

Sebastian Rowan

PH.D CANDIDATE IN CIVIL AND ENVIRONMENTAL ENGINEERING

University of New Hampshire, Durham, NH

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I am Ph.D. candidate in civil and environmental engineering researching the impacts of flood events and climate change on people and communities. The goal of my research, is to develop a more comprehensive understanding of the risks posed by floods to enable the development of mitigation efforts that prioritize long-term sustainability and community well-being rather than maximizing financial return on investment.

Education

Ph.D. Candidate, Civil and Environmental Engineering

UNIVERSITY OF NEW HAMPSHIRE

2024 (Expected)

Durham, New Hampshire

- Dissertation Title: Assessment of the carbon footprint of flood damages and flood risk management strategies.
- Advisor: Dr. Weiwei Mo

B.S. Environmental Engineering

UNIVERSITY OF NEW HAMPSHIRE

2016

Durham, New Hampshire

Experience

ORISE Graduate Research Fellow

U.S. ARMY CORPS OF ENGINEERS, ENGINEER RESEARCH DEVELOPMENT CENTER

Sep. 2020 - Present

Vicksburg, MS (Remote)

- Contributed to research efforts to quantify impacts of floods not typically included in cost-benefit analyses for flood risk management projects.
- Lead systematic literature review and metasummary to identify risk factors for mental health impacts of floods
- Contributed to Tier 1 Other Social Effects/Environmental Justice Analysis for the USACE New York/New Jersey Harbors and Tributaries Coastal Storm Risk Management Feasibility Study
- Contributed to social vulnerability analysis of future flooding in the Mississippi River Valley

Research Assistant

UNIVERSITY OF NEW HAMPSHIRE

Fall 2018, Spring 2020

Durham, NH

- Resilient Bridge Planning in Mozambique - Bridge Failure Risk from Flooding and Climate Change
- PI: Dr. Kyle Kwiatkowski

Teaching Assistant

UNIVERSITY OF NEW HAMPSHIRE

2019 - 2020

Durham, NH

- CEE 705: Introduction to Sustainable Engineering (Fall 2019, Fall 2020)
- CEE 502: Project Engineering (Spring 2019)

Civil Engineer I-II

NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION, BUREAU OF PLANNING AND COMMUNITY ASSISTANCE

2016 - 2018

Concord, NH

- Contributed to the development of statewide asset management system for culvert and closed drainage systems in partnership with UNH Technology Transfer Center/SADES.

10 Gigabit Ethernet Technician

UNIVERSITY OF NEW HAMPSHIRE INTEROPERABILITY LABORATORY

2014-2017

Durham, NH

Summer Intern

NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES, AIR RESOURCES DIVISION

2015

Concord, NH

Open Source Projects

SVIBUILD

Active

- An R package that allows users to download or construct the CDC's Social Vulnerability Index as a tidyverse or simple features data frame.
- Enables greater flexibility in region selection for SVI analyses than is possible with state- or national-level datasets hosted by CDC.

NSI DATA QGIS PLUGIN

Active

- A basic plugin for QGIS that downloads data from the USACE National Structures Inventory for a specified region and adds it to a map.

USEEIO_PY

Active

- A Python translation of the USEPA's useeior R package for building and using USEEIO models for life cycle analysis.

Publications

- **Rowan, S.**, Yeates, E., Wells, E., Murray, B., & Pinigina, E. (2023). Risk Factors for Mental Health Impacts From Floods: A Systematic Literature Review and Metasummary. *Natural Hazards* [Manuscript Submitted for Publication].
- Galaitsi, S., Kurth, M., **Rowan, S.**, Yeates, E., & Kalaidjian, E. (2022). New York—New Jersey Harbor and Tributaries Coastal Storm Risk Management Feasibility Study—Tier 1 Other Social Effects/Environmental Justice Analysis. U.S. Army Corps of Engineers New York District. https://www.nan.usace.army.mil/Portals/37/Appendix%20A12_Tier%201%20SE_EJ_HATS.pdf
- Seigerman, C. K., McKay, S. K., Basilio, R., Biesel, S. A., Hallemeier, J., Mansur, A. V., Piercy, C., **Rowan, S.**, Ubiali, B., Yeates, E., & Nelson, D. R. (2023). Operationalizing equity for integrated water resources management. *JAWRA Journal of the American Water Resources Association*, 59(2), 281–298. <https://doi.org/10.1111/1752-1688.13086>
- **Rowan, S.**, & Kwiatkowski, K. (2020). Assessing the Relationship Between Social Vulnerability, Social Capital, and Housing Resilience. *Sustainability*, 12(18), 7718. <https://doi.org/10.3390/su12187718>