

Joshua David Himmelstein

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Education

Ph.D. Student, Marine Sciences, UNC-Chapel Hill

June 2020 – Present

Focus: Coastal Geomorphology, all courses High Pass

B.S., Department of Geology, College of William & Mary (W&M)

Class of 2018

Major: Geology with High Honors Thesis, Cum Laude; Major GPA 3.76

Second Major: Environmental Science

Washington University in Saint Louis

June-July 2015

Summer Course in Entrepreneurial Ventures, GPA 4.0

Experience

Interim Researcher, Perron Lab at MIT

January 2020 – June 2020

- Created a Google Earth Engine remote sensing model of anthrosol distribution in the Xingu Basin of Amazonia to refine ecosystem-wide estimates of carbon storage

Science Educator & Lab Coordinator, Peace Corps, Liberia

September 2018 – December 2019

- Organized, prepared, and implemented science lab classes for Biology, Chemistry, Physics, and General Science subjects from 7th to 12th grade, with focus on hands-on learning and co-teaching
- Trained teachers to use local materials for demonstrating science topics

Researcher, Kirwan Lab, Virginia Institute of Marine Science (VIMS)

2016 – 2018

- Deployed commercial turbidity sensors in Chesapeake Bay Estuarine research sites
- Conducted NSF and USGS grant funded research on the response of salt-marshes to sea-level rise and anthropogenic impacts.
- Traced and quantified changes in marsh ponding using remote sensing through ArcGIS, historic aerial imagery, habitat classification, and NDVI techniques
- Extracted and analyzed porewater for NH₄ and SO₄ using chemical fixing and mass spectrometry

NSF Research Experience for Undergraduates – VIMS

June – August 2016

- Compared morphologies and sedimentation rates of connected and isolated ponds on Goodwin Island, VA, to predict their rehabilitation under varying RSLR rates.
- Employed sediment tiles, sediment tubes, RTK GPS, and Russian peat cores

Outreach and Conferences

Invited Speaker, International Symposium on Coastal Resources and Environment

2021

Nanjing, Jiangsu Province, China

Participant, Geo for Good Summit, Google Earth Outreach

2021

Virtual Conference

Guest Lecturer, The Marine Environment

2021

UNC Chapel Hill, Chapel Hill, NC

Session Chair – Let Girls Learn Workshop

2019

Grand Kru County Education District, Barclayville, Liberia

Guest Speaker, United Nations Day

2018

Garraway Education District, Garraway City, Liberia

Himmelstein, Joshua: Curriculum Vitae

Poster - Mechanisms of pond expansion and marsh loss, Coastal Estuarine Research Federation Conference 2017
Providence, RI

Department Brown Bag – Marsh Ponding and Working at VIMS, William & Mary Geology 2017
Williamsburg, VA

Awards and Honors

Andrew Marion Blackmon Research Fellowship Fund 2021
William and Mary Departmental High Honors 2018

Committee Service

Lesson-plan workshop Liaison, Scientific Research Educators Network for K-12 Education 2021-Present
Committee Chair, Community Economic Development, Peace Corps Liberia 2018-2019
Committee Chair, Science & Sustainability Events, Alma Mater Productions 2016-2018

Mentoring Activities

NASA GLOBE Partner – Environmental Observations through Students 2019
STEM Club for Junior High School Students 2019

Students Mentored

Monty Terrell Winslow – *Current UNC-CH Undergraduate*
McKenzie McLean – *Current UNC-CH Undergraduate*
Jordan Zoyon Nemah Jr. – *Current Liberian High School Student*
Benedict Weah – *Current Liberian High School Student*

Teaching

“ENEC 698: Analysis and Solution of Environmental Problems” as Teaching Assistant 2021
“Marine Science 101: The Marine Environment” as Teaching Assistant 2020-21
“Science Teacher Training: A Guide to WASSCE Practical Examinations” 2019
“Physics: Interactions of Matter, Space, and Time” 10th and 11th Grade Physics 2018-19
“Biology: Concepts of Life” 10th Grade Biology 2018-19
“Geology 160: Introduction to Geology Lab” Teaching Assistant 2016

Relevant publications

- 1.) **Himmelstein, Joshua**, Orencio Duran Vinent, Stijn Temmerman, and Matthew L. Kirwan. "Mechanisms of pond expansion in a rapidly submerging marsh." *Frontiers in Marine Science* (2021): 1228. <https://doi.org/10.3389/fmars.2021.704768>
- 2.) Duran Vinent, Orencio, Ellen R. Herbert, Daniel J. Coleman, **Joshua D. Himmelstein**, and Matthew L. Kirwan. 2021. “Onset of Runaway Fragmentation of Salt Marshes.” *One Earth* 4 (4): 506–16. <https://doi.org/10.1016/j.oneear.2021.02.013>
- 3.) Kirwan, Matthew L., Orencio Duran Vinent, Glenn R. Guntenspergen, **Joshua D. Himmelstein**, Lennert Schepers, and Stijn Temmerman. "Drivers of Bistability in a Submerging Marsh." In *AGU Fall Meeting 2018*. AGU, 2018.

Relevant Coursework:

Earth Surface Processes, Earth Structure and Dynamics, Modeling in the Earth Sciences (Matlab), Spatiotemporal Geostatistics, Coastal Sediment Dynamics, Physical Oceanography, Biological Oceanography, Hydrology, Ocean Acidification, Sedimentology, Data Science (Python), Introduction to ArcGIS, Honors Physics, Environmental Public Health, Environmental Ethics.