

AUBREY BUNGER

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CIRTA Lab: <https://citra.engr.uga.edu/>

RESEARCH INTERESTS

Coastal and compound flood modeling; groundwater-surface water interactions; climate change and sea-level rise; coastal resilience; nature-based solutions and natural infrastructure; social inequality and equitable coastal adaptation.

EDUCATION

University of Georgia, Athens, GA Expected May 2027
Master of Science, Civil and Environmental Engineering

- GPA: 3.77/4.00

University of Georgia, Athens, GA May 2025
Bachelor of Science, Environmental Engineering

- GPA: 3.85/4.00
- Dean's List and President's List

RESEARCH EXPERIENCE

CIRTA Lab, University of Georgia - Graduate Research Assistant June 2025 - Present

Advisor: Dr. Felix Santiago-Collazo

- Developing a loosely coupled compound flooding framework using StormWise and ADCIRC to quantify interactions among sea-level rise, tides, precipitation, and groundwater response.
- Applying surface-subsurface flood modeling to inform nature-based solutions and coastal flood resilience planning in Georgia.

CIRTA Lab, University of Georgia - Undergraduate Research Assistant December 2024 - May 2025

Advisor: Dr. Felix Santiago-Collazo

- Developed a compound flooding model integrating AdH and ADCIRC

RESEARCH PRESENTATIONS

39th International Conference on Coastal Engineering (ICCE), Galveston, TX June 2026
Integrating Surface-Subsurface Flooding to Guide Nature-Based Solutions for Coastal Cities

- Oral presentation in the Coastal Management and Environment - Nature-Based Solutions session.

Climate and Water Research Slam, Athens, GA March 2026
Groundwater Response to Compound Flood Events: Coupled Surface-Subsurface Modeling for Georgia's Coast

- Five-minute research lightning talk presented to a broad, interdisciplinary audience.

River Basin Center Poster Symposium, Athens, GA November 2025
Modeling Compound Flood Dynamics to Support Nature-Based Solutions in Coastal Georgia

- Poster presentation.

Georgia Resiliency Conference, Jekyll Island, GA October 2025
Coupled Groundwater and Surface Flooding to Guide Natural Infrastructure Planning in Coastal Georgia

- Poster presentation.

Georgia Environmental Conference, Jekyll Island, GA August 2025
Integrating Groundwater and Surface Flooding to Guide Resilient Coastal Planning in Georgia

- Conference finalist; selected as one of two master's students among six finalists.
- Oral and poster presentation.

Georgia Association of Water Professionals, Savannah, GA July 2025
Groundwater Dynamics During Compound Flood Events: A Framework for Natural Infrastructure Planning in Georgia

- Poster presentation.

Center for Undergraduate Research Opportunities (CURO), Athens, GA April 2025
Assessing Groundwater Responses to Coastal and Pluvial Flooding: A Case Study of Tybee Island

- Poster presentation.

SELECTED ENGINEERING PROJECT EXPERIENCE

- Capstone Design - Hinckley Yacht Service Coastal Flooding and Runoff Mitigation** August 2024 - May 2025
- Collaborated on the design of a coastal flooding and runoff mitigation system using hydrologic modeling and engineering solutions to reduce flood occurrence and duration and improve operational resilience.
- Urban Systems - WTP, WWTP, and Solid Waste Management Designs** August 2023 - December 2023
- Applied urban systems engineering principles to design sustainable water and wastewater treatment plants and an integrated solid waste management facility.
- Design Methodology - Recycling War** January 2023 - May 2023
- Developed and implemented a community-based plastic waste reduction challenge engaging sororities and fraternities in a competitive initiative to reduce plastic waste.

TEACHING AND ACADEMIC SUPPORT EXPERIENCE

- Tutor and Peer Learning Assistant, University of Georgia** February 2023 - Present
- Tutor calculus I and III, differential equations, general chemistry I and II, MATLAB, statics, and strength of materials; serve as a teaching assistant for strength of materials and physics I.
 - Provide approximately 4-10 hours of tutoring per week and adapt problem-solving instruction to individual learning styles.

TECHNICAL SKILLS

- Modeling: ADCIRC, AdH, StormWise, HEC-RAS, HEC-HMS
- Programming & GIS: Python, MATLAB, ArcGIS Pro
- Design: Autodesk Civil 3D
- Professional: Technical presentations, teamwork and collaboration, customer service, adaptability, conflict resolution

RELEVANT COURSEWORK

Hydrology and Hydraulics; Coastal and Estuarine Processes with Engineering Applications; GIS; Advanced Numerical Modeling for Flood Mitigation Solutions; Field Experiences in Natural Infrastructure; Fundamentals of Natural Infrastructure and Nature-Based Solutions; Skills for Collaborative Research.

PROFESSIONAL MEMBERSHIPS AND SERVICE

- American Society of Civil Engineers - Student Member** October 2024 - Present
- Active student member with 13.5 Professional Development Hours (PDHs).
- Tau Beta Pi** March 2024 - Present
- Completed 10+ hours of community service supporting local initiatives and the values of the engineering profession.
- Society of Women Engineers** January 2023 - Present
- Contributed 8+ hours to mentorship and outreach activities supporting young women in STEM.
- Society of Environmental Engineers** January 2022 - Present
- Contributed 8+ hours to environmental outreach projects focused on sustainability awareness and local environmental initiatives.

ADDITIONAL PROFESSIONAL EXPERIENCE

- Colonial Country Club - Server and PGA Tournament, Fort Worth, TX** June 2022 - August 2023
- Managed high-volume member service while coordinating with 5-10 team members per shift.
- Andy's Frozen Custard - Shift Lead, Keller, TX** June 2020 - August 2023
- Supervised teams of 5-10 employees and supported inventory control, shift efficiency, and customer service.

CERTIFICATIONS

- Open Water Scuba; Advanced Scuba; Rescue Scuba; CPR; First Aid; Emergency Oxygen Provider