Joshua David Himmelstein

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Education

B.S., Department of Geology, College of William & Mary (W&M) *Class of 2018, Cum Laude*

Major: Geology with High Honors Thesis; Major GPA 3.76
Second Major: Environmental Science

Relevant Coursework: Hydrology, Ocean Acidification, Earth Surface Processes, Sedimentology, Earth Structure and Dynamics, Introduction to Data Science (Python), Introduction to GIS, Honors Physics, and Regional Field Geology (California and Lofoten Islands, Norway), Environmental Public Health, Environmental Ethics.

Washington University in Saint Louis, *June-July 2015*

Researched and analyzed Israel's sustainable water industry, focusing on implementation of desalination plants and water usage in agricultural, industrial, and domestic settings. Culminated in 25-page guiding document.

Experience

PhD Student, Rodriguez Lab at UNC-Chapel Hill *June 2020 – Present*

- 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

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 & Laboratory 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
- Prepared stock solutions, calibrated instruments, designed experimental set-ups

- Taught 10th and 11th grade Physics and Biology per the West African Senior Secondary Certificate Examination (WASSCE) curricula

Researcher, Kirwan Lab, Virginia Institute of Marine Science (VIMS) *2016 – 2018*

- 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
- Worked in marshes across Eastern United States (Blackwater, MD; Plum Island, MA; Eastern Shore, VA; Sapelo Island, GA)
- Processed peat cores for organic vs minerogenic, water content, and bulk density
- Collected and massed aboveground biomass and sorted by species
- Extracted and analyzed porewater for NH_4 and SO_4 using chemical fixing and mass spectrometry
- Tested soil for shear strength at various depths using shear vane
- Collaborated with scientists from University of Antwerp, Belgium
- Created maps, graphs, and figures for use at conference and university presentations

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

Teaching Assistant, Intro Geology Lab, College of William & Mary *January 2016 – May 2016*

- Assisted in weekly 3-hour class lab, teaching sample identification, simple math, and technological literacy

Outreach and Conferences

Guest Speaker, United Nations Day *2018*
Garraway Education District, Garraway City, Liberia

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

Field Experience

Pond ecogeomorphometrics, Blackwater National Wildlife Refuge, MD *2017*
Structural Mapping Student- Lofoten Islands, Norway *2017*
Suspended sediment and biomass collection - Sapelo Island, GA *2016*
RTK, Sedimentation, and core collection, Goodwin Island, VA *2016*
Suspended sediment and biomass collection, Plum Island, MA *2016*
Geomorphology of California Student, Central Valley and Sierra Nevada Range, CA *2015*

Committee Service

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*

Teaching

"Science Teacher Training: A Guide to WASSCE Practicals" *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*