JEFFREY D. NIEMANN

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EDUCATION

Ph.D. in Civil and Environmental Engineering	Massachusetts Institute of Technology	(2001)
M.S. in Civil and Environmental Engineering	Massachusetts Institute of Technology	(1997)
B.S. with High Distinction in Civil Engineering	University of Colorado, Boulder	(1993)

EXPERIENCE

Professor, Dept. of Civil and Environmental Engineering, Colorado State University
Fort Collins, Colorado (2018-present)
Associate Professor, Dept. of Civil and Environmental Engineering, Colorado State University
Fort Collins, Colorado (2009-2018)
Assistant Professor, Dept. of Civil and Environmental Engineering, Colorado State University
Fort Collins, Colorado (2003-2009)
Assistant Professor, Dept. of Civil and Environmental Engineering, Pennsylvania State University
University Park, Pennsylvania (2000-2003)
Research Assistant, Dept. of Civil and Environmental Engineering, Massachusetts Institute of Technology
Cambridge, Massachusetts (1994-2000)
Research Assistant, Water Group, International Institute for Applied Systems Analysis (IIASA)
Laxenburg, Austria (1993-1994)
Undergraduate Research Assistant, Center for Advanced Decision Support for Water and Env. Systems
Boulder, Colorado (1992-1993)

EXPERTISE

Disciplines	Surface hydrology (soil moisture, snowpack, evapotranspiration, and streamflow) Geomorphology (landscape evolution and river networks) Rural water supply and on-site wastewater treatment
Methods	Modeling (physically based, stochastic, and machine learning) Remote sensing (SMAP, Landsat, Sentinel, Planet CubeSat, and GRACE) In situ sensors (cosmic ray neutron rovers, hyperspectral sensors, time-domain reflectometers, etc.)
Applications	Vehicle mobility, floods, dam safety, climate change impacts, wildfire impacts, agricultural water management, uncertainty quantification, and WASH

LICENSURE

Professional Engineer
Colorado (38581, Initial License Date: 7/30/2004)
Pennsylvania (PE 062053, Initial License Date: 6/5/2003, Inactive Status)

Honors

Journal Article Selected for Eos Spotlight
Water Resources Research, American Geophysical Union, Washington, D.C. (2022)
Finalist for Best Faculty Award
Rams Without Borders, Fort Collins, Colorado (2022)
Borland Chair of Hydrology (3-year appointment)
Dept. of Civil and Environmental Engineering, Colorado State University, Fort Collins, Colorado (2019)
Faculty Award for Outstanding Performance
Dept. of Civil and Environmental Engineering, Colorado State University, Fort Collins, Colorado (2019)
Journal Article Awarded Editor's Choice
Journal of Hydrologic Engineering, American Society of Civil Engineers, Reston, Virginia (2018)
Nominated for Graduate Advising and Mentorship Award
Graduate Student Council, Colorado State University, Fort Collins, Colorado (2018)
Faculty Award for Excellence in Teaching
Dept. of Civil and Environmental Engineering, Colorado State University, Fort Collins, Colorado (2016)
Nominated for Best Professor of the Year
Engineering College Council, Colorado State University, Fort Collins, Colorado (2015)
Faculty Award for Excellence in Service
Dept. of Civil and Environmental Engineering, Colorado State University, Fort Collins, Colorado (2014)
President's Volunteer Service Award
USAID Office of Volunteers for Prosperity / Eng. Ministries International, Washington, D.C. (2011)
George T. Abell Award for Outstanding International Contributions
College of Engineering, Colorado State University, Fort Collins, Colorado (2011)
Faculty Award for Excellence in Teaching
Dept. of Civil and Environmental Engineering, Colorado State University, Fort Collins, Colorado (2011)
Borland Chair of Hydrology (3-year appointment)
Dept. of Civil and Environmental Engineering, Colorado State University, Fort Collins, Colorado (2010)
Faculty Award for Excellence in Teaching
Dept. of Civil and Environmental Engineering, Colorado State University, Fort Collins, Colorado (2007)
Certificate of Appreciation for Contributions and Service to International Education
Office of International Programs, Colorado State University, Fort Collins, Colorado (2005)
Presidential Early Career Award for Scientists and Engineers (PECASE)
President of the United States, Washington, D.C. (2002)
Martin Fellowship for Sustainability
Alliance for Global Sustainability, Cambridge, Massachusetts (1995)
Traineeship in Hydrology Fellowship
Massachusetts Institute of Technology, Cambridge, Massachusetts (1994)
Chancellor's Recognition Award
University of Colorado, Boulder, Colorado (1993)
Outstanding Senior at the University of Colorado
American Society of Civil Engineers, Denver, Colorado (1993)
Tau Beta Pi Membership
Tau Beta Pi, Boulder, Colorado (1992)

RESEARCH

External Grants Awarded as Principal Investigator

1. Demonstration and Evaluation of a Cosmic Ray Neutron Rover as an Emerging Snow Monitoring Technology for Improved Water Management, *U.S. Bureau of Reclamation*, 3 years, $672,267 (2023)
2. Enhanced Terrain Mobility Analysis System: Testing and Uncertainty Quantification, *Army Research Laboratory*, 1.5 years, $517,000 (2021)
3. Update of Hydrologic Parameter Estimation Guidelines in Support of Dam Safety Spillway Evaluations, *Colorado Water Conservation Board*, 1 year, $50,000 (2020)
4. Multi-Sensor Estimation of Daily Rootzone Soil Moisture at a Fine-Resolution for Agricultural Regions, *Agricultural Experiment Station*, 3 years, $90,000 (2020)
5. Evaluating Nonlinear Methods to Generate Flood Hydrographs for Bridge Scour Applications, *Mountain-Plains Consortium*, 1 year, $58,000 (2019)
6. Quantifying Impacts of Hydrologic Parameter Uncertainty on Dam Safety Analysis, *Colorado Water Conservation Board*, 1 year, $50,000 (2018)
7. Travel Grant for Participation in Cooperative Demonstration of Technology, *Department of Defense Army Small Business Innovative Research*, 1 year, $1,940 (2018)
8. Terrain Mobility Analysis Model (TMAM), *Leonard Wood Institute*, 2 years, $250,000 (2018)
9. Terrain Ponding Integration with PAWTL, *Department of Defense Army Small Business Innovative Research*, 1 year, $10,000 (2017)
10. Quantifying Mountain Basin Runoff Mechanisms for Better Hydrologic Design of Bridges and Culverts, *Mountain-Plains Consortium*, 5 years, $50,000 (2017)
11. Mountain Basin Hydrologic Response Study, *Colorado Water Conservation Board*, 1 year, $50,000 (2017)
12. Determination of Terrain Ponding for Tactical Logistics and Mobility Support (subcontract from $1,000,000 grant to Technology Service Corporation, J.D. Niemann, Co-Investigator and Science Lead), *Department of Defense Army Small Business Innovative Research*, 2 years, $400,000 (2016)
13. Comparative Evaluation of an Enhanced Remote-Sensing Method for Root-Zone Soil Moisture, Colorado *Agricultural Experiment Station*, 3 years, $90,000 (2016)
14. Incorporating River Network Structure for Improved Hydrologic Design of Transportation Infrastructure, *Mountain-Plains Consortium*, 3 years, $29,000 (2014)
15. SBIR Phase II: Determination of Terrain Ponding for Logistics Emplacement and Planning (subcontract from $1,000,000 grant to Technology Service Corporation, J.D. Niemann, Co-Investigator and Science Lead), *Department of Defense Army Small Business Innovative Research*, 2 years, $400,000 (2014)
16. SBIR Phase I Option: Determination of Terrain Ponding for Logistics Emplacement and Planning (subcontract from $50,000 grant to Technology Service Corporation, J.D. Niemann, Co-Investigator and Science Lead), *Department of Defense Army Small Business Innovative Research*, 4 months, $14,500 (2014)
17. Enhanced Remote-Sensing of Root-Zone Soil Moisture Based on a Physical Relationship with Evaporative Fraction, Colorado *Agricultural Experiment Station*, 3 years, $90,000 (2013)
18. NRCS Hydrology Tool, U.S. Department of Agriculture Agricultural Research Service, 13 months, $78,500 (2013)
19. SBIR Phase I: Determination of Terrain Ponding for Logistics Emplacement and Planning (subcontract from $100,000 grant to Technology Service Corporation, J.D. Niemann, Co-Investigator and Science Lead), *Department of Defense Army Small Business Innovative Research*, 6 months, $29,500 (2013)

20. SBIR Phase I: Downscaling Techniques for Ground State Information (subcontract from $100,000 grant to Riverside Technology, J.D. Niemann, Co-Investigator and Science Lead), *Department of Defense Army Small Business Innovative Research*, 6 months, $33,000 (2012)
21. Design and Testing of Computationally Efficient Methods to Evaluate Parameter and Model Uncertainties, *U.S. Bureau of Reclamation*, 5 years, $200,000 (2012)
22. Development of a Method to Downscale Soil Moisture Estimates based on Topography and Other Site Characteristics, *Army Research Office Terrestrial Sciences Program*, 3 years, $239,900 (2011)
23. Integration of Ponding Estimates into T-IWEDA (Phase IV), *Center for Geosciences / Atmospheric Research, Department of Defense*, 2 years, $42,830 (2011)
24. Evaluation of a Method to Estimate Root-Zone Soil Moisture Based on Optical and Thermal Satellite Imagery, *Agricultural Experiment Station*, 3 years, $99,000 (2010)
25. Integration of Ponding Estimates into T-IWEDA (Phase III), Center for Geosciences / Atmospheric Research, Department of Defense, 1 year, $57,191 (2010)
26. Evaluation and Application of a Soil Moisture Downscaling Method for Mobility Assessment, *Army Research Office, Department of Defense*, 8 months, $50,000 (2010)
27. Integration of Ponding Estimates into T-IWEDA (Phase II), *Center for Geosciences / Atmospheric Research, Department of Defense*, 1 year, $47,196 (2009)
28. Integration of Ponding Estimates into T-IWEDA, *Center for Geosciences / Atmospheric Research, Department of Defense*, 1 year, $16,056 (2009)
29. Observing and Modeling Non-Beneficial Evaporative Upflux from Shallow Ground Water under Uncultivated Land in an Irrigated River Valley, *Colorado Water Institute*, 1 year, $40,000 (2008)
30. Climatic, Topographic, and Vegetative Controls on Soil Moisture in a Semi-Arid, Mountainous Catchment, *NSF Water Research Experience for Undergraduates (REU)*, 1 year, $500 and Stipend for 1 undergrad for 8 weeks (2008)
31. Analyzing the Dependence of Evapotranspiration on Shallow Water Tables Using Remote Sensing and Field Monitoring, *NSF Water Research Experience for Undergraduates (REU*), 1 year, $500 and Stipend for 1 undergrad for 8 weeks (2008)
32. Implementing a Framework to Assess Uncertainty in Hydraulic and Hydrologic Models, *U.S. Bureau of Reclamation*, 4 years, $154,996 (2007)
33. Instrumentation to Monitor Soil Moisture in a Semi-Arid Climate: Characterizing Interactions between Soil Moisture, Vegetation, and Gullied Topography, *Department of Defense University Research Instrumentation Program*, 1 year, $60,176 (2007)
34. Characterizing Non-Beneficial Evaporative Upflux from Shallow Groundwater Under Uncultivated Land in an Irrigated River Valley, *Colorado Water Resources Research Institute*, 1 year, $49,942 (2007)
35. Estimation of Soil Moisture in Intensively Irrigated Areas Using Remote Sensing, *Agricultural Experiment Station*, 3 years, $104,447 (2007)
36. Uncertainty Analysis of Simulated Erosion and Sedimentation Patterns in the Middle Rio Grande, *NSF Water Research Experience for Undergraduates (REU)*, 1 year, $500 and Stipend for 1 undergrad for 8 weeks (2007)
37. Estimating Evapotranspiration from Sites with Shallow Water Tables Using Satellite Observations, *NSF Water Research Experience for Undergraduates (REU)*, 1 year, $500 and Stipend for 1 undergrad for 8 weeks (2007)
38. Scaling Properties and Spatial Interpolation of Soil Moisture (Continuation), *Presidential Early Career Award for Scientists and Engineers (PECASE), Department of Defense*, 4 years, $400,000 (2003)
39. Scaling Properties and Spatial Interpolation of Soil Moisture, Presidential Early Career Award for Scientists and Engineers (PECASE), Department of Defense, 1 year, $100,000 (2001)

External Grants Awarded as Co-Investigator

1. Making Every Drop Count: Short-Term, Crop-Specific Evapotranspiration Forecasts for Proactive Scheduling of Variable Rate Irrigation Systems, *Cyber-Physical Systems, National Science Foundation*, Pallickara, S., Principal Investigator, 3 years, $1199846 (2022)
2. Terrain Strength Estimation Using Remote Sensing for Route Planning and Real Time Autonomous Mobility, *U.S. Army Combat Capabilities Development Command*, J. Scalia Principal Investigator, 6 months, $173,000 (2022)
3. Hydrologic and Water Quality Data Collection in Colorado's Upper Arkansas River Basin, *Colorado Water Conservation Board*, Gates, T.K. Principal Investigator, 1 year, $9,430 (2017)
4. Data Collection and Analysis in Support of Improved Water Management in the Arkansas River Basin, Phase 3, *Colorado Water Institute*, Gates, T.K. Principal Investigator, 1 year, $50,000 (2015)
5. Data Collection and Analysis in Support of Improved Water Management in the Arkansas River Basin, Phase 2, *Colorado Water Institute*, Gates, T.K. Principal Investigator, 1 year, $50,000 (2014)
6. Data Collection and Analysis in Support of Improved Water Management in the Arkansas River Basin, *Colorado Water Institute*, Gates, T.K. Principal Investigator, 1 year, $50,000 (2013)
7. Concurso Becas de Postgrado, *Pontificia Universidad Católica*, Gironás, J. Principal Investigator, 1 year, $28,737 (2012)
8. Data Assessment and Collection in Support of Improved Water Management in the Arkansas River Basin, *Colorado Water Conservation Board*, Gates, T.K. Principal Investigator, 4 years, $600,000 (2009)
9. Examining Methods for Efficient Estimation of Mountain Stream Flows using an Acoustic Doppler Velocimeter, *NSF Water Research Experience for Undergraduates (REU)*, Gates, T.K. Principal Investigator, 1 year, $500 and Stipend for 1 undergrad for 8 weeks (2009)
10. Well Drilling Services in Support of Evapotranspiration Groundwater Studies, *U.S. Bureau of Reclamation*, Gates, T.K. Principal Investigator, 1 year, $20,000 (2008)

External Grants Awarded as Lead Author

1. Statistical Characterization of River Basins with Application to Topographic Interpolation, *Army Research Office Terrestrial Sciences Program*, Bras, R.L. Principal Investigator, 3 years, $203,481 (2000)

Internal Grants Awarded as Principal Investigator

1. Multi-Depth Soil Moisture Measurement System, *Borland Research Equipment Endowment*, 1 year, $6,825 (2022)
2. Borland Chair of Hydrology, *Department of Civil and Environmental Engineering*, 2 years, $50,000 (2019)
3. Request for Purchase of Portable Hydra Probe Soil Moisture Sensors with Built-In Survey-Grade Global Positioning Systems, *Borland Research Equipment Endowment*, 1 year, $8,000 (2016)
4. Request for Computational Resources to Support Water-Related Research Efforts, *Borland Research Equipment Endowment*, 1 year, $1,513 (2015)
5. Research Equipment and Instrumentation in Support of Water and Water-Related Environmental Research Efforts, *Borland Research Equipment Endowment*, 1 year, $1,816 (2014)
6. Research in Hydrologic Modeling and Partnership with Pontificia Universidad Católica, Santiago, Chile, *Office of International Programs*, 6 months, $2,000 (2013)
7. Borland Chair of Hydrology (Continuation), *Department of Civil and Environmental Engineering*, 1 year, $20,000 (2012)
8. Borland Chair of Hydrology, *Department of Civil and Environmental Engineering*, 2 years, $50,000 (2010)

9. Request for Purchase of Sapflow/Heat-Flux Sensors for Measurement of Transpiration Rates, *Borland Research Equipment Endowment*, 1 year, $14,300 (2009)
10. Request for Purchase of a Portable Time Domain Reflectometry Unit for Measurement of Soil Moisture, *Borland Research Equipment Endowment*, 1 year, $5,781 (2007)
11. Proposal for Research Equipment and Instrumentation: Purchase of a Portable Trimble GX DR200+ 3D laser scanner, *Borland Research Equipment Endowment*, 1 year, $29,995 (2006)

Internal Grants Awarded as Co-Investigator

1. Research Equipment and Instrumentation in Support of Water and Water-Related Environmental Research Efforts, *Borland Research Equipment Endowment*, Taghvaeian, S. Principal Investigator, 1 year, $16,295 (2013)
2. Groundwater Low-Flow Sampling Pump and Peristaltic Pump, *Borland Research Equipment Endowment*, Gates, T.K. Principal Investigator, 1 year, $3,777 (2009)
3. Request for Instrumentation in Support of Research and Educational Activities in Hydrology and Hydraulics, *Borland Research Equipment Endowment*, Ramirez, J. Principal Investigator, 3 years, $68,725 (2005)

Patents

Soil Moisture Downscaling using Topography, Soil, and Vegetation Data
Serial No.: 11,808,752, filed May 5, 2021, issued November 7, 2023

Soil Moisture Downscaling using Topography, Soil, and Vegetation Data
Patent No. 11,041,841, filed on October 19, 2016, issued June 22, 2021

Refereed Publications

1. Ukasha, M., J.D. Niemann, and J.A. Ramirez, 2023, "An Improved Rescaling Algorithm for Estimating Groundwater Depletion Rates Using the GRACE Satellite," *International Journal of Remote Sensing*, 44(3), 1069-1088, doi: 10.1080/01431161.2023.2174387.
2. Irvin, B.C., J.D. Niemann, M.A. Perry, K.E. Bauer, and W.T. McCormick III, 2023, "Parameter Estimation for Models of Major Rainfall Induced Floods in Ungaged Mountain Basins of Colorado," *Journal of Hydrology: Regional Studies*, 45, 101300, 1-22, doi: 10.1016/j.ejrh.2022.101300.
3. Giovando, J., and J.D. Niemann, 2022, "Wildfire Impacts on Snowpack Phenology in a Changing Climate within the Western U.S.," *Water Resources Research*, 58, e2021WR031569. doi: 10.1029/2021WR031569.
4. Ukasha, M., J.D. Niemann, and J.A. Ramirez, 2022, "Temporal Variations of NDVI and LAI and Interactions with Hydroclimatic Variables in a Large and Agro-Ecologically Diverse Region," *Journal of Geophysical Research Biogeosciences*, 127(4), e2021JG006395, doi: 10.1029/2021JG006395.
5. Sahaar, A.S., J.D. Niemann, and A. Elhaddad, 2022, "Using Regional Characteristics to Improve Uncalibrated Estimation of Rootzone Soil Moisture from Optical/Thermal Remote-Sensing," *Remote Sensing of Environment*, 273, 112982, doi: 10.1016/j.rse.2022.112982.
6. Chong, P., J. Gironas, and J.D. Niemann, 2022, "A Spatial Analysis of Dispersion Mechanisms in the Hydrologic Response Using a Spatially Distributed Travel Time Model," *Water Resources Research*, 58, doi: 10.1029/2021WR029891.
7. Timilsina, S., J.D. Niemann, S.L. Rathburn, F.K. Rengers, and P.A. Nelson, 2021, "Modeling Hydrologic Processes Associated with Soil Saturation and Debris Flow Initiation During the September 2013 Storm, Colorado Front Range," *Landslides*, 18(5), 1741-1759, doi: 10.1007/s10346-020-01582-5.

8. Woolridge, D.D., J.D. Niemann, M.A. Perry, K.E. Bauer, and W.T. McCormick III, 2020, "Identifying Runoff Production Mechanisms for Dam Safety Applications in the Colorado Front Range," *Journal of Hydrologic Engineering*, 05020016, doi: 10.1061/(ASCE)HE.1943-5584.0001958.
9. Sahaar, A.S., and J.D. Niemann, 2020, "Impact of Regional Characteristics on the Estimation of Root-Zone Soil Moisture from the Evaporative Index or Evaporative Fraction," *Agricultural Water Management*, 368, 106225, doi: 10.1016/j.agwat.2020.106225.
10. Pauly, M.J., J.D. Niemann, J. Scalia, T.R. Green, R.H. Erskine, A.S. Jones, and P.J. Grazaitis, 2020, "Enhanced Hydrologic Simulation May Not Improve Downscaled Soil Moisture Patterns without Improved Soil Characterization," *Soil Science Society of America Journal*, 84:672-689, doi: 10.1002/saj2.20052.
11. Czyzyk, K.A., D. Mirosi, A. Abdoulhak, S. Hassani, J.D. Niemann, and J. Gironás, 2020, "Impacts on Channel Network Type on the Unit Hydrograph," *Water*, 12, 669, 1-27, doi: 10.3390/w12030669.
12. Deshon, J.P., J.D. Niemann, T.R. Green, A.S. Jones, and P.J. Grazaitis, 2020, "Stochastic Analysis and Probabilistic Downscaling of Soil Moisture," *Journal of Hydrology*, 585, 124771, 1-13, doi: 10.1016/j.jhydrol.2020.124711.
13. Follum, M.L., J.D. Niemann, and S.R. Fassnacht, 2019, "A Comparison of Snowmelt-Derived Streamflow from Temperature-Index and Modified-Temperature-Index Snow Models," *Hydrologic Processes*, 33:3030-3045, doi: 10.1002/hyp.13545.
14. Pereira-Claren, A., J. Gironás, J.D. Niemann, P. Passalacqua, A. Mejia, and C. Escauriaza, 2019, "Planform Geometry and Relief Characterization of Drainage Networks in Steep Environments: An Analysis of Chilean Andean Basins," *Geomorphology*, 341, 46-64, doi: 10.1016/j.geomorph.2019.05.011.
15. Bunster, T., J. Gironás, and J.D. Niemann, 2019, "On the Influence of Upstream Flow Contributions in Spatially Distributed Travel Time Models for Hydrograph Prediction," *Water Resources Research*, 55, doi: 10.1029/2018WR024510.
16. Grieco, N.R., J.D. Niemann, T.R. Green, A.S. Jones, and P.J. Grazaitis, 2018, "Hydrologic Downscaling of Soil Moisture using Global Datasets without Site-Specific Calibration," *Journal of Hydrologic Engineering*, 23(11), 1-13, 04018048, doi:10.1061/(ASCE)HE.1943-5584.0001702.
17. Follum, M.L., J.D. Niemann, J. Parno, and C.W. Downer, 2018, "A Simple Temperature-Based Method to Estimate Heterogeneous Frozen Ground within a Distributed Watershed Model," *Hydrology and Earth System Sciences*, 22, 2669-2688, doi: 10.5194/hess-22-2669-2018.
18. Jung, J.Y., J.D. Niemann, and B.P. Greimann, 2018, "Combining Predictions and Assessing Uncertainty from Sediment Transport Equations using Multivariate Bayesian Model Averaging," *Journal of Hydraulic Engineering*, 144(4): 04018008, doi: 10.1061/(ASCE)HY.1943-7900.0001436.
19. Jung, J.Y., J.D. Niemann, and B.P. Greimann, 2017, "Modeling Input Errors to Improve Uncertainty Estimates for One-Dimensional Sediment Transport Models," *Stochastic Environmental Research and Risk Assessment*, 1-16, doi: 10.1007/s00477-017-1495-8.
20. Hoehn, D.C., J.D. Niemann, T.R. Green, A.S. Jones, and P.J. Grazaitis, 2017, "Downscaling Soil Moisture over Regions that Include Multiple Coarse-Resolution Grid Cells," *Remote Sensing of Environment*, 199(C), 187-200, doi: 10.1016/j.rse.2017.07.021.
21. Cowley, G.S., J.D. Niemann, T.R. Green, M.S. Seyfried, A.S. Jones, and P.J. Grazaitis, 2017, "Impacts of Precipitation and Potential Evapotranspiration Patterns on Downscaling Soil Moisture in Regions with Large Topographic Relief," *Water Resources Research*, 53(2), 1553-1574, doi: 10.1002/2016WR019907.
22. Follum, M.L., A.A. Tavakoly, J.D. Niemann, and A.D. Snow, 2016, "AutoRapid: A Model for Prompt Streamflow Estimation and Flood Inundation Mapping over Regional to Continental Extents," *Journal of the American Water Resources Association*, 1-20, doi: 10.1111/1752-1688.12476.
23. Coleman, M.L., T.R. Green, O. David, W.H. Merkel, Q.D. Quan, K. Rojas, and J.D. Niemann, 2016, "Deploying the WinTR-20 Computational Engine as a Web Service," *Applied Engineering in Agriculture*, 32(5), 601-608. doi:10.13031/aea.32.11258.

24. Alburn, N.E., J.D. Niemann, and A. Elhaddad, 2015, "Evaluation of a Surface Energy Balance Method Based on Optical and Thermal Satellite Imagery to Estimate Root-Zone Soil Moisture," *Hydrologic Processes*, 29, 5354-5368, doi: 10.1002/hyp.10562.
25. Follum, M.L., C.W. Downer, J.D. Niemann, S.M. Roylance, and C.M. Voyovich, 2015, "A Radiation-Derived Temperature-Index Snow Routine for the GSSHA Hydrologic Model," *Journal of Hydrology*, 529, 723-736, doi: 10.1016/j.jhydrol.2015.08.044.
26. Ranney, K.J., J.D. Niemann, B.M. Lehman, T.R. Green, and A.S. Jones, 2015, "A Method to Downscale Soil Moisture to Fine-Resolutions using Topographic, Vegetation, and Soil Data," *Advances in Water Resources*, 76, 81-96, doi: 10.1016/j.advwatres.2014.12.003.
27. Sabatine, S.M., J.D. Niemann, and B.P. Greimann, 2015, "Evaluation of Parameter and Model Uncertainty in Simple Applications of a 1D Sediment Transport Model," *Journal of Hydraulic Engineering*, 1-13, 04015002, doi: 10.1061/(ASCE)HY.1943-7900.0000992.
28. Traff, D.C., J.D. Niemann, S.A. Middlekauff, B.M. Lehman, 2015, "Effects of Woody Vegetation on Shallow Soil Moisture at a Semiarid Montane Catchment," *Ecohydrology*, 8, 935-947, doi: 10.1002/eco.1542.
29. Huang, X., and J.D. Niemann, 2014, "Simulating the Impacts of Small Convective Storms and Channel Transmission Losses on Gully Evolution," Military Geoscience in the Twenty-First Century, *Reviews in Engineering Geology*, The Geological Society of America, R.S. Harmon, S.E. Baker, and E.V. McDonald, editors, 131-146.
30. Werbylo, K.L., and J.D. Niemann, 2014, "Evaluation of Sampling Techniques to Characterize Topographically-Dependent Variability for Soil Moisture Downscaling," *Journal of Hydrology*, 516, 304-316, doi: 10.1016/j.jhydrol.2014.01.030.
31. Zuazo, V., J. Gironás, and J.D. Niemann, 2014, "Assessing the Impact of Travel Time Formulations on the Performance of Spatially Distributed Travel Time Methods Applied to Hillslopes," *Journal of Hydrology*, 519, 1315–1327, doi: 10.1016/j.jhydrol.2014.09.035.
32. Coleman, M.L., and J.D. Niemann, 2013, "Controls on Topographic Dependence and Time-Instability in Catchment-Scale Soil Moisture Patterns," *Water Resources Research*, 49, 1-18, doi:10.1002/wrcr.20159.
33. Busch, F.A., J.D. Niemann, and M.L. Coleman, 2012, "Evaluation of an EOF-Based Method to Downscale Soil Moisture Patterns Based on Topographical Attributes," *Hydrologic Processes*, 26, 2696-2709, doi: 10.1002/hyp.8363.
34. Coleman, M.L., and J.D. Niemann, 2012, "An Evaluation of Nonlinear Methods for Estimating Catchment-Scale Soil Moisture Patterns Based on Topographic Attributes," *Journal of Hydroinformatics*, 14, 3, 800-814, doi: 10.2166/hydro.2012.145.
35. Jung, K., J.D. Niemann, and X. Huang, 2011, "Under What Conditions Do Parallel River Networks Occur?" *Geomorphology*, 132, 260-271, doi: 10.1016/j.geomorph.2011.05.014.
36. Niemann, J.D., B.M. Lehman, T.K. Gates, N.U. Hallberg, and A. Elhaddad, 2011, "Impact of Shallow Groundwater on Evapotranspiration Losses from Uncultivated Land in an Irrigated River Valley," *Journal of Irrigation and Drainage Engineering*, 137, 501-512, doi: 10.1061/(ASCE)IR.1943-4774.0000356.
37. Ruark, M.D., J.D. Niemann, B.P. Greimann, and M. Arabi, 2011, "A Method for Assessing Impacts of Parameter Uncertainty in Sediment Transport Modeling Applications," *Journal of Hydraulic Engineering*, 137, 6, 623-636, doi: 10.1061/(ASCE)HY.1943-7900.0000343.
38. Gironás, J., J.D. Niemann, L.A. Roesner, F. Rodriguez, and H. Andrieu, 2010, "Evaluation of Methods for Representing Urban Terrain in Stormwater Modeling," *Journal of Hydrologic Engineering*, 15, 1, 1-14, doi: 10.1061/(ASCE)HE.1943-5584.0000142.
39. Melliger, J.J., and J.D. Niemann, 2010, "Effects of Gullies on Space-Time Patterns of Soil Moisture in a Semiarid Grassland," *Journal of Hydrology*, 389, 289-300, doi: 10.1016/j.jhydrol.2010.06.006.

40. Coleman, M.L, J.D. Niemann, and E.P. Jacobs, 2009, "Reconstruction of Hillslope and Valley Paleotopography by Application of a Geomorphic Model," *Computers and Geosciences*, 35, 1776-1784, doi: 10.1016/j.cageo.2008.07.006.
41. Gironás, J., J.D. Niemann, L.A. Roesner, F. Rodriguez, and H. Andrieu, 2009, "A Morpho-Climatic Instantaneous Unit Hydrograph Model for Urban Catchments Calculated from Digital Elevation Models," *Journal of Hydrology*, 377, 317-334, doi: 10.1016/j.jhydrol.2009.08.030.
42. Huang, X., and J.D. Niemann, 2008, "How do Streamflow Generation Mechanisms Affect Watershed Hypsometry?" *Earth Surface Processes and Landforms*, 33, 751-772, doi: 10.1002/esp.1573.
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Other Selected Technical Publications

1. Breverman, A.L., and J.D. Niemann, 2022, "Evaluating Nonlinear Methods for Flood Hydrograph Generation to Evaluate Bridge Scour," *Mountain-Plains Consortium Report 22-619* (peer-reviewed).
2. Woolridge, D.D., J.D. Niemann, M.A. Perry, K.E. Bauer, and W.T. McCormick III, 2020, "Quantifying Mountain Basin Runoff Mechanisms for Better Hydrologic Design," *Mountain-Plains Consortium Report 20-419* (peer-reviewed).
3. Czyzyk, K., D. Mirossi, and J.D. Niemann, 2020, "Incorporating River Network Structure for Improved Hydrologic Design of Transportation Infrastructure," *Mountain-Plains Consortium Report 20-412* (peer-reviewed).
4. Balling, O., M. Bradbury, J. Bruce, M. Cammarere, K. K. Choi, J. Dasch, C. Foster, M. Funk, N. Gaul, H. Hodges, A. Jain, P. Jayakumar, M. McCullough, J. Niemann, E. Ramyar, J. Scalia, T. Wasfy, B. Wojtysiak, 2018, "ATVT-248 Next-Generation NATO Reference Mobility Model (NRMM) Development," Eds.: J. Dasch and P. Jayakumar, *STO Technical Report AVT-248*.
5. Gates, T.K., G.H. Steed, J.D. Niemann, and J.W. Labadie, 2016, "Data for Assessing and Improving Water Management in Colorado's Arkansas River Basin: Hydrological and Water Quality Studies," *Colorado Water Institute Special Report No. 24*, Fort Collins, Colorado.
6. Werbylo, K.L., and J.D. Niemann, 2012, "Parameter Estimation Methods for the EMT Model," *Technical Report*, U.S. Army Research Office.
7. Steed, G.H., T.K. Gates, J.D. Niemann, and J.W. Labadie, 2011, "Appraising Surface Water Quantity and Quality in the Upper Arkansas River Basin in Chaffee County, Colorado," In: *Proceedings of American Geophysical Union Hydrology Days 2011*, pp. 155-166.
8. Niemann, J.D., T.K. Gates, N.U. Hallberg, and B.M. Lehman, 2009, "Estimating the Water Lost Due to Evaporative Upflux from Shallow Ground Water," In: *Colorado Water*, 26(3): 16-18.
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10. Niemann, J.D., N.U. Hallberg, and T.K. Gates, 2008, "Characterizing Non-Beneficial Evaporative Upflux from Shallow Groundwater under Uncultivated Land in an Irrigated River Valley," In: *Colorado Water*, 25(1): 13-17.
11. Huang, X., and J.D. Niemann, 2005, "Drainage Networks," In: *Water Encyclopedia*, J.H. Lehr, J. Keeley, J.K. Lehr, and T.B. Kingery, Editors, John Wiley and Sons.
12. Niemann, J.D., and E. Kirby, 2003, "2002 Geomorphology Highlights," In: *Geotimes*, American Geological Institute, July Issue, pp. 14-15.
13. Niemann, J.D., 2000, "Scaling, Modeling, and Interpolation of Fluvially Eroded Topography," *Ph.D. Dissertation*, Massachusetts Institute of Technology, Cambridge, Massachusetts.

14. Niemann, J.D., R.L. Bras, and D. Veneziano, 1997, "Channel Network Growth and River Basin Morphology," *Ralph M. Parsons Laboratory, Technical Report #343*, Massachusetts Institute of Technology, Cambridge, Massachusetts.
15. Niemann, J.D., R.L. Bras, and D. Veneziano, 1997, "Channel Network Growth and River Basin Morphology," *Master of Science Thesis*, Massachusetts Institute of Technology, Cambridge, Massachusetts.
16. Niemann, J.D., K. Strzepek, and D. Yates, 1994, "Impacts of Spatial and Temporal Data on a Climate Change Assessment of Blue Nile Runoff," Working Paper WP-94-44, International Institute for Applied Systems Analysis, Laxenburg, Austria.

Research Presentations

1. Niemann, J.D., October 2023, "Water and Sanitation for a Hospital Community in Kenya," Rams Without Borders, Fort Collins, Colorado. **(Invited)**
2. Kim, B., M. Bullock, S. Fischer, H. Proulx, J.D. Niemann, J. Scalia IV, and T.R. Green, June 2023, "Estimating Soil Moisture at High Spatial Resolutions Using Meteorological Variables at a Study Region in Northern Colorado," University Council on Water Resources Annual Conference, Fort Collins, Colorado.
3. Niemann, J.D., April 2023, "Pit Privy Design in an International Development Context," Rams Without Borders, Fort Collins, Colorado. **(Invited)**
4. Niemann, J.D., T. Green, A. Jones, J. Scalia, P. Grazaitis, M. Coleman, K. Ranney, G. Cowley, D. Hoehn, K. Werbylo, J. Deshon, S. Timilsina, M. Bullock, S. Fischer, H. Proulx, and M. Pauly, March 2023, "Dynamic Soil Moisture Mapping Using the EMT+VS Downscaling Method," Cold Regions Research and Engineering Laboratory, U.S. Army Corps of Engineering, Fort Collins, Colorado. **(Invited)**
5. Bindner, J.R., J. Scalia IV, J.D. Niemann, and B. Schaible, March 2023, "Predicting Soil Texture Using 1-D Convolutional Neural Networks Based on Field Hyperspectral Images," American Geophysical Union Hydrology Days, Fort Collins, Colorado.
6. Bullock, M.D., J. Scalia IV, J.D. Niemann, S.C. Fischer, H. Proulx, T.R. Green, and R.H. Erskine, March 2023, "Prediction of Strength of Surface Soils Using Temporally and Spatially Varying Landscape Attributes," American Geophysical Union Hydrology Days, Fort Collins, Colorado.
7. Fischer, S.C., J.D. Niemann, J. Scalia IV, M.D. Bullock, H. Proulx, B. Kim, and T.R. Green, March 2023, "Evaluating the Accuracy of Soil Moisture Downscaling for a Large Study Region in Northern Colorado," American Geophysical Union Hydrology Days, Fort Collins, Colorado.
8. Ghalley, W., J.D. Niemann, S. Shrestha, and R. Ettema, March 2023, "Streamflow Alteration under Hydropower Dam Operations and Climate Change Projection: A Case Study in the Sesan River Basin, Lower Mekong Region," American Geophysical Union Hydrology Days, Fort Collins, Colorado.
9. Wells, R., K.R. Mankin, J.D. Niemann, H. Kipka, T.R. Green, and D. Barnard, March 2023, "Estimating Changes in Water Yield and Tracking Hydrology Recovery in Multiple Watersheds Affected by Wildfire," American Geophysical Union Hydrology Days, Fort Collins, Colorado.
10. Niemann, J.D., October 2022, "Dynamic Soil Moisture Mapping Over Large Spatial Extents," CSU Strata, Fort Collins, Colorado. **(Invited**)
11. Niemann, J.D., September 2022, "Dynamic Soil Moisture Mapping Over Large Spatial Extents," Meeting with Water Foundry, CSU Strata, Fort Collins, Colorado. **(Invited)**
12. Giovando, J., J.D. Niemann, and S.R. Fassnacht, April 2022, "Temperature Index Snowpack Model Parameter Adjustments for Wildfire Impacted Watersheds," American Geophysical Union Hydrology Days, Fort Collins, Colorado.
13. Kim, B., J.D. Niemann, and T.R. Green, April 2022, "Incorporating Probabilistic Variations in Soil Moisture Downscaling," American Geophysical Union Hydrology Days, Fort Collins, Colorado.

14. Ukasha, M., J.A. Ramirez, and J.D. Niemann, April 2022, “An Improved Rescaling Algorithm for Estimating Groundwater Depletion Rates using the GRACE Satellite," American Geophysical Union Hydrology Days, Fort Collins, Colorado.
15. Niemann, J.D., B.C. Irvin IV, D. Woolridge, M.A. Perry, K.E. Bauer, and W.T. McCormick III, February 2022, “Proposed Updates to Colorado Dam Safety’s Guidelines for Watershed Modeling,” Water Science and Engineering Seminar Series, Fort Collins, Colorado. **(Invited)**
16. Giovando, J., and J.D. Niemann, December 2021, “Impacts of Wildfire on Snowpack in the Western U.S. Based on SNOTEL Observations,” American Geophysical Union Fall Meeting, New Orleans, Louisiana.
17. Green, T., R. Erskine, D. Barnard, L. Sherrod, J.D. Niemann, and K. Mankin, December 2021, “Understanding Soil Moisture Regimes through Analysis of Long-Term, Spatially Distributed Data within a Farm Field: Implications for Scaling and Inference of Hydrological Fluxes,” American Geophysical Union Fall Meeting, New Orleans, Louisiana.
18. Niemann, J.D., November 2021, “Water and Sanitation for a Hospital Community in Kenya,” Rams Without Borders, Fort Collins, Colorado. **(Invited)**
19. Kim, B., and J.D. Niemann, November 2021, “Soil Moisture Downscaling from Fine Resolutions to Large Spatial Extents,” Graduate Student Showcase, Colorado State University, Fort Collins, Colorado.
20. Niemann, J.D., October 2021, “Can We Drink the Water? Field Assessments of Water Quality,” Engineering Ministries International Conference, Nashville, Tennessee. **(Invited)**
21. Irvin IV, B.C., J.D. Niemann, M.A. Perry, K.E. Bauer, and W.T. McCormick III, March 2021, “Flood Hydrograph Prediction in Ungauged Mountain Basins of Colorado,” American Geophysical Union Hydrology Days, Fort Collins, Colorado.
22. Kim, B., J.D. Niemann, and T.R. Green, March 2021, “Probabilistic Downscaling of Soil Moisture over a Large Spatial Extent,” American Geophysical Union Hydrology Days, Fort Collins, Colorado.
23. Ukasha, M., J.A. Ramirez, and J.D. Niemann, March 2021, “Application of Multiplicative Random Cascades to Spatially Downscale Observed Terrestrial Water Storage Anomalies,” American Geophysical Union Hydrology Days, Fort Collins, Colorado.
24. Byron, L., P. Nelson, and J.D. Niemann, December 2020, “Probabilistic Modeling of Landslide Initiation and Runout Mapping under Current and Future Climates,” American Geophysical Union Fall Meeting, Online.
25. Niemann, J.D., and B.C. Irvin, November 2020, “Research to Support an Update of the Colorado Dam Safety Guidelines for Watershed Modeling,” Colorado Water Center External Advisory Board Meeting, Online. **(Invited)**
26. Niemann, J.D., October 2020, “Can We Drink the Water? Field Assessments of Water Quality,” Engineering Ministries International Conference, Colorado Springs, Colorado. **(Invited)**
27. Bindner, J.R., J. Scalia IV, and J.D. Niemann, April 2020, “Developing a Surface Soil Strength Dataset for Remote Prediction of Moisture-Variable Soil Strength,” American Geophysical Union Hydrology Days, Fort Collins, Colorado.
28. Alothman, M., J.D. Niemann, and J. Gironas, April 2020, “Improving Spatially Distributed Travel Time Methods for Hydrograph Prediction by Better Accounting for Upstream Flow Contributions,” American Geophysical Union Hydrology Days, Fort Collins, Colorado.
29. Niemann, J.D., February 2020, “Using Optical/Thermal Satellite Imagery Enhanced with Regional Characteristics to Estimate Rootzone Soil Moisture,” Center for Agricultural Resources Research, United States Department of Agricultural, Fort Collins, Colorado. **(Invited)**
30. Jones, A.S., A.A. Andales, A. Burzynski, J.L. Chávez, O. David, S.J. Fletcher, J.M. Forsythe, M. Goodliff, P. Grazaitis, S.Q. Kidder, A. Kliewer, C. McGovern, J.D. Niemann, M. Pauly, J. Scalia, and G.E.B. Smith, January 2020, “Integrative Hydrometeorological Applications with Precipitation, Soil Moisture, and Water Vapor Using Phone Apps, GIS, and Data Assimilation,” American Meteorological Society Annual Meeting, Boston, Massachusetts.

31. Chong, P., J. Gironas, and J.D. Niemann, December 2019, “An Analysis of Dispersion Mechanisms in the Hydrologic Response of Natural Basins Using a Distributed Travel Time,” American Geophysical Union Fall Meeting, San Francisco, California.
32. Niemann, J.D., November 2019, "Master Plan for a School in Belize," Rams Without Borders, Fort Collins, Colorado.
33. Niemann, J.D., October 2019, “Sustainable Water Supply: Sources and Selection,” Engineering Ministries International Conference, Elgin, Illinois. **(Invited)**
34. Pauly, M.J., J.D. Niemann, J. Scalia, A. Jones, N. Gaul, K.K. Choi, M. Cammarere, P. Graizitis, P. Jayakumar, August 2019, “High Resolution Moisture-Variable Mobility Maps with Confidence Limits,” Ground Vehicle Systems Engineering and Technology Symposium, Warren, Michigan.
35. Follum, M., W. Scharffenberg, and J.D. Niemann, June 2019, “A Modified Temperature-Based Method to Spatially Simulate Frozen Ground within GSSHA and HEC-HMS,” Federal Interagency Sedimentation and Hydrologic Modeling Conference (SEDHYDRO2019), Reno, Nevada.
36. Bunster, T., J. Gironas, and J.D. Niemann, March 2019, “The Role of Upstream Flow Contributions in Spatially Distributed Travel Time Models for Hydrograph Prediction,” American Geophysical Union Hydrology Days, Fort Collins, Colorado
37. Pauly, M.J., J.D. Niemann, J. Scalia, and T.R. Green, March 2019, “Assessing Impacts of Soil Hydrology on Patterns of Soil Moisture and Surface Soil Strength,” American Geophysical Union Hydrology Days, Fort Collins, Colorado.
38. Pereira-Claren, A. J. Gironas, J.D. Niemann, P. Passalacqua, A. Mejia, and C. Escauriaza, March 2019, “Planform Geometry and Relief Characterization of Drainage Networks in High-Relief Environments: An Analysis of Chilean Andean Basins,” American Geophysical Union Hydrology Days, Fort Collins, Colorado.
39. Timilsina, S., J.D. Niemann, S.L. Rathburn, and F.K. Rengers, Mach 2019, “Modeling Hydrologic Processes Associated with Soil Saturation and Debris Flow Initiation during the September 2013 Storm, Colorado Front Range,” American Geophysical Union Hydrology Days, Fort Collins, Colorado.
40. Woolridge, D., J.D. Niemann, M. Perry, K. Bauer, and W. McCormick, March 2019, “Identifying and Modeling Streamflow Production Mechanisms during Extreme Precipitation Events in the Colorado Front Range,” ASDSO West Regional Conference, Westminster, Colorado. **(Invited)**
41. Niemann, J.D., D.D. Woolridge, January 2019, “Mountain Basin Hydrologic Response Study,” Malaysian National Committee on Large Dams Meeting, Colorado State University, Fort Collins, Colorado. **(Invited)**
42. Jones, A.S., A.A. Andales, J.L. Chávez, C. McGovern, G.E.B. Smith, J.P. Deshon, J.D. Niemann, S.J. Fletcher, J.M. Forsythe, M. Goodliff, and A. Kliewer, January 2019, “Tools for Use of Predictive Rainfall within Irrigation Decision-Aids, Downscaling of Soil moisture, and Non-Gaussian Data Assimilation for Agricultural/Military Applications and Analysis of Atmospheric River Events,” 33rd Hydrology Conference, American Meteorological Society Annual Meeting, Phoenix, Arizona.
43. Bunster, T., J. Gironas, and J.D. Niemann, December 2018, “Assessing the Impact of Upstream Contribution Approximations on the Performance of Spatially Distributed Travel Time Methods Applied to Natural Catchments,” American Geophysical Union Fall Meeting, Washington, D.C.
44. Jung, J.Y., J.D. Niemann, and B.P. Greimann, December 2018, “An Algorithm with Improved Computational Efficiency for Estimating Parameter Uncertainty and its Impact on Model Prediction Uncertainty,” American Geophysical Union Fall Meeting, Washington, D.C.
45. Sahaar, A.S., J.D. Niemann, and A. Elhaddad, December 2018, “Evaluating a Remote Sensing Approach to Estimate Root-Zone Soil Moisture Accounting for Regional Characteristics,” American Geophysical Union Fall Meeting, Washington, D.C.
46. Timilsina, S., J.D. Niemann, S.L. Rathburn, and F.K. Rengers, December 2018, “Exploring Hydrologic Controls on Patterns of Debris Flow Initiation in the Colorado Front Range during the September 2013 Flood Event,” American Geophysical Union Fall Meeting, Washington, D.C.

47. Niemann, J.D., D.D. Woolridge, 2018, “Mountain Basin Hydrologic Response Study,” Colorado Water Conservation Board, Denver, Colorado. **(Invited)**
48. Niemann, J.D., October 2018, “Sustainable Water Supplies: Sources and selection,” Engineering Ministries International Conference, Newberg, Oregon. **(Invited)**
49. Cammarere, M., J. Scalia, J.D. Niemann, and A.S. Jones, September 2018, "Estimation of Soil Moisture and Soil Strength using the EMT+VS Model," AVT-308 Cooperative Demonstration of Technology on Next-Generation NATO Reference Mobility Model Development, Keweenaw Research Center, Houghton, Michigan. **(Invited)**
50. Green, T.R., R.H. Erskine, P.S.C. Rao, J.D. Niemann, S. Kampf, and J.A. Ramirez, March 2018, "Soil Moisture Dynamics in a Colorado Field: Stability and Threshold Crossing Times under Annual Crops and Perennial Grasses," American Geophysical Union Hydrology Days, Fort Collins, Colorado.
51. Sahaar, S., J.D. Niemann, and A. Elhaddad, March 2018, "Evaluation of an Optical/Thermal Remote-Sensing Method for Root-Zone Soil Moisture that Accounts for Regional Characteristics," American Geophysical Union Hydrology Days, Fort Collins, Colorado.
52. Jung, J.Y., J.D. Niemann, and B.P. Greimann, March 2018, "A Method for Efficient Assessment of Parameter Uncertainty in Numerical Model Simulations," American Geophysical Union Hydrology Days, Fort Collins, Colorado.
53. Deshon, J.P., J.D. Niemann, T.R. Green, and A.S. Jones, March 2018, "Statistical Analysis of Soil Moisture Patterns for Probabilistic Downscaling," American Geophysical Union Hydrology Days, Fort Collins, Colorado.
54. Gates, T.K., and J.D. Niemann, February 2018, "Review of Data Collection Activities in the Arkansas River Basin," Colorado Water Conservation Board, Denver, Colorado.
55. Deshon, J.P., J.D. Niemann, T.R. Green, and A.S. Jones, December 2017, “Stochastic Analysis and Probabilistic Downscaling of Soil Moisture,” American Geophysical Union Fall Meeting, New Orleans, Louisiana.
56. Cotterman, K.A., M.L. Follum, N.R. Pradhan, and J.D. Niemann, December 2017, “An Approach to Flooding Inundation Combining the Streamflow Prediction Tool (SPT) and Downscaled Soil Moisture,” American Geophysical Union Fall Meeting, New Orleans, Louisiana.
57. Pereira, A.A., J.A. Gironás, P. Passalacqua, A. Mejía, and J.D. Niemann, December 2017, “Hydro-Geomorphological Characterization and Classification of Chilean River Networks using Horizontal, Vertical and Climatological Properties,” American Geophysical Union Fall Meeting, New Orleans, Louisiana.
58. Hoch-Leiva, A.M., J.A. Gironás, J.D. Niemann, A. Mejia, A.A. Pereira, and J.C. Aguilera, December 2017, “Classification of Channel Network Geometry using the Width Function and Classification Trees,” American Geophysical Union Fall Meeting, New Orleans, Louisiana.
59. Cammarere, M., K. Gemeinhart, J.D. Niemann, A.S. Jones, and J. Scalia, October 2017, “NG-NRMM TA1: A Fine Resolution Soil Moisture Mapping Application,” NATO Reference Mobility Model Working Group Meeting, Utrecht, Netherlands.
60. Cammarere, M., K. Gemeinhart, J.D. Niemann, A.S. Jones, and J. Scalia, October 2017, “NG-NRMM TA2/TA3: An Update on Characterizing Soil Parameters with Moisture Content,” NATO Reference Mobility Model Working Group Meeting, Utrecht, Netherlands.
61. Niemann, J.D., October 2017, “Water Supplies: Sources and Selection,” Engineering Ministries International Conference, Colorado Springs, Colorado. **(Invited)**
62. Jung, J.Y., J.D. Niemann, and B.P. Greimann, July 2017, “Efficient Estimation of Parameter Uncertainty in Sedimentation and River Hydraulics Models,” U.S. Bureau of Reclamation, Denver, Colorado.
63. Deshon, J.P., J.D. Niemann, and A.S. Jones, July 2017, “Probabilistic Downscaling of Remotely-Sensed Soil Moisture to Fine-Resolutions,” 2017 Global Grand Challenges Summit, Washington, D.C.

64. Jones, A.S., J.D. Niemann, M. Cammarere, N.R. Grieco, and J.P. Deshon, May 2017, "Determination of Terrain Ponding for Logistics Emplacement and Planning," NATO Reference Mobility Model Working Group Meeting, Vilnius, Lithuania.
65. Czyzyk, K.A., S. Hassani, J.D. Niemann, and J. Gironás, May 2017, "Incorporating Channel Network Type in a Nonlinear Synthetic Unit Hydrograph Method," American Water Resources Association – Colorado Section Annual Symposium, Golden, Colorado.
66. Niemann, J.D., N. Grieco, J. Deshon, J. Scalia, A.S. Jones, April 2017, "Determination of Terrain Ponding for Logistics Emplacement and Planning (TARDEC Tasking)," Tank Automotive Research Development and Engineering Center, Warren, Michigan. **(Invited)**
67. Czyzyk, K.A., S. Hassani, J.D. Niemann, and J. Gironás, March 2017, "Incorporating Channel Network Type in a Nonlinear Synthetic Unit Hydrograph Method," American Geophysical Union Hydrology Days, Fort Collins, Colorado.
68. Grieco, N.R., J.D. Niemann, T.R. Green, and A.S. Jones, March 2017, "An Evaluation of Downscaling Soil Moisture without Local Calibration," American Geophysical Union Hydrology Days, Fort Collins, Colorado.
69. Jones, A.S., A.A. Andales, J.D. Niemann, M. Cammarere, J. Corbett, S.J. Fletcher, and M. Schipanski, January 2017, "Enhancing Predictive Capabilities of Phytobiome Decision Tools through Predictive Weather and Fine-Scale Soil Moisture," American Meteorological Society 31st Conference on Hydrology, Seattle, Washington.
70. Jones, A.S., A.A. Andales, J.D. Niemann, M. Cammarere, J. Corbett, S.J. Fletcher, and M. Schipanski, December 2016, "Methods Linking Predictive Weather and Fine-Scale Soil Moisture to Crop and Irrigation Decision Tools," American Geophysical Union Fall Meeting, San Francisco, California.
71. Jung, Y., J.D. Niemann, and B.P. Greimann, December 2016, "Modeling input errors to improve uncertainty estimates for sediment transport model predictions," American Geophysical Union Fall Meeting, San Francisco, California.
72. Niemann, J.D., G.S. Cowley, T.R. Green, M.S. Seyfried, A.S. Jones, and P.J. Grazaitis, December 2016, "Impacts of Potential Evapotranspiration and Precipitation Patterns on Downscaling Soil Moisture in Regions with Large Topographic Relief," American Geophysical Union Fall Meeting, San Francisco, California.
73. Sahaar, S., and J.D. Niemann, December 2016, "Enhancing a Remote-Sensing Method for Soil Moisture by Accounting for Regional Soil, Vegetation, and Climatic Characteristics," American Geophysical Union Fall Meeting, San Francisco, California.
74. Jones, A.S., A.A. Andales, J.D. Niemann, M. Cammarere, J. Corbett, S.J. Fletcher, and M. Schipanski, December 2016, "Methods Linking Predictive Weather and Fine-Scale Soil Moisture to Crop and Irrigation Decision Tools," USDA Ogallala Water CAP Symposium, Denver, Colorado.
75. Niemann, J.D., M. Cammarere, P.J. Grazaitis, and A.S. Jones, October 2016, "Determination of Terrain Ponding for Logistics Emplacement and Planning (TARDEC Tasking)," Tank Automotive Research Development and Engineering Center, Warren, Michigan. **(Invited)**
76. Follum, M.L., C.W. Downer, and J.D. Niemann, July 2016, "Spatially-Distributed Simulation of the Snowpack within the GSSHA Hydrologic Model for Areas with Limited Data," American Water Resources Association conference, Sacramento, California.
77. Niemann, J.D., D.C. Hoehn, and G.S. Cowley, July 2016, "The Equilibrium Moisture from Topography + Vegetation and Soil (EMT+VS) Soil Moisture Downscaling Model," Engineer Research and Development Center, Vicksburg, Mississippi.
78. Jones, A.S., J.D. Niemann, D.C. Hoehn, G.S. Cowley, and M. Cammarere, April 2016, "Equilibrium Moisture from Topography, Vegetation, and Soil (EMT+VS) Downscaling Product," NATO Reference Mobility Model Working Group Meeting, Tallinn, Estonia.

79. Jung, Y., J.D. Niemann, and B.P. Greimann, May 2016, "Multi-Objective Bayesian Model Averaging to Evaluate Uncertainty in Sediment Transport Equations in SRH-1D," Environmental and Water Resources Congress, West Palm Beach, Florida.
80. Cowley, G.S., J.D. Niemann, T.R. Green, M.S. Seyfried, and A.S. Jones, March 2016, "Downscaling Soil Moisture in Regions with Large Elevation Ranges," American Geophysical Union Hydrology Days, Fort Collins, Colorado.
81. Hoehn, D.C., J.D. Niemann, T.R. Green, and A.S. Jones, March 2016, "Evaluating Methods to Downscale Multiple Coarse-Resolution Grid Cells of Soil Moisture," American Geophysical Union Hydrology Days, Fort Collins, Colorado.
82. Jung, Y., J.D. Niemann, and B.P. Greimann, March 2016, "Assessing Uncertainty due to the Selection of a Sediment Transport Equation Using Univariate and Multivariate Bayesian Model Averaging," American Geophysical Union Hydrology Days, Fort Collins, Colorado.
83. Sahaar, S., and J.D. Niemann, March 2016, "Adapting a Remote-Sensing Method for Soil Moisture to Account for Regional Soil, Vegetation, and Climatic Characteristics," American Geophysical Union Hydrology Days, Fort Collins, Colorado.
84. Niemann, J.D., M. Cammarere, P.J. Grazaitis, and A.S. Jones, January 2016, "Equilibrium Moisture from Topography, Vegetation, and Soil (EMT+VS) Downscaling Product," Innovation Seminar Series, Tank Automotive Research Development and Engineering Center, Warren, Michigan. **(Invited)**
85. Niemann, J.D., October 2015, "Water Resources Engineering for an Orphanage in Guatemala," Engineers Without Borders, Colorado State University Chapter, Fort Collins, Colorado. **(Invited)**
86. Niemann, J.D., August 2015, "Strategies for Estimating Soil Moisture Patterns on Training Lands and the Battlefield," Fort Carson, Colorado Springs, Colorado. **(Invited)**
87. Niemann, J.D., July 2015, "Local Sensitivity Analysis," Short Course on Statistics and Uncertainty, U.S. Bureau of Reclamation, Denver, Colorado. **(Invited)**
88. Niemann, J.D., and Y. Jung, July 2015, "Global Sensitivity Analysis," Short Course on Statistics and Uncertainty, U.S. Bureau of Reclamation, Denver, Colorado. **(Invited)**
89. Niemann, J.D., July 2015, "Measures of Model Performance," Short Course on Statistics and Uncertainty, U.S. Bureau of Reclamation, Denver, Colorado. **(Invited**)
90. Niemann, J.D., July 2015, "Parameter Identifiability and the GLUE Method," Short Course on Statistics and Uncertainty, U.S. Bureau of Reclamation, Denver, Colorado. **(Invited)**
91. Niemann, J.D., and Y. Jung, July 2015, "Parameter Identifiability and MCMC Methods," Short Course on Statistics and Uncertainty, U.S. Bureau of Reclamation, Denver, Colorado. **(Invited)**
92. Niemann, J.D., and Y. Jung, July 2015, "Model Structure Uncertainty," Short Course on Statistics and Uncertainty, U.S. Bureau of Reclamation, Denver, Colorado. **(Invited)**
93. Niemann, P., and J.D. Niemann, April 2015, "Planning Improvements to Water and Sanitation Systems for a Hospital Community in Kenya," Environmental Engineering Society, Fort Collins, Colorado. **(Invited)**
94. Maamon, A.M., S. Hassani, and J.D. Niemann, March 2015, "On the Use of Classifications for Channel Network Structure for Determining Synthetic Unit Hydrographs for Ungauged Basins," American Geophysical Union Hydrology Days, Fort Collins, Colorado.
95. Jung, Y., J.D. Niemann, and B.P. Greimann, March 2015, "Applying Screening Tools to Speed the Evaluation of Uncertainty in Sediment Transport Models," American Geophysical Union Hydrology Days, Fort Collins, Colorado.
96. Follum, M., C. Downer, and J.D. Niemann, December 2014, "Simulating the Spatial Distribution of Snow Pack and Snow Melt Runoff with Different Snow Melt Algorithms in a Physics Based Watershed Model," American Geophysical Union Fall Meeting, San Francisco.
97. Niemann, J.D., and M.L. Coleman, November 2014, "On the Origins of Different Types of Topographic Dependence and Temporal Instability in Catchment-Scale Soil Moisture Patterns," International Annual

Meeting of the American Society of Agronomy, Crop Science Society of America, and Soil Science Society of America, Long Beach, California. **(Invited)**

98. Niemann, J.D., October 2014, "A Framework for Downscaling Intermediate-Resolution Soil Moisture to Fine Resolutions," External Advisory Board Meeting, Department of Civil and Environmental Engineering, Colorado State University, Fort Collins, Colorado. **(Invited)**
99. Zuazo, V., J. Gironás, and J.D. Niemann, August 2014, "Evaluación de Distintas Formulaciones de Tiempo de Viaje en el Rendimiento de Métodos Hidrológicos de Tiempos de Viaje Espacialmente Distribuidos," XXVI Congreso Latinoamericano de Hidráulica, Santiago, Chile.
100. Niemann, J.D., and K.J. Ranney, April 2014, "Downscaling Soil Moisture Data," Technical Interchange Meeting, Improvement of Retrieval Algorithms and Data Assimilation Systems for DoD Soil Moisture and Snow Water Equivalent Applications, Fort Collins, Colorado. **(Invited)**
101. Alburn, N.E., J.D. Niemann, and A. Elhaddad, March 2014, "Evaluation of a Surface Energy Balance Method to Estimate Root-Zone Soil Moisture Utilizing Optical and Thermal Satellite Imagery," American Geophysical Union Hydrology Days, Fort Collins, Colorado.
102. Augustine, A.J., C. Olson, J.D. Niemann, and J. Gironás, March 2014, "Impacts of Disaggregation on Modeled Hydrologic Responses," American Geophysical Union Hydrology Days, Fort Collins, Colorado.
103. Jung, Y., and J.D. Niemann, March 2014, "Improving the Statistical Representation of a Modeler's Prior Knowledge to Speed the Evaluation of Model Uncertainty," American Geophysical Union Hydrology Days, Fort Collins, Colorado.
104. Ranney, K.J., J.D. Niemann, T.R. Green, and A.S. Jones, March 2014, "Evaluation of a Method to Downscale Intermediate-Resolution Soil Moisture to a Fine-Resolution using Topographic, Vegetation, and Soil Data," American Geophysical Union Hydrology Days, Fort Collins, Colorado.
105. Niemann, J.D., K.J. Ranney, A.S. Jones, T.R. Green, T. Giles, and M. Woodbury, February 2014, "A Framework for Downscaling Intermediate-Resolution Soil Moisture to Fine Resolutions using Topographic, Vegetation, and Soil Information," American Meteorological Society 28th Conference on Hydrology, Atlanta, Georgia.
106. Coleman, M.L., J. Gironás, and J.D. Niemann, December 2013, "Hydrologic Response Differences between Drainage Network Classifications," American Geophysical Union Fall Meeting, San Francisco, California.
107. Niemann, J.D., June 2013, "Army SBIR: Down Scaling Techniques for Ground State Information - EMT Model Introduction," Cold Regions Research and Engineering Laboratory, Hanover, New Hampshire. **(Invited)**
108. Niemann, J.D., June 2013, "Army SBIR: Down Scaling Techniques for Ground State Information - Methodological Advances," Cold Regions Research and Engineering Laboratory, Hanover, New Hampshire. **(Invited)**
109. Traff, D.C., and J.D. Niemann, April 2013, "Effects of Woody Vegetation on Shallow Soil Moisture at a Semiarid Montane Catchment," American Water Resources Association – Colorado Section, Golden, Colorado.
110. Coleman, M.L., J. Gironás, and J.D. Niemann, March 2013, "Influence of Channel Network Structure on Hydrologic Response," Departamento de Ingeniería Hidráulica y Ambiental, Pontificia Universidad Católica, Santiago, Chile.
111. Alburn, N.E., J.D. Niemann, and A. Elhaddad, March 2013, "Evaluation of a Method to Estimate Root-Zone Soil Moisture Based on Optical and Thermal Satellite Imagery," American Geophysical Union Hydrology Days, Fort Collins, Colorado.
112. Traff, D.C., and J.D. Niemann, March 2013, "Effects of Vegetation on Shallow Soil Moisture at a Semiarid Montane Catchment," American Geophysical Union Hydrology Days, Fort Collins, Colorado.
113. Werbylo, K.L., and J.D. Niemann, March 2013, "Evaluation of Sampling Techniques for Observing Topographically-Dependent Variability in Catchment-Scale Soil Moisture Patterns," American Geophysical Union Hydrology Days, Fort Collins, Colorado.

114. Niemann, J.D., and P. Niemann, February 2013, "Planning Improvements to Water and Sanitation Systems for a Hospital Community in Kenya," Engineers Without Borders Student Chapter Meeting, Fort Collins, Colorado.
115. Werbylo, K.L., and J.D. Niemann, December 2012, "An Efficient Sampling Technique for Observing Topographically-Dependent Spatial Variability in Catchment Scale Soil Moisture Patterns," American Geophysical Union Fall Meeting, San Francisco.
116. Coleman, M.L., J. Gironás, and J.D. Niemann, December 2012, "Catchment morphology and drainage network influences on runoff hydrographs," American Geophysical Union Fall Meeting, San Francisco.
117. Coleman, M.L., and J.D. Niemann, August 2012, "Estimation of Catchment-Scale Soil Moisture Patterns from Topography," Departamento de Ingeniería Hidráulica y Ambiental, Pontificia Universidad Católica, Santiago, Chile.
118. Niemann, J.D., and M.L. Coleman, June 2012, "The Equilibrium Moisture from Topography Model for Downscaling Soil Moisture," AWhere, Inc., Wheat Ridge, Colorado.
119. Niemann, J.D., and M.L. Coleman, June 2012, "The Equilibrium Moisture from Topography Model for Downscaling Soil Moisture," Riverside Technology, Inc., Fort Collins, Colorado.
120. Niemann, J.D., N.E. Alburn, and A. Elhaddad, May 2012, "Evaluation of a Method to Estimate Root-Zone Soil Moisture Based on Optical and Thermal Satellite Imagery," Agricultural Experiment Station Water Projects Coordination Meeting, Fort Collins, Colorado. **(Invited)**
121. Niemann, J.D., and M.L. Coleman, March 2012, "A Method to Downscale Soil Moisture Patterns Based on Topography," Presentation to U.S. Army Corps of Engineers Geotechnical and Structures Laboratory visitors, Colorado State University, Fort Collins, Colorado.
122. Coleman, M.L., and J.D. Niemann, March 2012, "Investigating Controls on Soil Moisture Pattern Types and Their Time Instability," American Geophysical Union Hydrology Days, Fort Collins, Colorado.
123. Werbylo, K.L, and J.D. Niemann, March 2012, "A Conceptual Model to Estimate Topographically-Dependent Soil Moisture Patterns," American Geophysical Union Hydrology Days, Fort Collins, Colorado.
124. Niemann, J.D., M.L. Coleman, and K.L. Werbylo, March 2012, "Methods for Estimating Catchment-Scale Soil Moisture Patterns," Oral Presentation, DoD Center for Geosciences/Atmospheric Research Annual Program Review, Colorado State University, Fort Collins, Colorado. **(Invited)**
125. Werbylo, K.L., J.D. Niemann, and M.L. Coleman, March 2012, "Comparing the Performance of the EOF method and EMT model for Estimating Soil Moisture," Poster Presentation, DoD Center for Geosciences/Atmospheric Research Annual Program Review, Colorado State University, Fort Collins, Colorado.
126. Niemann, J.D., and M.L. Coleman, December 2011, "A Framework for Quantifying and Understanding the Type of Topographic Dependence and Degree of Time-Instability in Catchment-Scale Soil Moisture Patterns," American Geophysical Union Fall Meeting, San Francisco, California.
127. Niemann, J.D., and M.L. Coleman, November 2011, "A Framework for Understanding the Structure and Dynamics of Topographically-Dependent Soil Moisture Patterns," The Integral Role of Water in Ecosystem Science and Sustainability Seminar Series, Natural Resource Ecology Lab, Fort Collins, Colorado. **(Invited)**
128. Sabatine, S.M., and J.D. Niemann, October 2011, "Evaluation of Parameter and Model Uncertainty in Simple Applications of a 1D Sediment Transport Model," U.S. Bureau of Reclamation, Denver, Colorado.
129. Niemann, J.D., A.I. Mejía, and K. Jung, October 2011, "Classification of Channel Networks Based on Deviations from Planform Self-Similarity," Departamento de Ingeniería Hidráulica y Ambiental, Pontificia Universidad Católica, Santiago, Chile. **(Invited)**
130. Niemann, J.D., and M.L. Coleman, June 2011, "A New Model for Downscaling Soil Moisture Patterns Based on Topography," Engineer Research and Development Center, Vicksburg, Mississippi. **(Invited)**

131. Niemann, J.D., June 2011, "Master Plan of the Water and Sanitation Systems for the COSAC Project," PK27 Planning Meeting, Libreville, Gabon. **(Invited)**
132. Sabatine, S.M., J.D. Niemann, and B.P. Greimann, May 2011, "An Assessment of the Uncertainty in Sediment Transport Simulations due to Parameter Estimation and the Selection of a Sediment Transport Equation," 8th Annual AWWA / WEF Rocky Mountain Student Conference, University of New Mexico, Albuquerque, New Mexico.
133. Coleman, M.L, and J.D. Niemann, March 2011, "A Conceptual Model for Soil Moisture Estimation and Downscaling Based on Topographic Attributes," American Geophysical Union Hydrology Days, Fort Collins, Colorado.
134. Steed, G.H., T.K. Gates, J.D. Niemann, and J.W. Labadie, March 2011, "Appraising Surface Water Quantity and Quality in the Upper Arkansas River Basin in Chaffee County," American Geophysical Union Hydrology Days, Fort Collins, Colorado.
135. Sabatine, S.M., and J.D. Niemann, March 2011, "An Assessment of the Uncertainty in Sediment Transport Simulations due to Parameter Estimation and the Selection of a Sediment Transport Equation," American Geophysical Union Hydrology Days, Fort Collins, Colorado.
136. Kampf, S., and J.D. Niemann, March 2011, "Basin and catchment-scale hydrologic regimes in the Cache la Poudre," Interdisciplinary Water Resources Seminar, Colorado State University, Fort Collins, Colorado. **(Invited)**
137. Niemann, J.D., F.A. Busch, and M.L. Coleman, March 2011, "Evaluation of a Method to Estimate Ponded Locations for Use in MyWida/T-IWEDA," Oral Presentation, DoD Center for Geosciences/Atmospheric Research Annual Program Review, Colorado State University, Fort Collins, Colorado. **(Invited)**
138. Busch, F.A., J.D. Niemann, M.L. Coleman, and C.M. Fields, March 2011, "Evaluation of a Method to Estimate Ponded Locations for Use in MyWida/T-IWEDA," Poster Presentation, DoD Center for Geosciences/Atmospheric Research Annual Program Review, Colorado State University, Fort Collins, Colorado.
139. Niemann, J.D., and X. Huang, October 2010, "Impacts of Spatial and Temporal Variations in Discharge on Long-Term Watershed Evolution," Geological Society of America Annual Meeting, Denver, Colorado. **(Invited)**
140. Niemann, J.D., F.A. Busch, M.L. Coleman, and B.M. Lehman, August 2010, "Evaluating Methods to Downscale Soil Moisture Based on Topography," Engineer Research and Development Center, Vicksburg, Mississippi. **(Invited)**
141. Niemann, J.D., F.A. Busch, M.L. Coleman, and B.M. Lehman, August 2010, "Downscaling Soil Moisture based on Topography: A Ponding Algorithm for T-IWEDA," Interagency Land Surface Dynamics Coordination Meeting, Engineer Research and Development Center, Vicksburg, Mississippi. **(Invited)**
142. Niemann, J.D., P. Niemann, B. Coulbert, and N. Ellington, July 2010, "Review of Water System Recommendations: 10-Year Master Plan for the Kijabe Hospital," Engineering Ministries International, Colorado Springs, Colorado. **(Invited)**
143. Niemann, P., J.D. Niemann, B. Coulbert, and N. Ellington, July 2010, "Review of Wastewater System Recommendations: 10-Year Master Plan for the Kijabe Hospital," Engineering Ministries International, Colorado Springs, Colorado.
144. Niemann, J.D., P. Niemann, B. Coulbert, and N. Ellington, June 2010, "Water and Wastewater System Recommendations: 10-Year Master Plan for the Kijabe Hospital," Kijabe Hospital, Kijabe, Kenya. **(Invited)**
145. Gironás, J., J.D. Niemann, L.A. Roesner, F. Rodriguez, and H. Andrieu, May 2010, "Representation of urbanized terrain and its use in quantifying hydrologic response with a morpho-climatic instantaneous unit hydrograph model," European Geophysical Union General Assembly, Vienna, Austria.

146. Coleman, M.L., and J.D. Niemann, May 2010, "Nonlinear and conceptual methods for estimating catchment-scale soil moisture from topographic attributes," Spring Interdisciplinary Water Resources Seminar, Colorado State University, Fort Collins, Colorado.
147. Jones, A.S., J.D. Niemann, M.L. Coleman, J. Cogan, G. Mason, G. McWilliams, R. Shirkey, and T.H. Vonder Haar, April 2010, "Integration of High Resolution Soil Moisture Disaggregation Analysis Capabilities into T-IWEDA," Battlespace Atmospheric and Cloud Impacts on Military Operations (BACIMO) / Integrated Weather Effects Decision Aid (IWEDA) Workshop, Omaha, Nebraska.
148. Busch, F.A., J.D. Niemann, and M.L. Coleman, March 2010, "Integration of Ponding Estimates into T-IWEDA," DoD Center for Geosciences/Atmospheric Research Annual Program Review, Colorado State University, Fort Collins, Colorado.
149. Niemann, J.D., M.L. Coleman, F.A. Busch, A. Carheden, and A.S. Jones, March 2010, "Estimation of Soil Moisture and Ponding Conditions for T-IWEDA," DoD Center for Geosciences/Atmospheric Research Annual Program Review, Colorado State University, Fort Collins, Colorado. **(Invited)**
150. Busch, F.A., and J.D. Niemann, March 2010, "Evaluation of an EOF-Based Method to Estimate Soil Moisture Patterns at Catchments without Local Soil Moisture Observations," American Geophysical Union Hydrology Days, Fort Collins, Colorado.
151. Coleman, M.L., and J.D. Niemann, March 2010, "Comparison of Linear and Nonlinear Methods to Interpolate Sparse Soil Moisture Observations," American Geophysical Union Hydrology Days, Fort Collins, Colorado.
152. Gironás, J., J.D. Niemann, L.A. Roesner, F. Rodriguez, and H. Andrieu, March 2010, "Representation of Urbanized Terrain and Its Use in a Morpho-Climatic Instantaneous Unit Hydrograph," American Geophysical Union Hydrology Days, Fort Collins, Colorado.
153. Jung, K., J.D. Niemann, and X. Huang, March 2010, "Under What Conditions do Parallel Channel Networks Occur?" American Geophysical Union Hydrology Days, Fort Collins, Colorado.
154. Steed, G.H., T.K. Gates, J.D. Niemann, and J.W. Labadie, March 2010, "Hydrological Assessment of the Upper Arkansas River Basin in Chaffee County, Colorado," American Geophysical Union Hydrology Days, Fort Collins, Colorado.
155. Jones, A.S., and J.D. Niemann, February 2010, "LogIWEDA Implementation of a High-Resolution Soil Moisture/Ponding Analysis Method," Tri-Service Integrated Weather Effects Decision Aid (T-IWEDA) Workshop, White Sands Missile Range, New Mexico.
156. Niemann, J.D., M.L. Coleman, M.A. Perry, and B.M. Lehman, February 2010, "Estimating Soil Moisture Patterns Based on Their Dependence on Topography," Interagency Land Surface Dynamics Coordination Meeting, Cold Regions Research and Engineering Laboratory, Hanover, New Hampshire. **(Invited)**
157. McWilliams, G., A.S. Jones, and J.D. Niemann, February 2010, "Army Research Laboratory (ARL) and Colorado State University Soil Moisture Activities," Interagency Land Surface Dynamics Coordination Meeting, Cold Regions Research and Engineering Laboratory, Hanover, New Hampshire.
158. Gates, T.K., G.H. Steed, J.W. Labadie, and J.D. Niemann, January 2010, "Progress Report: Data Assessment and Collection in Support of Improved Water Management in the Arkansas River Basin," Colorado Water Conservation Board, Denver, Colorado. **(Invited)**
159. Gironás, J., J.D. Niemann, L.A. Roesner, F. Rodriguez, and H. Andrieu, December 2009, "Representation of Urbanized Terrain and its Use in Quantifying Hydrologic Response with a Morpho-Climatic Instantaneous Unit Hydrograph Model," American Geophysical Union Fall Meeting, San Francisco, California.
160. Niemann, J.D., and A.I. Mejía, December 2009, "Confronting the Complexity of River Basins," Chi-Epsilon Initiation Dinner, Colorado State University. **(Invited)**
161. Niemann, J.D., M.L. Coleman, M.A. Perry, and B.M. Lehman, November 2009, "Downscaling Soil Moisture Patterns Based on Their Dependence on Topography," Workshop on Dust Forecasting and Land Surface Dynamics, Air Force Weather Agency, Omaha, Nebraska. **(Invited**)

162. Gironás, J., J.D. Niemann, L.A. Roesner, F. Rodriguez and H. Andrieu, October 2009, "Evaluación de métodos para la representación de terreno en modelos de drenaje urbano," XIX Congreso Chileno de Ingeniería Hidráulica, Viña del Mar, Chile.
163. Gates, T.K., G.H. Steed, J.W. Labadie, and J.D. Niemann, August 2009, "Progress Report 2009: Data Assessment and Collection in Support of Improved Water Management in the Arkansas River Basin," Upper Arkansas Water Conservancy District, Salida, Colorado. **(Invited)**
164. Gates, T.K., G.H. Steed, J.W. Labadie, and J.D. Niemann, August 2009, "Progress Report 2009: Data Assessment and Collection in Support of Improved Water Management in the Arkansas River Basin," Colorado Water Conservation Board, Denver, Colorado. **(Invited)**
165. Niemann, J.D., M.A. Perry, M.L. Coleman, and B.M. Lehman, July 2009, "Estimating Soil Moisture Patterns Based on Their Dependence on Topography," Engineer Research and Development Center, Vicksburg, Mississippi. **(Invited)**
166. Ruark, M.D., and J.D. Niemann, July 2009, "Global Sensitivity and Parameter Uncertainty of the SRH-1D Model," U.S. Bureau of Reclamation, Denver, Colorado. **(Invited)**
167. Niemann, J.D., B.M. Lehman, N.U. Hallberg, and T.K. Gates, June 2009, "Analyzing the Contribution of Shallow Groundwater to Evapotranspiration from Uncultivated Lands in an Irrigated River Valley," Water Science Day, U.S. Geological Survey, Denver, Colorado. **(Invited)**
168. Coleman, M.L., M.A. Perry, and J.D. Niemann, March 2009, "Estimation of Ponded Areas for Integration into T-IWEDA," Center for Geosciences / Atmospheric Research Annual Program Review, Fort Collins, Colorado. **(Invited)**
169. Gironás, J., J.D. Niemann, L.A. Roesner, F. Rodriguez, and H. Andrieu, March 2009, "Evaluation of Methods for Representing Urban Terrain in Stormwater Modeling," American Geophysical Union Hydrology Days, Fort Collins, Colorado.
170. Haghnegahdar, A., and J.D. Niemann, March 2009, "Developing Efficient Sampling Strategies to Estimate Spatial-Average Soil Moisture in the Lower Arkansas River Valley, Colorado," American Geophysical Union Hydrology Days, Fort Collins, Colorado.
171. Lehman, B.M., and J.D. Niemann, March 2009, "Controls on Soil Moisture in a Semiarid Montane Catchment with Aspect-Dependent Vegetation," American Geophysical Union Hydrology Days, Fort Collins, Colorado.
172. Melliger, J.J., and J.D. Niemann, March 2009, "Effects of Gully Topography on Space-Time Patterns of Soil Moisture in a Semiarid Grassland," American Geophysical Union Hydrology Days, Fort Collins, Colorado.
173. Ruark, M.D., J.D. Niemann, B. Greimann, and M. Arabi, March 2009, "Global Sensitivity Analysis of the SRH-1D Sediment Transport Model Applied to Two Physical Experiments," American Geophysical Union Hydrology Days, Fort Collins, Colorado.
174. Niemann, J.D., B.M. Lehman, and M.L. Coleman, February 2009, "Controls on Soil Moisture in a Semiarid Setting and an Associated Method for Soil Moisture Estimation," Interdisciplinary Water Resources Seminar, Colorado State University, Fort Collins, Colorado. **(Invited)**
175. Lehman, B.M, and J.D. Niemann, December 2008, "Topographic Controls on Spatial Patterns of Soil Texture and Moisture in a Semi-Arid Montane Catchment with Aspect-Dependent Vegetation," American Geophysical Union Fall Meeting, San Francisco, California.
176. Coleman, M.L., and J.D. Niemann, December 2008, "Nonlinear Interpolation of Catchment-Scale Soil Moisture Patterns from Sparse Observations," American Geophysical Union Fall Meeting, San Francisco, California.
177. Niemann, J.D., and B.M. Lehman, November 2008, "Implications of Aspect-Dependent Vegetation on Spatial Patterns of Soil Moisture in a Semi-Arid Climate," Boulder Creek Critical Zone Observatory Meeting, University of Colorado, Boulder, Colorado. **(Invited)**

178. Niemann, J.D., B.M. Lehman, and J.J. Melliger, October 2008, "Implications of the Covariation of Soil, Vegetation, and Topography on Soil Moisture Patterns in Two Semiarid Environments," Joint Meeting of The Geological Society of America, Soil Science Society of America, American Society of Agronomy, Crop Science Society of America, Gulf Coast Association of Geological Societies with the Gulf Coast Section of SEPM, Houston, Texas.
179. Niemann, J.D., and A.I. Mejía, October 2008, "Characterizing the Responses of Channel Networks to Constraints using Deviations from Planform Self-Similarity", Joint Meeting of The Geological Society of America, Soil Science Society of America, American Society of Agronomy, Crop Science Society of America, Gulf Coast Association of Geological Societies with the Gulf Coast Section of SEPM, Houston, Texas. **(Invited)**
180. Niemann, J.D., B.M. Lehman, M.L. Coleman, M.A. Perry, and J.J. Melliger, September 2008, "Soil Moisture's Dependence on Topography: Observations and Application to Soil Moisture Estimation," Joint ARO-ERDC Review Meeting of ARO Terrestrial Sciences Program Basic Research, Topographic Engineering Center, Alexandria, Virginia. **(Invited)**
181. Lehman, B.M., and J.D. Niemann, July 2008, "Spatial Patterns of Soil Moisture in a Semi-Arid Montane Catchment with Aspect-Dependent Vegetation," First International Conference on Hydropedology, State College, Pennsylvania.
182. Vandegrift, T., J.D. Niemann, and B.M. Lehman, July 2008, "Analyzing Soil Texture's Impact on Evapotranspiration from Uncultivated Land in Colorado's Lower Arkansas River Valley," National Science Foundation Research Experience for Undergraduates, Program in Water Research, Final Symposium.
183. Sahasrabudhe, S.V., J.D. Niemann, and B.M. Lehman, July 2008, "Vegetative and Topographic Controls on Soil Texture," National Science Foundation Research Experience for Undergraduates, Program in Water Research, Final Symposium.
184. Coleman, M.L., J.D. Niemann, and E.P. Jacobs, March 2008, "Application of a Physically-Based Interpolation Method to Reconstruct an Aquifer Boundary Produced by a Preserved Paleotopography," American Geophysical Union Hydrology Days, Fort Collins, Colorado.
185. Erskine, R.H., T.R. Green, J.D. Niemann, and J.A. Ramirez, March 2008, "Scaling Terrain Attributes by Fractal Methods," American Geophysical Union Hydrology Days, Fort Collins, Colorado.
186. Hallberg, N.U., J.D. Niemann, and T.K. Gates, March 2008, "Analyzing the Effects of High Water Tables on Evapotranspiration from Uncultivated Land in Colorado's Lower Arkansas River Valley," American Geophysical Union Hydrology Days, Fort Collins, Colorado.
187. Lehman, B.M., and J.D. Niemann, March 2008, "Topographic and Vegetation Controls on Spatial Patterns of Soil Moisture in a Small Semi-Arid Montane Catchment," American Geophysical Union Hydrology Days, Fort Collins, Colorado.
188. Steinberger, N.A., and J.D. Niemann, March 2008, "A Review of Paleoflood Surveys in the Black Hills of Western South Dakota," American Geophysical Union Hydrology Days, Fort Collins, Colorado.
189. Hallberg, N.U., J.D. Niemann, and T.K. Gates, January 2008, "Characterizing Non-Beneficial Upflux from Shallow Ground Water in an Irrigated River Valley," Colorado Water Congress 50th Annual Convention, Denver, Colorado. **(Invited)**
190. Hallberg, N.U., J.D. Niemann, and T.K. Gates, November 2007, "Characterizing Non-Beneficial Upflux from Shallow Ground Water in an Irrigated River Valley," Colorado Water Resources Research Institute Advisory Committee Meeting, Denver Water, Denver, Colorado. **(Invited)**
191. Niemann, J.D., and A.I. Mejía, "Confronting the Complexity of River Basins," Chi-Epsilon Initiation Dinner, Colorado State University. **(Invited)**
192. Coleman, M., E.P. Jacobs, and J.D. Niemann, October 2007, "Physically-Based Simulation of Paleotopography from Limited Observations," Geological Society of America Annual Meeting, Denver, Colorado.

193. Bryant, C., J.D. Niemann, and B. Lehman, July 2007, "An Analysis of Soil Characteristics as a Function of Topography and Vegetation Cover," National Science Foundation Research Experience for Undergraduates, Program in Water Research, Final Symposium.
194. Little, B.D., N. Hallberg, and J.D. Niemann, July 2007, "Investigating the Relationship Between Water Table Depth and Evapotranspiration in the Lower Arkansas River Valley," National Science Foundation Research Experience for Undergraduates, Program in Water Research, Final Symposium.
195. Niemann, J.D., A.I. Mejía, and X. Huang, May 2007, "A geometric theory for channel network classification and the impacts of hydrologic variability on long-term watershed evolution," Water Seminar Series, University of Colorado, Boulder, Colorado. **(Invited)**
196. Niemann, J.D., M.A. Perry, D.R. Tripp, and E.A.B. Eltahir, April 2007, "Space-time patterns of soil moisture: interpolation, downscaling, and modeling," Interdisciplinary Water Resources Seminar, Colorado State University, Fort Collins, Colorado. **(Invited)**
197. Niemann, J.D. and M.A. Perry, April 2007, "Analysis, estimation, and modeling of soil moisture variation using empirical orthogonal functions," European Geophysical Union General Assembly, Vienna, Austria. **(Invited)**
198. Coleman, M.L., and J.D. Niemann, March 2007, "Comparison of geostatistical methods for the spatial estimation of soil moisture at the catchment scale," American Geophysical Union Hydrology Days, Fort Collins, Colorado.
199. Tripp, D.R., and J.D. Niemann, March 2007, "Evaluating the performance and parameter uncertainty of a numerical model for basin-wide average soil moisture," American Geophysical Union Hydrology Days, Fort Collins, Colorado.
200. Niemann, J.D., March 2007, "Estimation of soil moisture patterns from limited observations: An evaluation of a numerical model for determination of the spatial average," ARO Terrestrial Sciences Soil Moisture/Arid Lands Research Review Meeting, Fort Carson, Colorado. **(Invited)**
201. Niemann, J.D., and M.A. Perry, July 2006, "Improved Spatial and Temporal Estimation of Soil Moisture Using Empirical Orthogonal Functions," Waterways Experiment Station, Vicksburg, Mississippi. **(Invited)**
202. Huang, X., and J.D. Niemann, May 2006, "Impacts of the Variability of Discharges on the Long-Term Geomorphic Evolution of a Watershed," American Geophysical Union Joint Assembly, Baltimore, Maryland.
203. Mejía, A.I., and J.D. Niemann, May 2006, "Self-Similarity in the Classification of Channel Network Planforms," American Geophysical Union Joint Assembly, Baltimore, Maryland.
204. Perry, M.A., and J.D. Niemann, May 2006, "Decomposition of Spatially-Distributed Soil Moisture into Multiple Component Variables With Applications to Interpolation," American Geophysical Union Joint Assembly, Baltimore, Maryland.
205. Mejía, A.I., and J.D. Niemann, March 2006, "Classification of Channel Network Planforms Based on Deviations from Self-Similarity," American Geophysical Union Hydrology Days, Fort Collins, Colorado.
206. Perry, M.A., and J.D. Niemann, March 2006, "Catchment-Scale Variability of Soil Moisture: Controlling Factors and a Method for Estimation," American Geophysical Union Hydrology Days, Fort Collins, Colorado.
207. Huang, X., and J.D. Niemann, March 2006, "Which Discharge Rate Controls the Long-Term Geomorphic Evolution of a Watershed?," American Geophysical Union Hydrology Days, Fort Collins, Colorado.
208. Huang, X., and J.D. Niemann, December 2005, "Long-Term Interactions of Streamflow Generation and River Basin Morphology," American Geophysical Union Fall Meeting, San Francisco, California.
209. Conklin, S.D., and J.D. Niemann, March 2005, "Identifying the Importance of Regional Characteristics on Soil Moisture Patterns Across a Range of Scales," American Geophysical Union Hydrology Days, Fort Collins, Colorado.

210. Huang, X., and J.D. Niemann, March 2005, "Impacts of Streamflow Production Mechanisms on the Evolution of River Basin Topography: The WE-38 Basin in Pennsylvania," American Geophysical Union Hydrology Days, Fort Collins, Colorado.
211. Niemann, J.D., S.D. Conklin, and X. Huang, February 2005, "Interactions of Soil Moisture and Topography Across a Range of Scales," Waterways Experiment Station, Vicksburg, Mississippi. **(Invited)**
212. Huang, X., and J.D. Niemann, December 2004, "Implications of Groundwater Dynamics on Long-Term Changes of River Basin Topography and Hydrologic Response, With Application to the WE-38 Basin, Pennsylvania," American Geophysical Union Fall Meeting, San Francisco, California.
213. Conklin, S.D., and J.D. Niemann, November 2004, "EOF/PC Analysis of Soil Moisture Patterns Across a Range of Scales," Environmental Research Colloquium, Colorado State University, Fort Collins, Colorado.
214. Niemann, J.D., E.A.B. Eltahir, and X. Huang, April 2004, "Modeling the Interactions of Soil Moisture and Topography," Army Research Office, Arid Lands Hydrology and Geomorphology Workshop, Fort Carson, Colorado Springs, Colorado. **(Invited)**
215. Niemann, J.D., and L.E. Hasbargen, March 2004, "A Comparison of the Geometrical Properties of Experimental and Natural River Basins across a Range of Scales," American Geophysical Union Hydrology Days, Fort Collins, Colorado.
216. Niemann, J.D., and E.A.B. Eltahir, March 2004, "On the Sensitivity of Regional Hydrologic Fluxes to Climatic Changes," American Geophysical Union Hydrology Days, Fort Collins, Colorado.
217. Huang, X., and J.D. Niemann, March 2004, "Numerical Simulation of Groundwater Recharge and Discharge in Escarpment Retreat," American Geophysical Union Hydrology Days, Fort Collins, Colorado.
218. Niemann, J.D., and E.A.B. Eltahir, December 2003, "Impacts of Climate Change on Regional Water Balance, With Application to the Illinois River Basin," American Geophysical Union Fall Meeting, San Francisco, California.
219. Huang, X., and J.D. Niemann, December 2003, "Impacts of Groundwater Dynamics on Landscape Evolution," American Geophysical Union Fall Meeting, San Francisco, California.
220. Niemann, J.D., November 2003, "Self-Similarity of River Basins and Applications to Geomorphic Modeling and Topographic Interpolation," Department of Civil, Environmental, and Architectural Engineering, University of Colorado, Boulder, Colorado. **(Invited)**
221. Niemann, J.D., May 2003, "Water Resources Engineering for an Orphanage in Guatemala," Water Resources Engineering Seminar, Department of Civil and Environmental Engineering, Pennsylvania State University, University Park, Pennsylvania. **(Invited)**
222. Reed, P.M., C.J. Duffy, D.F. Hill, P.A. Johnson, A.C. Miller, and J.D. Niemann, April 2003, "Addressing Water Resources at Risk: A Systems Approach for Decision Support," Keystone Alliance Summit on Homeland Security, Pennsylvania State University, University Park, Pennsylvania.
223. Niemann, J.D., March 2003, "Scaling Invariance in Hydrology," Department of Civil and Environmental Engineering, Pennsylvania State University, University Park, Pennsylvania. **(Invited)**
224. Niemann, J.D., R.L. Bras, E.A.B. Eltahir, and D. Veneziano, January 2003, "Physically-Based Self-Similarity of River Basin Topography and Applications to Geomorphic and Hydrologic Modeling," Department of Civil Engineering, Colorado State University, Fort Collins, Colorado. **(Invited)**
225. Niemann, J.D., and L. Hasbargen, December 2002, "Scaling Properties of Laboratory-Generated Stream Networks," American Geophysical Union Fall Meeting, San Francisco, California.
226. Niemann, J.D., May 2002, "Scaling Properties and Spatial Interpolation of Soil Moisture," Topographic Engineering Center, U.S. Army Corps of Engineers, Alexandria, Virginia. **(Invited)**
227. Niemann, J.D., and E.A.B. Eltahir, May 2002, "The Role of Spatial and Temporal Variability of Soil Moisture in the Illinois Water Balance," American Geophysical Union Spring Meeting, Washington, D.C.
228. Niemann, J.D., R.L. Bras, and D. Veneziano, December 2001, "Interpolation of Topography and Estimation of Fine-Scale Erodability," Gilbert Club Pop-Up Presentation, Berkeley, California.

229. Niemann, J.D., November 2001, "Fractals and Scaling-Invariance in Fluvial Geomorphology," Geosciences Department, Pennsylvania State University, University Park, Pennsylvania. **(Invited)**
230. Niemann, J.D., March 2001, "Basin scaling-invariance and topographic interpolation," Industrial and Professional Advisory Council, Department of Civil and Environmental Engineering, Pennsylvania State University, University Park, Pennsylvania. **(Invited)**
231. Niemann, J.D., and E.A.B. Eltahir, February 2001, "A Derived Distribution Approach to Regional Water Balance," Hydrosystems Seminar, Department of Civil and Environmental Engineering, Pennsylvania State University, University Park, Pennsylvania. **(Invited)**
232. Niemann, J.D., R.L. Bras, and D. Veneziano, April 2000, "A Physically-Based Fractal Interpolation Method for Topography," European Geophysical Society General Assembly, Nice, France.
233. Niemann, J.D., R.L. Bras, and D. Veneziano, March 2000, "Physically-Based Self-Similarity and Interpolation of Fluvially Eroded Topography," Hydrosystems Seminar, Department of Civil and Environmental Engineering, Pennsylvania State University, University Park, Pennsylvania. **(Invited)**
234. Niemann, J.D., R.L. Bras, and D. Veneziano, December 1999, "Physically-Based Topographic Interpolation," American Geophysical Union Fall Meeting, San Francisco, California.
235. Niemann, J.D., R.L. Bras, and D. Veneziano, December 1999, "A Quantitative Evaluation of Playfair's Law," Gilbert Club Pop-Up Presentation, Berkeley, California.
236. Niemann, J.D., D. Veneziano and R.L. Bras, May 1998, "An Examination of the Self-Similarity of Observed River Basins," American Geophysical Union Spring Meeting, Boston, Massachusetts.
237. Veneziano, D., J.D. Niemann, and R.L. Bras, April 1998, "Self-Similarity and Multifractality of Erosion River Profiles," European Geophysical Society General Assembly, Nice, France.
238. Veneziano, D., J.D. Niemann, G.E. Tucker, R.L. Bras, F. Colaiori, and A. Flammini, April 1997, "Scaling Laws of Fluvial Topography from Self-Similarity," European Geophysical Society General Assembly, Vienna, Austria.
239. Veneziano, D., J.D. Niemann, G.E. Tucker, R.L. Bras, F. Colaiori, and A. Flammini, April 1997, "Physical Origin of Self-Similarity in Fluvial Topography," European Geophysical Society General Assembly, Vienna, Austria.
240. Niemann, J.D., R.L. Bras, and D. Veneziano, April 1997, "A Comparison of Cluster Growth and Fluvial Erosion Models," Parsons Lab Hydrology Seminar, Department of Civil and Environmental Engineering, Massachusetts Institute of Technology, Cambridge, Massachusetts. **(Invited)**
241. Niemann, J.D., R.L. Bras, and D. Veneziano, June 1996, "The Effect of Evolutionary Dynamics on River Basin Morphology," Workshop on Scale Problems in Hydrology, Krumbach, Austria.
242. Veneziano, D., R.L. Bras, and J.D. Niemann, May 1996, "Nonlinearity and Self-Similarity of Rainfall in Time and a Stochastic Model," European Geophysical Society General Assembly, The Hague, Netherlands.
243. Niemann, J.D., R.L. Bras, and D. Veneziano, May 1996, "The Effect of Evolutionary Dynamics on River Basin Morphology," European Geophysical Society General Assembly, The Hague, Netherlands.
244. Niemann, J.D., and E.A.B. Eltahir, October 1995, "Water Balance of Illinois: The Role of Spatial and Temporal Variability of Soil Moisture," Parsons Lab Seminar Series, Department of Civil and Environmental Engineering, Massachusetts Institute of Technology. **(Invited)**
245. Niemann, J.D., K. Strzepek, and L. Somlyódy, July 1995, "National Water Vulnerabilities: A Global Assessment," Beijing, China. **(Invited)**
246. Niemann, J.D., and R.L. Bras, June 1995, "Demonstration of a Distributed Rainfall-Runoff Model," Geographic Modeling Systems Lab, University of Illinois, Urbana-Champaign, Illinois. **(Invited)**
247. Niemann, J.D., K. Strzepek, and L. Somlyódy, June 1994, "A Global Assessment of National Water Vulnerabilities: Sensitivities, Assumptions, and Driving Forces," Water Resources Vulnerability Workshop, International Institute for Applied Systems Analysis, Laxenburg, Austria. **(Invited)**

248. Niemann, J.D., K. Strzepek, and D. Yates, April 1994, "Climate Change and Nile River Runoff," United Nations Environment Programme, Nairobi, Kenya. **(Invited)**

Research Exchanges

Participant, UNC Water and Health Conference, Chapel Hill, North Carolina, October 2023
Co-Author, Research highlighted by Yale Climate Connections, New Haven, Connecticut, April 2023
Participant, Colorado WASH Symposium, Boulder, Colorado, March 2023
Participant, UNC Water and Health Conference, Chapel Hill, North Carolina, October 2022
Participant, Computing in Engineering Forum, University of Wisconsin, Madison, Wisconsin, September 2022
Co-Author, Research highlighted by Fox News Weather, New York, New York, August 2022
Co-Author, Research highlighted by Oregon Public Broadcasting, Portland, Oregon, August 2022
Participant, Colorado WASH Symposium, Boulder, Colorado, March 2022
Participant, UNC Water and Health Conference, Chapel Hill, North Carolina, October 2021
Participant, Colorado WASH Symposium, Boulder, Colorado, March 2021
Participant, UNC Water and Health Conference, Chapel Hill, North Carolina, October 2020
Convener & Chair, Water for People CSU Partnership Exploration, Fort Collins, Colorado, February 2020
Chair, Hydrologic Systems, American Geophysical Union Hydrology Days, Fort Collins, Colorado, March 2019
Invited Participant, Dam Safety Collaboration Meeting, Malaysian National Committee on Large Dams (MNCOLD), Fort Collins, Colorado, January 2019
Chair, Soil Moisture, Salinity, Water, and Health, American Geophysical Union Hydrology Days, Fort Collins, Colorado, March 2018
Chair, Climate, Hydrology, and Soil Moisture Session, American Geophysical Union Hydrology Days, Fort Collins, Colorado, March 2017
Chair, Soil Moisture and Irrigation Session, American Geophysical Union Hydrology Days, Fort Collins, Colorado, March 2016
Chair, Soil Moisture, Vegetation, and Eco-Hydrology Session, American Geophysical Union Hydrology Days, Fort Collins, Colorado, March 2014
Chair, Hydrologic Modeling and Soil Moisture Session, American Geophysical Union Hydrology Days, Fort Collins, Colorado, March 2012
Invited Member, Poudre Watershed Monitoring Plan Roundtable, Interdisciplinary Water Resources Seminar Series, Fort Collins, Colorado, May 2011
Chair, Soil Moisture Patterns and Controls Session, American Geophysical Union Hydrology Days, Fort Collins, Colorado, March 2009
Invited Participant, Terrestrial Processes Working Group Meeting, Community Surface Dynamics Modeling System, National Science Foundation, Boulder, Colorado, February 2009
Invited Participant, Hydrologic Focus Group Meeting, Community Surface Dynamics Modeling System, National Science Foundation, Boulder, Colorado, January 2009
Chair, Landscape Evolution and Fluvial Geomorphology Session, American Geophysical Union Hydrology Days, Fort Collins, Colorado, March 2008
Chair, Soil Moisture Session, American Geophysical Union Hydrology Days, Fort Collins, Colorado, March 2007
Chair, Vegetation, Hydrology, and Climate Session, American Geophysical Union Hydrology Days, Fort Collins, Colorado, March 2007
Convener & Chair, Impacts of Hydrology on Landscape Evolution I Session, American Geophysical Union Fall Meeting, San Francisco, California, December 2005

Convener & Chair, Impacts of Hydrology on Landscape Evolution II Session, American Geophysical Union Fall Meeting, San Francisco, California, December 2005

Invited Participant, Army Research Office Workshop on Soil Moisture, Remote Sensing, and Environmental Data, Massachusetts Institute of Technology, Cambridge, Massachusetts, January 2004

Selected Participant, Sustainability Workshop, Alliance for Global Sustainability, Massachusetts Institute of Technology, Beijing, China, January 1998

Selected Participant, Summer School on Environmental Dynamics, Istituto Veneto di Scienze, Venice, Italy, June 1997

Session Rapporteur, Sustainability Workshop, Alliance for Global Sustainability, Massachusetts Institute of Technology, Cambridge, Massachusetts, January 1997

Host, Vulnerability Workshop, International Institute for Applied Systems Analysis, Laxenburg, Austria, June 1994

Selected Participant, Young Scientist Summer Program, International Institute for Applied Systems Analysis, Laxenburg, Austria, June-August 1993

TEACHING

Training in Teaching Methods

Participant, Internationalization of the Curriculum Workshop Series, *Office of International Education, Colorado State University* (October 2004 – January 2005)

Awardee, Certification in College Teaching, *Schreyer Institute, Pennsylvania State University* (July 2002)

Participant, Short Course on Learning Styles and Teaching Methods, Leonhard Center for the Enhancement of Engineering Education, Pennsylvania State University (August 2001)

Participant, Short Course on Active & Collaborative Learning, *Center for Academic Computing, Pennsylvania State University* (June 2001)

Courses Taught

* *Average rating of multiple instructional dimensions including: clarity of expectations, timing of feedback, challenge of course, usefulness of materials, instructor communication, and support from instructor*

Year	Semester	Role	Credit Hours	Enrollment	Rating of Instructors
CIVE 202 Numerical Modeling and Risk Analysis (CSU)					
2014	Fall	50%	3	103	4.31/5.00
2013	Fall	50%	3	124	4.49/5.00
2012	Fall	100%	3	114	4.64/5.00
2011	Fall	50%	3	119	4.78/5.00
2010	Fall	50%	3	122	4.58/5.00
2009	Fall (Sect. 1)	50%	3	76	4.81/5.00
2009	Fall (Sect. 2)	50%	3	60	4.55/5.00
2008	Fall	100%	3	117	4.45/5.00
2007	Fall	50%	3	80	4.59/5.00
2006	Fall	50%	3	82	4.70/5.00
CIVE 308 Civil Engineering Synthesis (CSU)					
2004	Fall	50%	3	63	4.73/5.00
CIVE 322 Basic Hydrology (CSU)					
2023	Fall	100%	3	45	4.73/5.00*

2023	Spring	100%	3	70	4.89/5.00*
2022	Spring	100%	3	71	4.89/5.00*
2021	Spring	100%	3	69	5.00/5.00*
2020	Spring	100%	3	74	-
2019	Spring	100%	3	60	4.93/5.00
2018	Spring	100%	3	60	4.79/5.00
2017	Spring	100%	3	80	4.72/5.00
2016	Spring	100%	3	65	4.91/5.00
2015	Spring	100%	3	69	4.96/5.00
2014	Spring	100%	3	67	4.84/5.00
2013	Spring	100%	3	63	4.86/5.00
2012	Spring	100%	3	66	4.94/5.00
2011	Spring	100%	3	67	4.76/5.00
2010	Spring	100%	3	63	4.81/5.00
2009	Spring	100%	3	56	4.76/5.00
2008	Spring	100%	3	49	4.89/5.00
2007	Spring	100%	3	58	4.53/5.00
2006	Spring	100%	3	58	4.75/5.00
2005	Spring	100%	3	54	4.70/5.00
2003	Fall	100%	3	45	4.60/5.00
CIVE 520 Physical Hydrology (CSU)					
2006	Fall	100%	3	13	4.79/5.00
2005	Fall	100%	3	15	4.77/5.00
CIVE/WR 524 Modeling Watershed Hydrology (CSU)					
2023	Spring	100%	3	25	4.98/5.00*
2023	Spring (Online)	100%	3	8	5.00/5.00*
2022	Spring	100%	3	29	4.98/5.00*
2022	Spring (Online)	100%	3	9	5.00/5.00*
2021	Spring	100%	3	27	4.97/5.00*
2020	Spring	100%	3	28	-
2018	Spring	100%	3	25	4.94/5.00
2016	Spring	100%	3	24	5.00/5.00
2015	Spring	100%	3	29	4.85/5.00
2013	Spring	50%	3	22	4.61/5.00
2011	Spring	50%	3	23	4.76/5.00
2009	Spring	50%	4	14	4.80/5.00
CIVE 525 Water Engineering for International Development (CSU)					
2023	Fall	100%	3	25	4.87/5.00*
2022	Fall	100%	3	25	4.93/5.00*
2021	Fall	100%	3	21	4.96/5.00*
2020	Fall	100%	3	29	-
2019	Fall	100%	3	24	-
2018	Fall	100%	3	24	5.00/5.00
2017	Fall	100%	3	23	4.95/5.00
2016	Fall	100%	3	25	4.91/5.00
2015	Fall	100%	3	25	4.96/5.00
2014	Fall	50%	3	23	4.85/5.00

2013	Fall	50%	3	24	4.81/5.00
2012	Fall	50%	3	25	4.86/5.00
2010	Fall	50%	3	24	4.67/5.00
2008	Fall	50%	3	19	4.28/5.00
2006	Fall	50%	3	12	4.36/5.00
2004	Fall	50%	3	17	4.50/5.00
CIVE 724 River Basin Morphology (CSU)					
2010	Spring	100%	3	6	5.00/5.00
2006	Spring	100%	3	6	4.83/5.00
2004	Spring	100%	3	10	4.50/5.00
CIVE 595C Independent Study: Hydrology and Water Resources (CSU)					
2005	Spring	100%	1	1	-
CIVE 695C Independent Study: Hydrology and Water Resources (CSU)					
2023	Spring	100%	2	2	-
2021	Fall	100%	2	1	-
2021	Spring	100%	2	1	-
2018	Fall	100%	2	1	-
2014	Spring	100%	2	1	-
2014	Spring	100%	1	1	-
2013	Fall	100%	2	1	-
2011	Summer	100%	2	1	-
2011	Spring	100%	2	1	-
2011	Spring	100%	1	1	-
2010	Fall	100%	2	1	-
2009	Spring	100%	1	1	-
2008	Fall	100%	1	1	-
2008	Spring	100%	1	1	-
CIVE 695H Independent Study: Water Resources Planning and Management (CSU)					
2022	Fall	100%	2	1	-
2021	Spring	100%	1	1	-
2008	Spring	100%	1	1	-
CIVE 695K Independent Study: Water and International Development (CSU)					
2022	Fall	100%	3	1	-
2020	Fall	100%	2	1	-
2017	Spring	100%	2	2	-
CE 261 Fluid Mechanics (PSU)					
2001	Spring	100%	3	36	6.04/7.00
CE 361 Engineering Hydrology (PSU)					
2003	Spring	100%	4	48	5.42/7.00
2002	Spring	100%	4	45	5.68/7.00
CE597E Surface Hydrology (PSU)					
2001	Fall	100%	3	8	6.60/7.00
CE 597G Fractal River Basins (PSU)					
2002	Fall	100%	3	7	6.67/7.00

New Courses Developed

CIVE 524	Modeling Watershed Hydrology (Online) (CSU)
CIVE 525	Water Engineering for International Development (CSU)
CIVE 724	River Basin Morphology (CSU)
CE 597E	Surface Hydrology (PSU)
CE 597G	Fractal River Basins (PSU)

Major Course Revisions

CIVE 524	Modified course to allow pandemic-related remote learning	(2021)
CIVE 525	Modified course to allow pandemic-related remote learning	(2020)
CIVE 322	Modified course to allow pandemic-related remote learning	(2020)
CIVE 525	Added ram pump design/build project and competition	(2015)
CIVE 525	Added Middle East / North Africa content (sponsored by grant)	(2010)
CIVE 524	Added weekly laboratory sessions	(2011)
CIVE 202	Improved project-based learning methods (sponsored by grant)	(2007)
CIVE 202	Transformed junior-level course (CIVE 308) into a sophomore-level course	(2004)
CIVE 322	Transformed course to use flipped classroom approach and project-based learning	(2003)

New Curriculum Developed

Graduate focus in Water and International Development (WAID), Department of Civil and Environmental Engineering, Colorado State University (2012)

Teaching Grants

1. Honorarium for Service as College of Engineering Fulbright Faculty Advisor, *The Institute for Learning and Teaching and the Office of International Programs*, 1 year, $1,000 (2013)
2. Honorarium for Assistance in Developing a Course on Basic Hydrology for the New Undergraduate Program on Water Resource Engineering at the Water Resource University, Vietnam, *Government of Vietnam*, 1 year, $500 (2013)
3. Honorarium for Service as College of Engineering Fulbright Faculty Advisor, *The Institute for Learning and Teaching and the Office of International Programs*, 1 year, $1,000 (2012)
4. Honorarium for Assistance in Developing a Course on Basic Hydrology for the New Undergraduate Program on Water Resource Engineering at the Water Resource University, Vietnam, *Government of Vietnam*, 1 year, $900 (2012)
5. Salary Support for Course Revision (CIVE 525) and Travel Award for Faculty Development (Egypt and Jordan), *Middle East North Africa (MENA) Studies Program*, 1 year, $5,466 (2010)
6. Integrated Problem-Based Learning in the Civil Engineering Core Curriculum, *The Institute for Learning and Teaching (TILT)*, Colorado State University, 1 year, $14,003 (2007)
7. Wireless Instrumentation of a Watershed for Hydrologic and Hydraulic Engineering Instruction, *Pennsylvania State University*, C. Duffy Principal Investigator, 1 year, $39,000 (2002)

Teaching Seminars & Guest Lectures

1. Niemann, J.D., June 2023, "Bridging the Gap between the Field and Classroom in WASH Education in Engineering," 11th International Conference on Engineering Education for Sustainable Development, Fort Collins, Colorado.
2. Niemann, J.D., March 2023, "Bridging the Gap between International Context and the Engineering Classroom in WASH Education," International Symposium, Colorado State University, Fort Collins, Colorado.
3. Niemann, J.D., December 2022, "Confronting the Global Water Crisis," GES 120 Water Sustainability, Colorado State University, Fort Collins, Colorado.
4. Niemann, J.D., February 2022, "Resolving the Global Water Crisis," CIVE 405 Sustainable Civil Engineering, Colorado State University, Fort Collins, Colorado.
5. Niemann, J.D., December 2021, "Water Engineering for International Development," GES 120 Water Sustainability, Colorado State University, Fort Collins, Colorado.
6. Niemann, J.D., December 2020, "Case Study: Master Plan for School in Belize," U.S. Military Academy, West Point, New York.
7. Niemann, J.D., December 2020, "Water Engineering for International Development," GES 120 Water Sustainability, Colorado State University, Fort Collins, Colorado.
8. Niemann, J.D., December 2019, "Water Engineering for International Development," GES 120 Water Sustainability, Colorado State University, Fort Collins, Colorado.
9. Niemann, J.D., November 2018, "Water Engineering for International Development," GES 180A4 Water Sustainability, Colorado State University, Fort Collins, Colorado
10. Vogel, M., R. Alexander, N. Citino, M. Ekman, K. Kodrich, C. Markele, and J. Niemann, September 2010, "Poor in Water, Rich in Culture: Faculty Development in Jordan and Egypt," International Connections Seminar Series, Colorado State University, Fort Collins, Colorado.
11. Niemann, J.D., and D.G. Fontane, October 2010, "Avoiding the PowerNap: Strategies for Active Learning with PowerPoint," College of Business Master Teacher Workshop, Colorado State University, Fort Collins, Colorado.
12. Niemann, J.D., and D.G. Fontane, November 2009, "Avoiding the PowerNap: Strategies for Active Learning with PowerPoint," Best Practices in Teaching Seminar Series, College of Natural Science, Colorado State University, Fort Collins, Colorado.
13. Niemann, J.D., and D.G. Fontane, January 2009, "Avoiding the PowerNap: Strategies for Active Learning with PowerPoint," Professional Development Institute, The Institute for Learning and Teaching, Colorado State University.
14. Niemann, J.D., and D.G. Fontane, February 2008, "Avoiding the PowerNap: Strategies for Active Learning with PowerPoint," Teaching with Technology Workshop Series, The Institute for Learning and Teaching, Colorado State University.
15. Niemann, J.D., and D.G. Fontane, November 2007, "TILT Course Redesign Project: Integrated Project-Based Learning in the Civil Engineering Core Curriculum," Master Teaching Workshop, Colorado State University.
16. Fontane, D.G., and J.D. Niemann, March 2005, "Effective Use of Spreadsheets for Hydrology and Water Resources Education," American Geophysical Union Hydrology Days, Fort Collins, Colorado.

Advised & Co-Advised Graduate Students

* *Co-Advised*

1.	Hansen, J.	Master of Science	(ongoing)	33.	Prange, J.	Master of Science	(2017)
2.	Kim, B.	Doctor of Philosophy	(ongoing)	34.	Cowley, G.	Master of Science	(2016)

3.	Proulx, H.	Master of Science	(ongoing)
4.	Ascough, K.	Master of Science	(2023)
5.	Bullock, M.*	Master of Science	(2023)
6.	Fischer, S.	Master of Science	(2023)
7.	Ghalley, W.	Master of Science	(2023)
8.	Mohammed, N.	Master of Engineering	(2023)
9.	Sahaar, S.	Doctor of Philosophy	(2023)
10.	Wells, R.	Master of Science	(2023)
11.	Wickham, K.	Master of Science	(2023)
12.	Agenbroad, S.	Master of Engineering	(2022)
13.	Giovando, J.	Doctor of Philosophy	(2022)
14.	Ukasha, M.	Doctor of Philosophy	(2022)
15.	Ziols, M.	Master of Engineering	(2022)
16.	Byron, E.*	Master of Science	(2021)
17.	Ebel, B.	Master of Science	(2021)
18.	Irvin, B.	Master of Science	(2021)
19.	Quiroga, J.	Master of Engineering	(2021)
20.	Bindner, J.*	Master of Science	(2020)
21.	Elkins, B.	Master of Science	(2020)
22.	Pauly, M.*	Master of Science	(2019)
23.	Woolridge, D.	Master of Science	(2019)
24.	Timilsina, S.	Master of Science	(2019)
25.	Czyzyk, K.	Master of Science	(2018)
26.	Deshon, J.	Master of Science	(2018)
27.	Follum, M.	Doctor of Philosophy	(2018)
28.	James, M.	Master of Science	(2018)
29.	Jung, Y.	Doctor of Philosophy	(2018)
30.	Buzzard, D.	Master of Science	(2017)
31.	Grieco, N.,	Master of Science	(2017)
32.	Fleckenstein, S.	Master of Engineering	(2016)
35.	Hoehn, D.	Master of Science	(2016)
36.	Maamon, A.	Master of Science	(2015)
37.	Alburn, N.	Master of Science	(2014)
38.	Freed, J.	Master of Science	(2014)
39.	Hassani, S.	Master of Science	(2014)
40.	Ranney, K.	Master of Science	(2014)
41.	Banzhof, W.	Master of Science	(2013)
42.	Traff, D.	Master of Science	(2013)
43.	Werbylo, K.	Master of Science	(2013)
44.	Coleman, M.	Doctor of Philosophy	(2012)
45.	Steed, G.*	Master of Science	(2012)
46.	Busch, F.	Master of Science	(2011)
47.	Giovando, J.	Master of Science	(2011)
48.	Middlekauff, S.	Master of Science	(2011)
49.	Sabatine, S.	Master of Science	(2011)
50.	Goncalves, C.	Master of Science	(2010)
51.	Jung, K.	Master of Science	(2010)
52.	Gironas, J.	Doctor of Philosophy	(2009)
53.	Haghnegahdar, A.	Master of Science	(2009)
54.	Melliger, J.	Master of Science	(2009)
55.	Mino, V.	Master of Science	(2009)
56.	Ruark, M.	Master of Science	(2009)
57.	Hallberg, N.*	Master of Science	(2008)
58.	Tripp, D.	Master of Science	(2007)
59.	Cullor, J.	Master of Science	(2006)
60.	Huang, X.	Doctor of Philosophy	(2006)
61.	Mejia, A.	Master of Science	(2006)
62.	Perry, M.	Master of Science	(2006)
63.	Jawson, S.	Master of Science	(2005)

M.S. and Ph.D. Committee Membership

* *Pontificia Universidad Católica*

1.	Nozari, S.	Doctor of Philosophy	*Civil and Environmental Engineering*	(2023)
2.	Natoli, M.	Doctor of Philosophy	*Atmospheric Science*	(2022)
3.	Adams, S.	Doctor of Philosophy	*Civil and Environmental Engineering*	(2021)
4.	Baker, J.	Doctor of Philosophy	*Civil and Environmental Engineering*	(2021)
5.	Chong, P.*	Master of Science	*Civil and Environmental Engineering*	(2021)
6.	Deng, C.	Doctor of Philosophy	*Civil and Environmental Engineering*	(2021)
7.	Koeritzer, D.	Master of Science	*Atmospheric Science*	(2021)
8.	Noe, P.	Master of Science	*Civil and Environmental Engineering*	(2021)
9.	Sperry, J.	Master of Science	*Civil and Environmental Engineering*	(2021)
10.	Whitaker, J.	Doctor of Philosophy	*Atmospheric Science*	(2021)
11.	Xiang, Z.	Doctor of Philosophy	*Civil and Environmental Engineering*	(2021)

12.	Zimmer, C.	Master of Science	*Civil and Environmental Engineering*	(2021)
13.	Hocking, C.	Master of Science	*Civil and Environmental Engineering*	(2020)
14.	Nielsen, E.	Doctor of Philosophy	*Atmospheric Science*	(2019)
15.	Patton, A.	Doctor of Philosophy.	*Earth Sciences*	(2019)
16.	Baker, J.	Master of Science	*Civil and Environmental Engineering*	(2018)
17.	Brogan, D.	Doctor of Philosophy	*Civil and Environmental Engineering*	(2018)
18.	Bunster, T.*	Master of Science	*Civil and Environmental Engineering*	(2018)
19.	Hannon, D.	Master of Science	*Civil and Environmental Engineering*	(2018)
20.	Natoli, M.	Master of Science	*Atmospheric Science*	(2018)
21.	Scheel, K.	Master of Science	*Atmospheric Science*	(2018)
22.	Marinescu, L.	Doctor of Philosophy	Atmospheric Science	(2017)
23.	Petkovic, V.	Doctor of Philosophy	*Atmospheric Science*	(2017)
24.	Whitaker, J.	Master of Science	*Atmospheric Science*	(2017)
25.	Garrett, K.	Master of Science	*Geosciences*	(2016)
26.	Hathaway, J.	Master of Science	*Civil and Environmental Engineering*	(2016)
27.	Johnson, A.	Master of Science	*Watershed Science*	(2016)
28.	Patton, A.	Master of Science	*Earth Sciences*	(2016)
29.	Pfohl, A.	Master of Science	*Earth Sciences*	(2016)
30.	Roy, G.	Doctor of Philosophy	*Atmospheric Science*	(2016)
31.	Saavedra, F.	Doctor of Philosophy	*Earth Sciences*	(2016)
32.	Webb, R.	Doctor of Philosophy	*Civil and Environmental Engineering*	(2016)
33.	Wehner, C.	Master of Science	*Watershed Science*	(2016)
34.	Kullberg, E.	Master of Science	*Civil and Environmental Engineering*	(2015)
35.	Peters, J.	Doctor of Philosophy	*Atmospheric Science*	(2015)
36.	Rydbeck, A.	Doctor of Philosophy	*Atmospheric Science*	(2015)
37.	Wallace, C.	Master of Science	*Civil and Environmental Engineering*	(2015)
38.	Augustine, A.	Master of Science	*Civil and Environmental Engineering*	(2014)
39.	Steininger, A.	Master of Science	*Civil and Environmental Engineering*	(2014)
40.	Garber, J.	Master of Science	*Geosciences*	(2013)
41.	Roy, G.	Master of Science	*Atmospheric Science*	(2013)
42.	Zuazo, V.*	Master of Science	Civil and Environmental Engineering	(2013)
43.	Beckman, N.	Doctor of Philosophy	*Earth Sciences*	(2012)
44.	Delage, A.	Master of Science	*Civil and Environmental Engineering*	(2012)
45.	Hastings, B.	Master of Science	*Watershed Science*	(2012)
46.	Lynch, S.	Master of Science	*Atmospheric Science*	(2012)
47.	Rydbeck, A	Master of Science	*Atmospheric Science*	(2012)
48.	Seigel, R.	Doctor of Philosophy	*Atmospheric Science*	(2012)
49.	Quantz, H.	Master of Science	*Atmospheric Science*	(2009)
50.	Van Cleave, D.	Master of Science	*Atmospheric Science*	(2009)
51.	Jacobs, E.	Master of Science	*Geosciences*	(2008)
52.	Lee, T.	Doctor of Philosophy	*Civil and Environmental Engineering*	(2008)
53.	Miller, G.	Master of Science	*Civil and Environmental Engineering*	(2007)
54.	Pilgrim, K.	Master of Science	*Civil and Environmental Engineering*	(2007)
55.	Kreiner, D.	Master of Science	*Geosciences*	(2006)
56.	Rapp, D.	Master of Science	*Atmospheric Science*	(2006)

Supervised Postdoctoral Associates & Hosted Visiting Scholars

Chong Henriquez, P., *Visiting Scholar* (2019)
Mirosi, D., *Visiting Scholar* (2019)
Gironas, J., *Visiting Scholar* (2018–2019)
Bunster, T., *Visiting Scholar* (2018)
Coleman, M.L., *Postdoctoral Associate* (2012–3014)
Moreno-Pérez, M.F., *Visiting Scholar* (2010–2011)

SERVICE

University Committees

International Development Studies Board	(2023–present)	
Colorado Water Center Proposal Review Committee	(2020–2021)	*Chair* (2020–2021)
Colorado Water Center Proposal Review Committee	(2020)	
Graduate Student Showcase Judge	(2019)	
Colorado Water Center Executive Committee	(2018–2023)	
Water Minor Review Committee	(2013–2014)	
International Development Studies Board	(2013–2016)	
Fulbright Faculty Advisors	(2012–2014)	
Middle East North Africa Studies Board	(2008–2010)	
AGU Hydrology Days Organizing Committee	(2006–present)	
International Development Studies Board	(2004–2008)	*Chair* (2006–2007)

College Committees

Implementation Committee for Initiative 2	(2016–2019)
Department Head Search Committee	(2013–2014)
Curriculum Committee	(2012–2016)
Code Committee	(2012)
Graduate Student Recruitment Committee	(2006–2009)
Technology Committee	(2006–2007)
Strategic Planning Focus Group	(2005)
Engineering Open House Committee	(2002–2003)
United Way Faculty Representative	(2002–2003)

Department Committees

Website Redesign Committee	(2023-present)	
Faculty Candidate Search Committee	(2022–2023)	
Faculty Candidate Search Committee	(2021–2022)	*Chair* (2021–2022)
Awards Committee	(2020–2022)	
Promotion Committee	(2020–present)	*Chair* (2023-present)
Non-Tenure Track Promotion Committee	(2020)	*Chair* (2020)
Borland Committee	(2019–2022)	
Tenure Committee	(2017–2021)	*Chair* (2020–2021)

Hydrologic Science and Engineering Coordinator	(2020–present)	
Faculty Candidate Search Committee	(2015–2016)	
Undergraduate Instruction Committee	(2014–2019)	
Code Committee	(2014–2018)	
Water and International Development (WAID) Coordinator	(2013–present)	
Faculty Candidate Search Committee	(2012–2013)	
Workload Focus Group	(2012)	
Faculty Candidate Search Committee	(2011–2012)	
Tenure Committee	(2011–2016)	*Chair* (2015–2016)
Code Committee	(2010–2012)	
Faculty Workload Committee	(2010–2011)	
Borland Committee	(2010–2013)	
Graduate Application Review Committee	(2007–2009)	*Chair* (2008–2009)
Advisory Committee	(2006–2007)	
Graduate Application Review Committee	(2006)	
Int'l Water Resources Development Course Task Force	(2004–2005)	*Chair* (2004–2005)
Statistics in the Core Curriculum Task Force	(2003)	
Graduate Instruction Committee	(2003–2007)	*Chair* (2006–2007)
Faculty Workload Task Force	(2003)	
Undergraduate Curriculum Committee	(2001–2003)	
Faculty Workload Task Force	(2001)	
Faculty Candidate Search Committee	(2001)	

Student Organizations

Faculty Advisor, Chi Alpha (2016)
Faculty Advisor, American Society of Civil Engineers Student Chapter (2010)
Faculty Advisor, Chi Epsilon Student Chapter (2010)

Professional Organizations

Member, Next Generation NATO Reference Mobility Model Working Group (2016–2022)
Member, Standing Committee for Education and Outreach, Consortium of Universities for the Advancement of Hydrologic Science, Inc. (CUAHSI) (2014–2016)
Member, Hydrologic Focus Group, Community Surface Dynamics Modeling System, National Science Foundation (2009–2014)
Member, Surface Processes Working Group, Community Surface Dynamics Modeling System, National Science Foundation (2007–2014)
Colorado State University Representative, Consortium of Universities for the Advancement of Hydrologic Science, Inc. (CUAHSI) (2005–2019)
Penn State Alternate Representative, Consortium of Universities for the Advancement of Hydrologic Science, Inc. (CUAHSI) (2002–2003)
Member, Hydropedology Steering Committee, Soil Science Society of America (2002–2004)
Judge of Student Papers, Climate and Tectonic Controls on Hillslope Processes and Sediment Production, American Geophysical Union Fall Meeting (2002)
Member, American Society of Civil Engineers, (2003–present)
Associate Member, American Society of Civil Engineers (2001–2003)

Member, American Society for Engineering Education (2001–present)
Member, American Geophysical Union (1994–present)

Independent Reviews

Institutional Review, Institute for Natural Resources and Institute for Water and Watersheds Review Panel, Oregon State University (2017)
External Promotion Reviews (1 in 2023, 2 in 2022, 1 in 2017, 1 in 2012)
Grant Review Panel, Hydrologic Sciences, National Science Foundation (2017)
Grant Review Panel, SMAP, National Aeronautics and Space Administration (2013)
Grant Review Panel, Terrestrial Hydrology Review Panel (Remote Participation), National Aeronautics and Space Administration (2011)
Grant Proposal Reviews (American Chemical Society Petroleum Research Fund, Colorado Water Center, Engineer Research and Development Center, Illinois-Indiana Sea Grant College Program, National Aeronautics and Space Administration, National Science Foundation, University of Wisconsin Water Resources Institute)
Journal Manuscript Reviews (Advances in Water Resources, American Geophysical Union Advances, Annals of the American Association of Geographers, Computers and Electronics in Agriculture, Computers and Geosciences, Earth Surface Processes and Landforms, Field Crops Research, Geoderma, Geology, Geomorphology, Geophysical Research Letters, Hydrologic and Earth System Science, Hydrologic Processes, Journal of Geophysical Research-Earth Surface, Journal of Geophysical Research-Solid Earth, Journal of Hydrologic Engineering, Journal of Hydrology, Journal of Hydrology Regional Studies, Journal of Hydrometeorology, Journal of the American Water Resources Association, Remote Sensing, Remote Sensing of Environment, Science, Science of the Total Environment, Sensors, Soil Science Society of America Journal, Vadose Zone Journal, Water, Water Resources Research, and Water Science and Engineering)
Pre-Reviews of U.S. Government Manuscripts (Agricultural Research Service, United States Geological Survey)
Conference Extended Abstract Reviews (International Association of Geophysical Contractors)
Textbook Reviews (Blackwell and Prentice Hall)
Textbook Proposal Reviews (American Society of Civil Engineers)
Chapter Reviews (Cambridge University Press, Geological Society of America, Reviews in Engineering Geology)
Design Manual Review (Engineering Ministries International)
Fellowship Review (MacArthur Foundation)

International Development

Ngagara and Gitega, Burundi. Assisted with water and sanitation system master planning for university campus serving 5000 students and proposed university campus serving up to 25,000 students (2022)
Kijabe, Kenya. Provided remote technical guidance regarding water and sanitation system improvements for a children's orthopedic hospital (2021)
El Pital, El Salvador. Provided technical guidance for senior design project focusing on the design of water supply systems for a small rural community (2018–2019)
Belmopan, Belize. Developed water supply and sanitation master plans for a K-12 school campus (2018)
Lesoit, Tanzania. Supervised graduate student who planned water supply system for a small Maasai community (2017)

Murcia, Philippines. Supervised graduate student who developed water supply and wastewater master plans for a proposed orphanage campus (2017)

Chogoria, Kenya. Provided technical guidance for field team that developed water supply and wastewater master plans for a hospital complex and associated housing (2016)

Gulbarga, India. Provided technical guidance for field team that designed water and wastewater systems for a goat farm cooperative (2015)

Bomet, Kenya. Provided technical guidance and review for a field team that evaluated the water and wastewater systems for a hospital complex (2013–2015)

Nkoltang, Gabon. Developed water and wastewater master plans for large campus including an orphanage, schools, medical clinic, housing for widows/widowers, and other facilities (2011)

Kijabe, Kenya. Led seven-person team that developed 10-year master plan for water and wastewater systems of a large hospital complex and associated community (2010–2014)

La Laguneta and El Chile, El Salvador. Provided technical guidance for Engineers Without Borders project to improve water supplies for two small communities (2005–2009)

Zacapa, Guatemala. Assessed condition and planned improvements for the water supply system of orphanage campus. Assisted with preliminary design of wastewater improvements (2002)