	2015
Sarah Petro	"Analysis of growth and violations in hydraulic fracturing activity in Northeastern PA"	2015
Gerard Ondrey	"Salinity and nitrous oxide: The effects of road salts on N2O production in Villanova University's constructed wetland"	2015
Andrew Hotchkiss	"Evaluating hydraulic fracturing impacts on baseflow in streams in the Marcellus Shale region"	2015
Emma Chudwick	"Community Supported Agriculture and Urban Food Deserts"	2015
Emeka Ndichie	"Mortality of ghost shrimp during a simulated oil spill and dispersant application"	2014
Connor Supple	"Examination of N and P concentration in Eastern PA watersheds with varying land-use"	2013

John Devine	"The effects of hydraulic fracturing on the conductivity of streams in the Susquehanna River Watershed"	2013
Molly Haggerty	"Ecosystem services in a constructed wetland: Sediment retention and denitrification dynamics"	2013
Andrew Bigelow	"Analysis of How Changes in Transportation Habits can alter Carbon Dioxide Emissions"	2013
Christofer Denny	"Fracking Up the Susquehanna"	2013
Allison Pepper	"The effects of hydraulic fracturing on surface water in the Pennsylvania Marcellus Shale region: An analysis of heavy metals and major ions"	2013
Stefan Goodridge	"The green economy"	2011
Andrew Gordon	"Gamma-emitting radioisotope contamination of drinking water in the Marcellus Shale natural gas extraction area of Northeastern Pennsylvania"	2011
Michael Mangiante	"Land-use effects on phosphorus and nitrogen dynamics during a storm event in a Pennsylvania stream"	2011
Kara Chatham	"Examining the impact of Mount Pinatubo ash on seawater micronutrient concentrations"	2011
Eric Au	"Effects of saltwater intrusion on bio-available organic matter in marsh soils"	2011
Luis Dominguez	"Observing concentrations of nitrates and phosphates in the Rio Grande at dams from the Rio Grande Reservoir, Colorado to the American Dam, El Paso, Texas"	2011
Si Xue Lin	"Land use and mutualism: investigating intercropping pairs"	2011
Michael Patson	"Mineralization in two wetlands"	2011
Neil Mehta	"The microbial degradation of crude oil in fresh and saltwater marsh soils"	2011
Justin Stephens	"Acidification dynamics of mountaintop peatlands in response to N, SO_4^{2-} , and Fe deposition in the Endless Mountains region, PA"	2010-2011
Justin Meschter	"Delivery of sediments and heavy metals to tidal marshes along the Delaware River Estuary"	2009
Michael Gill	"Minor-watershed phosphate and nitrate levels as a function of population density in Chester County, PA"	2009
Angela Bagnasco	"Childhood environmental education: A study on the effects of a zoo on environmental awareness"	2009

Summer Field & Laboratory Internships Directed

<i>Student</i>	<i>Title</i>	<i>Dates</i>
Christine Polakiewicz	VURF: Radioactive contamination along the Raritan River, NJ.	2023
Tenley Ransom	Heavy Metals in Honeybees Along an Urban to Rural Gradient in the Philadelphia Region	2023

Kamara Staples	Evaluating irrigation approaches to maximize plant growth and minimize water loss	2021
Gillen Curren (Beckman Scholar)	Heavy metals in trophic food-webs of three U.S. East Coast estuaries	2019 and 2020
Leah Eastment	Caffeine concentrations in Plum Island Sound	2019
Keegan Ruscheinski	Greenhouse gas exchange in a constructed wetland	2018
Lloyd Willis	Saltwater intrusion in the Delaware River estuary	2018
Gabriel Benson	REU Intern on NSF Funded Research Project	2018
Diana Lampasona	VURF: Creating digital elevation models and vegetation classification systems to determine marsh response to sea level rise in Plum Island, MA	2017
Mikala Jordan	Summer Internship on NSF Funded Research Project	2017
Madisen Dimacale	Summer Internship on NSF Funded Research Project	2017
Arielle Massillon	Summer Internship on NSF Funded Research Project	2016
Mikala Jordan	VURF: "The Response of Estuarine Metabolism to Changes in Tidal Marsh Elevation due to Sea Level Rise"	2016
Olivia Cacciatore	Summer Internship on NSF Funded Research Project	2016
Diana Lampasona	Summer Internship on NSF Funded Research Project	2016
Danielle Radomile	Summer Internship on NSF Funded Research Project	2015
Brian Donnelly	Summer Internship on NSF Funded Research Project	2015
Mary Rose Makoski	Summer Internship on NSF Funded Research Project	2015
Kevin Corbusier	Summer Internship on NSF Funded Research Project	2015
Gerard Ondrey	Summer Internship	2014
Stephanie Dantos	Summer Internship	2014
Molly Haggerty	Summer Internship on PA Sea Grant Funded Research Project	2013
Brain Donnelly	Summer Internship on PA Sea Grant Funded Research Project	2013
Julie Joyce	Summer Internship on NSF Funded Research Project	2012
Michael Lang	Summer Internship on NSF Funded Research Project	2012
Molly Haggerty	Summer Internship on NSF Funded Research Project	2012
Alejandra Gonzalez	Summer Internship on NSF Funded Research Project	2012
Cynthia Troy	GEV: "Increased nitrous oxide production by microbial denitrifiers brought about by stress due to salinity, pH, toxicity and moisture in estuarine and agricultural soils"	2011
Eric Au	Summer Internship on NSF Funded Research Project	2011
Justin Walsh	Summer Internship on NSF Funded Research Project	2011
Margaret Garcia	Summer Internship on NSF Funded Research Project	2011

Justin Stephens	VURF: "Acidification dynamics of mountaintop peatlands in response to N, SO ₄ ²⁻ , and Fe deposition in the Endless Mountains region, PA"	2010
Melanie Pingoy	Summer Internship on NSF Funded Research Project	2010
Neil Mehta	Summer Internship on NSF Funded Research Project	2010
John Ufferfilge	Summer Internship on NSF Funded Research Project	2010
Michael Patson	VURF: "Impact of sea level rise and salt water intrusion on plant growth and seed-bank recruitment in oligohaline marshes of the Delaware River Estuary"	2009
Justin Meschter	Summer Internship	2009

Professional Service

Organizational Activities

Member	2008-present	Coastal and Estuarine Research Federation
Member	2008-present	American Geophysical Union
Member	2008-present	American Society of Limnology and Oceanography
Member	2008-present	Society of Wetland Scientists
Member	2012 - 2016	Student Grants Committee, Society of Wetland Scientists
Chair	Jun 2009 – July 2012	Biogeochemistry Section, Society of Wetland Scientists
Member	2010-2011	Scientific Committee, Society of Wetland Scientists meeting, Prague, Czech Republic
Symposium Chair and Organizer	2010-2011	Society of Wetland Scientists meeting, Prague, Czech Republic
Member	2008-2010	Delaware Estuary – EPA Climate Ready Estuaries Program Workgroup
Member	2008-2010	Partnership for the Delaware Estuary Wetlands Workgroup
Symposium Chair and Organizer	2010	"Wetlands in a Changing World", Society of Wetland Scientists Meeting, Salt Lake City, UT
Conference Moderator	2009	Partnership for the Delaware River Estuary Science and Environmental Summit, Cape May, NJ

Editorial and Reviewer Activities

Associate Editor	2013-2017	<i>Wetlands</i>
External Rank and Tenure Reviewer	2017	Bryn Mawr College
Reviewer for academic journals	2008-present	<i>Applied Geochemistry</i> <i>Aquatic Biology</i> <i>Aquatic Botany</i> <i>Biogeochemistry</i> (6) <i>Biogeosciences</i> <i>Ecology</i> <i>Ecological Applications</i> <i>Ecological Engineering</i> <i>Estuaries & Coasts</i> (14) <i>Estuarine, Coastal and Shelf Science</i> <i>Geochimica et Cosmochimica Acta</i> <i>Geoderma</i> <i>Geology</i> <i>Global Biogeochemical Cycles</i> <i>Global Change Biology</i> (4) <i>Journal of Geophysical Research</i> (4) <i>Limnology and Oceanography</i> (3) <i>Limnology and Oceanography Methods</i> <i>Marine Chemistry</i> <i>Marine Ecology Progress Series</i> <i>Microbial Ecology</i> <i>Middle States Geographer</i> <i>Nature</i> (2) <i>Oceanography</i> <i>Science of the Total Environment</i> <i>Sedimentology</i> <i>Soil Biology and Biochemistry</i> <i>Wetlands</i> (5)
Ad-Hoc Editor	2012	<i>Ecological Applications</i>
Proposal Review Panel Member	2019	National Science Foundation Critical Zone Observatory
	2015	Maryland Sea Grant
	2012	Maryland Sea Grant Graduate Fellowship
	2011	Environmental Protection Agency Science to Achieve Results (STAR) Graduate Fellowship

Departmental Service

Appointments

Department Chair	2019-present	Lead the Department
Graduate Program Director	2018-2019	Administer the Masters in Environmental Science graduate program
Research Director	2016-2018	Mentor new faculty and direct student research programs in the department

Committees

Member, Department Assessment Committee	2019-present	Assess undergraduate and graduate programs in the Department
Member, Post-doctoral Fellow Search Committee	2019-2020	Conducted search for postdoctoral fellow
Chair, Search Committee	2018-2019	Chair of department FTNTT search committee
Chair, Rank and Tenure Committee	2016-2018	Chair of department rank and tenure committee
Member, Annual and Triennial Review Committee	2014-2019	Reviewed annual and triennial faculty evaluations
Chair, Faculty Search Committee (3 concurrent searches)	2015-2016	Chaired search for three tenure-track assistant professors
Member, Rank and Tenure Committee	2015-2016	Review tenure and interim review dossiers
Member, Masters in Environmental Science Committee	2011-2016	Assisted in proposing Environmental Science Masters Program
Member, Curriculum Committee	2008-2011	Reviewed and revised curriculum for Environmental Science and Environmental Studies majors
Member, Post-doctoral Fellow Search Committee	2010-2011	Conducted search for postdoctoral fellow

Activities

Organized Department's Peer Mentoring program	2021-present
Organized external speakers for spring department seminar series (~5 per semester)	2009, 2011, 2013, 2015, 2019, 2021, 2022
Organized alumni/informational panels for undergraduate students	2011, 2019
Preview Day	September 2022
Early Action Candidates Day Department Open House	April 2021
Preview Day	September 2021
Early Action Candidates Day Department Open House	April 2020
Early Action Candidates Day Department Open House	February 2019
Preview Day	September 2019
Graduate Program Information Session	January 2019
Preview Day	September 2018
Preview Day	September 2017
Candidates Day Department Open House	April 2016
Early Action Candidates Day Department Open House	April 2015
Panel member, 'Climate change: Fact and fiction,' held in conjunction with the Geographical Society of Philadelphia	2013
Advisor for Environmental Science and Environmental Studies Majors (~20 per year)	2008-present

College & University Service

Committees

Chair, Earth Day Committee	2013-present	Planning and implementing Villanova Earth Day events
Villanova Social Science Apprenticeship (VSSA)	2022-2023	Founded and administered first two years of the summer undergraduate student research program
Aequitas Working Committee Goal 3A: Diverse Community	2021-2022	Working to adjust Villanova's hiring and retention policies to promote a diverse community

Member, Sustainability Leadership Council	2019-present	Working to plan and implement sustainability initiatives across the university
Member, President's Environmental Sustainability Committee (Liesel Schwarz, chair)	2013-2018	Working to plan and implement sustainability initiatives across the university
Member, University Conference Travel Grant Committee (Amanda Grannas, chair)	2017-2019	Review conference travel grant applications from faculty
Member, Internal Review Committee	2017	Perform internal departmental review of the Department of Astrophysics and Planetary Science
Member, Villanova Undergraduate Research Fellows Review Committee	2014	Review student proposals for research fellowships
Member, Villanova Electronic Research Administration Committee (Dr. Al Ortega, Chair)	2014-2015	Review electronic administration options for the university and recommend an external vendor
Member, Strategic Futures Committee (Dr. Jean Ann Linney, Chair)	2012-2013	Assess current position and identify strategic goals for the College
Comprehensive Science Advisory Committee (Dr. Robert Styer, Chair)	2011-present	Advise the Comprehensive Science program regarding courses and requirements
Chair, Mendel Science Experience Postdoctoral Search Committee	2013	Conduct search for postdoctoral fellow
Member, Earth Day Committee (Dr. Paul Rosier, Chair)	2008-2013	Planning and implementing Villanova Earth Day events
Member, Mendel Science Experience Postdoctoral	2012	Conduct search for postdoctoral fellow

Search Committee (Dr. Kelman Wieder, Chair)		
Member, Field Research Safety Committee (Drs. Samantha Chapman and Melanie Vile, Co-Chairs)	2011-2012	Preparing field research safety guidelines and documentation

Activities

College Preview Day Event Faculty Speaker	September 2018
University academic integrity panel	October 2017
College Preview Day Event Faculty Speaker	September 2017
College Candidates' Day Event Faculty Speaker	April 2016
College of Liberal Arts and Sciences campaign event video (https://www.youtube.com/watch?v=fNa-qGBVxdQ&feature=youtu.be)	March 2016
Villanova Virtual Visit video (https://www.villanovavirtualvisit.com/#THME_2013052186746%7CPER_2013032195468%7B%22child%22%3A%22COM_2013032196194%22%7D%7CUMAP_2013031257436%7Ce%3D24a1c527-060a-4de7-b4bf-23503a274895)	2013

Community Service

Taught 4 th grade science class at Nativity of Our Lord Elementary School, Warminster, PA	2020
Taught 4 th grade science class at Coopertown Elementary, Havertown, PA	2020
Taught 4 th grade science class at McCall Elementary School, Philadelphia, PA	2018
Taught 4 th grade science class at Waldorf School of Philadelphia, PA	2016
Earth Day of Service, Walnut Hill Community Garden, Philadelphia, PA	2015

Presented "Phosphorus Dynamics in Barnegat Bay Sediments"	2015
talk at public Barnegat Bay Research Forum at Ocean County College, NJ	
Earth Day of Service, Philly Urban Creators, Philadelphia, PA	2014
Taught pre-kindergarten science class at Russell Byers Charter School, Philadelphia, PA	2010
Taught 2 fourth-grade science classes at Russell Byers Charter School, Philadelphia, PA	2009