RYAN THOMAS McCUNE

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Department of Civil, Construction, and Environmental Engineering

North Carolina State University · 915 Partners Way, Raleigh, NC, 27695-7908

EDUCATION

Ph.D. Civil Engineering   Expected 2027

North Carolina State University   Raleigh, NC

Concentration in Coastal Engineering

Honors Bachelor of Environmental Engineering with Distinction   2022

University of Delaware   Newark, DE

Thesis: Potential Impacts of Soil Aging on TDR Calibrations of Biochar Amended Urban and Coastal Soils

Honors Bachelor of Civil Engineering   2022

University of Delaware   Newark, DE

Concentration in Facilities Design and Construction

PROFESSIONAL EXPERIENCE

Graduate Research & Teaching Assistant   2022-present

Dept. of Civil, Construction, and Environmental Engineering, NC State University Raleigh, NC

Research Intern   2022

United States Geological Survey   St. Petersburg, FL

Keller Family Senior Writing Fellow   2021-2022

Honors College, University of Delaware   Newark, DE

Engineering Intern   2020-2022

Coastal Resilience Design Studio, University of Delaware   Newark, DE

Undergraduate Teaching Assistant   2020-2022

Dept. of Civil & Environmental Engineering, University of Delaware Newark, DE

Undergraduate Research Assistant   2018-2022

Dept. of Civil & Environmental Engineering, University of Delaware Newark, DE

Engineering Intern   2020-2021

C.S. Davidson, Inc.   York, PA

Writing Fellow   2020-2021

Honors College, University of Delaware   Newark, DE

Munson Fellow   2019-2020

Honors College, University of Delaware   Newark, DE

Engineering Intern   2019

Manchester Township   York, PA

HONORS & AWARDS

National Defense Science & Engineering Graduate Fellowship	2024-2027
KIETS Climate Leaders Program Scholar	2024
AGU Outstanding Student Presenter Award	2023
NSF Graduate Research Fellowship Program, Honorable Mention	2023
EWC Student Poster Competition, 2nd Place	2023
Provost Doctoral Fellowship, North Carolina State University	2022
American Society of Landscape Architects Award of Excellence in Student Collaboration	2022
PA-DE Chapter of the American Society of Landscape Architects Student Honor Award	2022
RJN Foundation Department of Civil & Environmental Engineering Award	2022
1st Place 2021 Coastal & Estuarine Research Federation Design Competition	2021
Delaware Section of the American Society of Civil Engineers Junior Award	2021
Honors Enrichment Award, University of Delaware Honors College	2021
Chair's Fellowship, University of Delaware Dept. of Civil & Environmental Engineering	2021
General Honors Award	2020

CONFERENCE PRESENTATIONS

Oral Presentations

Collins, J., Hino, M., **McCune, R.**, Anarde, K., Frankenberg, E., (2025). *Tolerating the tide: accommodation and tolerance of chronic coastal flooding in rural North Carolina.* Population Association of America Annual Conference. Washington, D.C., 2025.

Hino, M., Anarde, K., **McCune, R.**, Thelen, T., Farquhar, E., Fridell, T., Whipple, T., Woodard, P., (2024). *Incidence and Impacts of Chronic Coastal Flooding in North Carolina.* Invited presentation at the AGU Fall Meeting. Washington, D.C., 2024.

McCune, R., Anarde, K., Goldstein, E. B., Srebnik, E. R., Thelen, T., Hino, M., (2024). *Quantification of chronic coastal flooding using machine learning.* Presented at the International Conference of Coastal Engineering. Rome, September 2024.

McCune, R., Anarde, K., Goldstein, E. B., (2023). *Semantic Image Segmentation of Coastal Roadway Inundation.* Presented at the AGU Fall Meeting. San Francisco, December 2023.

Muldrow, L., **McCune, R.**, Bruck, J., (2022). *Resilient Self-Generative Infrastructure: A Blue Carbon Solution for Coastal Protection in Hampton, VA.* PA-DE ASLA Conference on Landscape Architecture. Wilmington, April 9, 2022.

Poster Presentations

McCune, R., Anarde, K., Goldstein, E., Baker, C., (2025). *Quantification of Chronic Coastal Flooding: A machine learning-driven approach to water level extraction.* Presented at the NC State Environmental, Water, and Coastal Engineering Symposium. March 21, 2025.

McCune, R., Anarde, K., Goldstein, E., (2024). *Witness to the Rising Tide: Semantic Image Segmentation of Chronic Coastal Flooding.* Presented at the NC State Environmental, Water, and Coastal Engineering Symposium. March 8, 2024.

McCune, R., Anarde, K., Hino, M., Frankenburg, E., Amspacher, K., (2024). *Rising tides, drowning ditches: Analysis and communication of chronic coastal flooding in rural communities.* Presented at the National Adaptation Forum. Baltimore, May 2024.

McCune, R., Collins, J., Anarde, K., Hino, M., (2024). *A Summer Down East: Internship and Research Experiences in Carteret County.* Presented at the KIETS Climate Leaders Symposium 2024. September, 2024.

McCune, R., Anarde, K., Goldstein, E., (2023). *On-device Machine Learning for Identifying the Spatial Extent of Chronic Coastal Flooding.* Presented at the NC State Environmental, Water, and Coastal Engineering Symposium. March 10, 2023.

Anarde, K., Goldstein, E., Bolewitz, J., **McCune, R.**, Gold, A., Hino, M., (2022). *On-device machine learning for identifying the spatial extent of chronic coastal floods.* Presented at the International Conference of Coastal Engineering. Sydney, December 5, 2022.

McCune, R., Fettke Von Koeckritz, H., Bruck, J., Puleo, J. A., (2021). *Fenwick Island Dune Encroachment Monitoring Project.* Presented at the Young Coastal Scientists and Engineers Conference – Americas. Myrtle Beach, October 30, 2021.

PUBLICATIONS

Peer-Reviewed Journal Articles (Published or Accepted)

Hino, M., Anarde, K., Fridell, T., **McCune, R.**, Thelen, T., Farquhar, E., Woodard, P., Whipple, A., (in press). "Land-based sensors reveal high frequency of coastal flooding". In: *Nature Communications Earth and Environment.* In press.

Naquin, K., Adams, D. R., Bailey, M. M., Brown, L., Diez, M., Kanipe, J., **McCune, R.**, Thelen, T., Hunter, D. L., Cooper, C. B., (Apr. 2025). "Not Empty Rain Gauges: Experienced Hobbyists Fulfilled in a Contributory Project". In: *Citizen Science: Theory and Practice.* DOI: `10.5334/cstp.774`.

Peer-Reviewed Journal Articles (Under Review & In Preparation)

McCune, R., Anarde, K., Goldstein, E., Baker, C., (in preparation). "Quantification of chronic coastal flooding: a machine-learning driven approach to water level extraction". In preparation for Water Resources Research.

Datasets

Ku, V., Gabbula, S. R. A. K., **McCune, R.**, Budavi, P., Sigdel, R., Buscombe, D., Favela, J., Shah, M., Goldstein, E. B., Fitzpatrick, S., (2022). "Segmentation Labels for Emergency Response Imagery from Hurricane Barry, Delta, Dorian, Florence, Isaias, Laura, Michael, Sally, Zeta, and Tropical Storm Gordon". In.

PROFESSIONAL DEVELOPMENT

Community Surface Dynamics Modeling System Annual Meeting, Boulder, CO	2025
Earth Surface Processes Institute, Boulder, CO	2025

From Ice Sheets to the Coast: Sea-Level Rise Impacts Workshop, Houston, TX	2024
KIETS Climate Leaders Symposium, Raleigh, NC	2023
5th NOAA AI Workshop, virtual	2023
Coastal Imaging Research Network Workshop, Duck, NC	2023
Blue Economy Workshop, Morehead City, NC	2023

PROFESSIONAL SERVICE

Organizer and Moderator, Panel: Community Responses to Chronic Flooding and Sea-Level Rise Impacts, North Carolina Coastal Conference	2024
Chair, EWC Seminar Food Committee	2024
Member, EWC Seminar Food Committee	2023
Student Member, Provost Search Committee, University of Delaware	2022
Engineering Ambassador, College of Engineering, University of Delaware	2022
Engineering Ambassador, Dept. of Civil & Engineering, University of Delaware	2021-2022
Honors College Ambassador, University of Delaware	2019-2022

LEADERSHIP

President, Coasts, Oceans, Ports & Rivers Institute Student Chapter	2025-present
Vice President, Coasts, Oceans, Ports & Rivers Institute Student Chapter	2023-2024
Vice President, Environmental Engineering Student Association	2020-2022
Parliamentarian, Phi Sigma Pi National Honor Fraternity Alpha Eta Chapter	2021