Gerhard Schoener, PhD
Gerald May Department of Civil, Construction & Environmental Engineering
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EDUCATION

PhD, Engineering, University of New Mexico
Dissertation: Soil Moisture Dependent Runoff in a Dryland Region: An Investigation of the Role of Antecedent Conditions, Monitoring, and Modeling Strategies — 2021
Master of Water Resources (MWR), University of New Mexico — 2010
BS, Forestry, Georg-August-University (Göttingen, Germany) — 2005

ACADEMIC EXPERIENCE

Assistant Professor, University of New Mexico, Gerald May Department of Civil, Construction & Environmental Engineering — 2025-present
Research Assistant Professor (LAT), University of New Mexico, Gerald May Department of Civil, Construction & Environmental Engineering — 2023-2025
Adjunct Professor, University of New Mexico, Gerald May Department of Civil, Construction & Environmental Engineering & UNM Water Resources Program — 2022-2025

PROFESSIONAL EXPERIENCE

Senior Hydrologist, Southern Sandoval County Arroyo Flood Control Authority (SSCAFCA) — 2017-2025
Watershed Scientist, Southern Sandoval County Arroyo Flood Control Authority (SSCAFCA) — 2008-2017

HONORS AND AWARDS

Best Technical Note Award, Journal of Hydrologic Engineering, **2025**
Doctoral Dissertation Defense Passed with Distinction, **2021**
Transect of the Americas PATHWAYS Fellowship, **2020**
Elvidio V. Diniz, P.E. UNM Water Resources Memorial Scholarship, **2019-2020**
Master's Examination Passed with Distinction, **2010**
Cusanuswerk Study Abroad Masters Fellowship, **2007-2010**
Cusanuswerk Undergraduate Fellowship, **2005**
German Academic Scholarship Foundation Undergraduate Fellowship, **2005**

PEER-REVIEWED JOURNAL ARTICLES

* Student advised or co-advised by Gerhard Schoener

Rassa, S.*, **Schoener, G.** and Fleming, M. (2024). Balancing Complexity, Parsimony, and Applicability in Hydrologic Modeling: A Comparative Evaluation of Four Infiltration Models across Parameterization Scenarios. *Journal of Hydrologic Engineering*, 29(6), p.05024019.

Schoener, G., Rassa, S., Fleming, M. and Gatterman, D. (2024). Closure to "Infiltration Model Parameters from Rainfall Simulation for Sandy Soils". *Journal of Hydrologic Engineering*, 29(5), p.07024002.

Schoener, G., Rassa, S., Fleming, M., Gatterman, D. and Montoya, J. (2024). Infiltration model parameters from rainfall simulation for sandy soils. *Journal of Hydrologic Engineering*, 29(1), p.06023001.

Schoener, G., Muñoz, E., Arumí, J.L. and Stone, M.C. (2022). Impacts of climate change induced sea level rise, flow increase and vegetation encroachment on flood hazard in the Biobío River, Chile. *Water*, 14(24), p.4098.

Schoener, G. (2022). Impact of urbanization and stormwater infrastructure on ephemeral channel transmission loss in a semiarid watershed. *Journal of Hydrology: Regional Studies*, 41, p.101089.

Schoener, G., Stone, M. C., & Thomas, C. (2021). Comparison of seven simple loss models for runoff prediction at the plot, hillslope and catchment scale in the semiarid southwestern US. *Journal of Hydrology*, 598, 126490.

Schoener, G. and Stone, M.C. (2020). Monitoring soil moisture at the catchment scale–a novel approach combining antecedent precipitation index and radar-derived rainfall data. *Journal of Hydrology*, 589.

Schoener, G. and Stone, M.C. (2019). Impact of antecedent soil moisture on runoff from a semiarid catchment. *Journal of Hydrology*, 569, pp.627-636.

Schoener, G. (2018). Urban runoff in the US Southwest: importance of impervious surfaces for small-storm hydrology. *Journal of Hydrologic Engineering*, 23(2).

Schoener, G. (2018). Time-lapse photography: low-cost, low-tech alternative for monitoring flow depth. *Journal of Hydrologic Engineering*, 23(2).

Schoener, G. (2017). Quantifying transmission losses in a New Mexico ephemeral stream: A losing proposition. *Journal of Hydrologic Engineering*, 22(3).

SELECTED CONFERENCE PRESENTATIONS

Schoener, G. Effects of Slope, Compaction, Gravel Mulch and Landscape Fabric on Infiltration for Sandy Soils. New Mexico Watershed and Dam Owners Coalition Conference, Taos, NM, 2025.

Schoener, G. Improving Runoff Predictions in Arid Regions. Land and Water Summit, Albuquerque, NM, 2025.

Schoener, G. Predicting Runoff is Complicated – Lessons from Field Experiments and their Application in Practice. Land and Water Summit, Albuquerque, NM, 2024.

Schoener, G. Impact of Urbanization and Stormwater Infrastructure on Transmission Losses in a Semiarid Watershed. Arizona Floodplain Management Association (AFMA) Fall Conference, Tempe, AZ, 2022.

Schoener, G. and Stone, M. Stressors, Ecosystem Services, and Restoration Strategies for a Central New Mexico Arroyo. Environmental & Water Resources Institute (EWRI) International Low Impact Development Conference, Bethesda, MD (conference held virtually), 2020. https://ascelibrary.org/doi/abs/10.1061/9780784483114.011

Thomas, C. and **Schoener, G.** Watersheds have Memory: How Soil Moisture Affects Runoff and Drainage Policy. National Association of Flood and Stormwater Management Agencies (NAFSMA) Annual Meeting, Los Angeles, CA, 2019.

Schoener, G. Impact of Antecedent Soil Moisture on Runoff – A New Mexico Case Study. Association of State Floodplain Managers (ASFPM) Arid Regions Conference, Albuquerque, NM, 2019.

Schoener, G. Importance of Impervious Surfaces for Small Storm Hydrology. 20th Annual EPA Region 6 Stormwater Conference, Albuquerque, NM, 2018.

Schoener, G. Transmission Losses in Arroyos and their Impact on Water Quality. StormCon, Indianapolis, IN, 2016.

Schoener, G. Concrete Channel vs. Natural Arroyo: Stormwater Management Strategies and Potential Impacts on Water Quality in the Greater Albuquerque Area. 16th Annual EPA Region 6 Stormwater Conference, Fort Worth, TX, 2014.

FUNDED PROPOSALS

Project Title: **Field data collection and comparison of rainfall-runoff models to improve flash flood prediction**
Source of Support: Southern Sandoval County Arroyo Flood Control Authority (SSCAFCA)
Total Award Amount: $ 50,785
PI: Gerhard Schoener
Duration: 08/01/2025 - 06/30/2026

Project Title: **Parameter Estimation and Model Validation for Rainfall Runoff Models – Continuation**
Source of Support: Southern Sandoval County Arroyo Flood Control Authority (SSCAFCA)
Total Award Amount: $ 32,249
PI: Gerhard Schoener
Duration: 08/14/2023 - 08/15/2024

TEACHING

Intructor

WR 573 Field Methods, co-taught with Dr. Becky Bixby
Fall 2024. Effectiveness: 4.8/5, Approachability: 5/5.
Fall 2023. Effectiveness: 5/5, Approachability: 5/5.
Fall 2022. Effectiveness: 4/5, Approachability: 4.86/5.

WR 572 Models, co-taught with Dr. Jingjing Wang
Spring 2025. Effectiveness: 4.83/5, Approachability: 4.92/5.
Spring 2024. Effectiveness: 4.92/5, Approachability: 5/5.

CE 545 Open Channel Hydraulics
Spring 2023. Effectiveness: 5/5, Approachability: 5/5.

HEC-HMS Training (one-day course on hydrologic modeling using HEC-HMS software)

Fall 2024

Fall 2022

Guest Lecturer

CE 335 Environmental and Water Resources Engineering. Three lectures. Topic: Urban Hydrology.

Spring 2019

MENTORING

Advisor or Co-Advisor

Completed

Sara Rassa (co-advised with Dr. Mark Stone and Dr. Julie Coonrod), MS completed Spring 2024

Program: MS, Water Resources Engineering

Thesis: Optimizing Flash Flood Prediction in Arid and Semi-Arid Regions: A Comparative Evaluation of Infiltration Models and Parameter Estimation Guidance Across Spatial Scales

Honors/Awards: Master's Examination Passed with Distinction, Zancada Graduate Fellowship, UNM Office of the Vice President for Research Certificate of Excellence, 2025 Best Technical Note Award, Journal of Hydrologic Engineering (Co-Author).

Samuel Coulter (co-advised with Dr. González-Pinzón), MS completed Summer 2025

Program: MS, Water Resources Engineering

Thesis: Improving Infiltration Model Performance in Arid and Urban Regions

Honors/Awards: 2nd place, 2025 UNM Graduate Poster Showcase.

Current

Pramesh Bhaila, 2025-present

Program: MS, Water Resources Engineering

Farzaneh Soltani, 2025-present

Program: PhD, Water Resources Engineering

Chris Frost, 2025-present

Program: PhD, Water Resources Engineering

Committee Member

Alejandro Corral Hernandez, Water Resources Program, MWR completed Fall 2024

PROFESSIONAL SERVICE

Reviewer for Journals: Catena, Hydrology and Earth System Sciences, Journal of Arid Environments, Journal of Hydrologic Engineering, Journal of Hydrology, Journal of Hydrology – Regional Studies, Journal of Sustainable Water in the Built Environment, Journal of the American Water Resources Association, New Mexico Water Resources Research Institute, Paddy and Water Environment, River Research and Applications, Smart Agricultural Technology, Stochastic Environmental Research and Risk Assessment, Water Resources Research.

Member of Project Advisory Committee, Innovative Resources: Cyberinfrastructure and community to leverage ground-based imagery in ecohydrological studies sponsored by NSF (PI Troy Gilmore), 2025-present

LANGUAGES

German (fluent), English (fluent), Spanish (conversational).