ROBERT JANE

Research Scientist

ORGANIZATION ROLE

Research Scientist

PROJECT ROLE / FOCUS AREAS

Compound Flooding

Infrastructure Resilience

Multivariate Statistics

Water Quality

EDUCATION

Ph.D., Civil Engineering, University of Plymouth

BSc, Mathematics and Statistics, University of Plymouth

Robert Jane, Ph.D., is a Research Scientist at The Water Institute, working within the Coastal and Compound Flood Risk Department. In his role, Robert is assisting in developing a framework for generating non-tropical events for the Louisiana Watershed Initiative's Coastwide Compound Flood Modeling, as well as developing a method to account for epistemic uncertainty in flood hazard model output. He is also developing hazard annual exceedance probability (AEP) curves for the City of Jacksonville and LWI Coastwide Compound Flood Modeling.

Robert is concurrently a Research Assistant Professor of coastal risks and engineering in the Department of Civil, Environmental and Construction Engineering at the University of Central Florida, a position he has held since 2022. He also holds a secondary joint appointment with the National Center for Integrated Coastal Research at UCF. Prior to this role, he spent three years at UCF as a postdoctoral scholar. Robert's research spans compound flooding, the fragility and performance of flood defense infrastructure and multidisciplinary research into water quality and the response of aquatic ecosystems to anthropogenic and climatic drivers. He has served as principal investigator or co-PI on research initiatives addressing coastal issues in South Florida and beyond, securing more than $1.6 million in grant funding.

Robert graduated from the University of Plymouth in the United Kingdom with a bachelor's in mathematics and statistics, followed by a Ph.D. in civil engineering from the same institution, completed in collaboration with HR Wallingford. Following completion of his doctorate, Robert served as a research fellow in data science and statistics at the University of Plymouth for six months.

PROFESSIONAL EXPERIENCE

2026-Present: Research Scientist, The Water Institute

2022-Present: Research Assistant Professor, University of Central Florida

2019-22: Postdoctoral Researcher, University of Central Florida

2018: Research Fellow in Data Science and Statistics, University of Plymouth

SELECTED PUBLICATIONS

1. Li, H., Jane, R., Eilander, D., Enríquez, A. R., Haer, T., and Ward, P. J. (2026). Assessing the spatial correlation of potential compound flooding in the United States, *Natural Hazards Earth System Sciences*, 26, 391–409, https://doi.org/10.5194/nhess-26-391-2026.
2. Jane, R., Santiago-Collazo, F. L., Serafin, K. A., Gori, A., Pena, F., and Wahl, T. (2025). Compound hazards during tropical cyclones. In G. Vecchi, G. A. Villarini, & E. Scoccimarro (Eds.), Tropical Cyclones and Associated Impacts (pp. 95-119). Elsevier, https://doi.org/10.1016/B978-0-323-95390-0.00001-7.
3. Amorim, R., Villarini, G., Kim, H., Jane, R., and Wahl, T. (2025). A Practitioner's Approach to Process-Driven Modeling of Compound Rainfall and Storm Surge Extremes for Coastal Texas, *Journal of Hydrologic Engineering*, 30(5), https://doi.org/10.1061/JHYEFF.HEENG-6482.
4. Maduwantha, P. M. M., Wahl, T., Santamaria-Aguilar, S., Jane, R., Booth, J. F., Kim, H., and Villarini, G. (2024). A multivariate statistical framework for mixed storm types in compound flood analysis, *Natural Hazards and Earth System Sciences,* 24, 4091–4107, https://doi.org/10.5194/nhess-24-4091-2024.
5. Hermans, T. H. J., Busecke, J., Wahl, T., Malagón-Santos, V., Tadesse M. G., Jane, R., and van de Wal, R. S. W. (2024). Future changes in the Joint Probability of Extreme Wind, Storm Surges and Precipitation in Europe, Earth's Future, 12, e2023EF004188, https://doi.org/10.1029/2023EF004188.
6. Kim, H., Villarini, G., Jane, R., Wahl, T., Misra, S., and Michalek, A. (2023). On the generation of high-resolution probabilistic design events capturing the joint occurrence of rainfall and storm surge in coastal basins, *International Journal of Climatology*, 43(2), 761–771, https://doi.org/10.1002/joc.7825.
7. Jane, R., Wahl, T., Santos, V. M., Misra, S. K., and White, K. D. (2022). Assessing the Potential for Compound Storm Surge and Extreme River Discharge Events at the Catchment Scale with Statistical Models: Sensitivity Analysis and Recommendations for Best Practice, *Journal of Hydrologic Engineering*, 27(3), 04022001, https://doi.org/10.1061/(ASCE)HE.1943-5584.0002154.
8. Jane, R., Cadavid, L., Obeysekera, J., and Wahl, T. (2020). Multivariate statistical modelling of the drivers of compound flood events in South Florida, *Natural Hazards and Earth System Sciences*, 20, 2681–2699, https://doi.org/10.5194/nhess-20-2681-2020.