

Dr. Edward Tiernan

Engineer

Southern California Coastal Water Research Project

Education

Ph.D., Environmental and Water Resources Engineering, University of Texas at Austin, Austin, TX. 2022

M.S., Environmental and Water Resources Engineering, University of Texas at Austin, Austin, TX. 2018

B.S., Civil and Environmental Engineering, University of Virginia, Charlottesville, VA. 2016

Professional Experience

Engineer, Southern California Coastal Water Research Project. Costa Mesa, CA. 2022-present

Graduate Research Assistant, University of Texas at Austin. Austin, TX. 2016-2022

Geochemical Modeler, Lawrence Berkeley National Laboratory. Berkeley, CA. 2019

HPC Hydraulic Modeler, Consortium of Universities for the Advancement of Hydrologic Sciences, Inc. (CUAHSI). Tuscaloosa, AL. 2017

Paleohydrology Researcher, Peruvian Ministry of Culture. Cusco

Teaching Assistant, University of Texas at Austin. Austin, TX. 2016-2018

Teaching Assistant, University of Virginia. Charlottesville, VA. 2014-2016

Honors and Awards

Editor's Choice Award - ASCE Journal of Sustainable Water in the Built Environment, August 2024 (<https://doi.org/10.1061/JSWBAY.SWENG-552>)

1st Place, University Forum at Texas Water - Virtual, 2020 & 2021

2nd Place, Storm Water Management Conference, South Padre Island, TX. 2019

3rd Place, International Conference on Water Management and Modeling (ICWMM), Ontario, Canada, 2022

Excellence in Research Award for Civil, Architectural, and Environmental Engineering, Graduate, and Industry Networking Event (GAIN) at UT Austin, 2018, 2020

Professional Societies and Certifications

American Society of Civil Engineers (ASCE) - Affiliate Member, 2022-present

International Association for Hydro-Environment Engineering and Research (IAHR) - Member, 2022-present

Urban Water Resources Research Council (UWRRC) Stormwater Modeling Committee Member, 2018-present

Tools and Applications

Flow-weighted Compositing and Event Mean Concentration Calculator (FWC-EMC) - https://sccwrp.shinyapps.io/FWC_EMC_Calculator/

BMP Performance Index - https://sccwrp.shinyapps.io/bmp_eval_dev/

SCCWRP Rainfall Generator - <https://osf.io/2b4vh/>

Network partitioning algorithm (BIPquick) - <https://github.austin.utexas.edu/edt489/BIPQuick>

Selected Presentations and Conference Proceedings

Tiernan, E., Fassman-Beck, E., Schiff, K. Measuring Runoff Water Quality Improvement from Street Sweeping in Southern California. Oral Presentation. CASQA 2024. Sacramento, CA.

Tiernan, E., Fassman-Beck, E., Lombardo, N. An Open-Source Tool for Flow-Weighting and Calculating Event Mean Concentrations. Oral Presentation. EWRI Congress 2023. Henderson, NV.

Journal Articles

Tiernan, E., E. Fassman-Beck, N. Lombardo. 2024. Effects of Postprocessing Decisions on Flow-Weighted Event Mean Concentrations. *Journal of Sustainable Water in the Built Environment* 10:04024005.

Hodges, B.R., S. Sharior, E. Tiernan, E. Jenkins, G. Riano-Briceno, C. Davila-Hernandez, E. Madadi-Kandjani, C.W. Yu. 2024. Introducing SWMM5+. *Journal of Environmental Engineering* 150:02524003.

Sharior, S., Hodges, B. R., Yu, C.-W., Tiernan, E. D., Jenkins, E., Riano-Briceno, G., Davila-Hernandez, C. E., Lokhandwala, A., & Brashear, C. (2023). SWMM5+ User Manual Version 1.0 [Dataset]. Texas Data Repository. <https://doi.org/10.18738/T8/OWQOZ3>

Hodges, B. R., Sharior, S., Jenkins, E., Tiernan, E. D., & Riano-Briceno, G. (2023). SWMM5+ Programmer Manual Version 1.0 [Dataset]. Texas Data Repository. <https://doi.org/10.18738/T8/ZA3VR8>

Davila-Hernandez, C. E., Hodges, B. R., Sharior, S., & Jenkins, E. (2023). SWMM5+ Installation Manual Version 1.0 [Dataset]. Texas Data Repository. <https://doi.org/10.18738/T8/3PQWSA>

Tiernan, E. D., & Hodges, B. R. (2022). A topological approach to partitioning flow networks for parallel simulation. *Journal of Computing in Civil Engineering*, 36(4). [https://doi.org/10.1061/\(asce\)cp.1943-5487.0001020](https://doi.org/10.1061/(asce)cp.1943-5487.0001020).

Tiernan, E. D., Yu C-W., Riano-Briceno, G., Sharior, S., Jenkins E., Brashear, C., & Hodges, B. R. (2022). Hydrological comparison of open-source numerical models for the Saint-Venant equations on regional river basins. **Manuscript in preparation for submission to the journal of Hydrological and Earth Systems Sciences (HESS).

Tiernan, E. D., Yu C-W., Riano-Briceno, G., Jenkins E., & Hodges, B. R. (2022). A methodology for generalizing open-channel network models between modeling paradigms. **Manuscript in preparation for submission to Journal of Open Source Software.

Sharior, S., Riano-Briceno, G., Tiernan, E. D., Yu C-W., Jenkins E., & Hodges, B. R. (2022). Computational Performance of a Parallelized Saint-Venant Solver Compared with EPA SWMM. **Manuscript in preparation for submission to the Journal of Computing in Civil Engineering.

Hodges, B. R., Yu, C-W. Tiernan, E. D., Riano-Briceno, G., Sharior, S., Jenkins E. (2021). SWMM5+ Alpha Release Documentation. Texas Data Repository V2. DOI: <https://doi.org/10.18738/T8/WQZ5EX>.

Technical Reports

Fassman-Beck, E., E. Tiernan, D. Xin, A.C. Mehinto, V. McGruer, S. Sauers. 2025. Development of a Method to Measure the Impacts of Street Sweeping on Wet Weather Runoff Water Quality. Technical Report 1411. Southern California Coastal Water Research Project. Costa Mesa, CA.

Fassman-Beck, E., E. Tiernan, D. Nguyen, R. Butler. 2024. Turf Replacement BMPs to Reduce Dry and Wet Weather Runoff. Technical Report 1391. Southern California Coastal Water Research Project. Costa Mesa, CA.