Ryan R. Morrison, Ph.D., P.E.
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Education

Ph.D.	2014	Civil Engineering	University of New Mexico
M.S.	2006	Civil Engineering	Washington State University
B.S.	2005	Civil Engineering	Washington State University

Professional Appointments

2016—Present	Assistant Professor, Department of Civil and Environmental Engineering, Colorado State University
2015—2016	Research Environmental Engineer, Fort Collins Science Center, U.S. Geological Survey
2014—2015	Postdoctoral Fellow, Center for Water and the Environment, University of New Mexico
2010—2014	Graduate Research Assistant, Department of Civil Engineering, University of New Mexico
2006—2010	Water Resources Engineer, HDR Engineering Inc., Portland, Oregon

Registration and Certification

Professional Engineering License, State of Oregon, #83140PE

Honors and Awards

- Outstanding Graduate Student of the Year, University of New Mexico (2014)
- Future Faculty Award, University of New Mexico (2013)
- Graduate Dean's Dissertation Fellowship, University of New Mexico (2013)
- Hydro Research Foundation Fellowship (2011)
- American Society of Civil Engineers Freeman Fellowship (2011)
- American Water Resources Association New Mexico Chapter Fellowship (2010)
- Harold P. Curtis Scholarship, Washington State University (2006)

Publications

16 published peer-reviewed journal articles
6 peer-review journal articles in review or preparation
3 book chapters
Total citations = 174; h-index = 8; i-index = 6 (Google Scholar as of 08/13/2019)

[1] Graduate student funded or advised by R. Morrison

[2] Post-doctoral researcher funded by R. Morrison

Peer-Reviewed Journal Papers

23. Oke, O.[1], **Morrison, R.R.**, Carter, E., Dougherty, E., and Rasmussen, K. Hydrometeorological and demographic links for different flood recurrence intervals. *Environmental Research Letters*. In preparation.

22. Oikonomou, P.[2], **Morrison, R.R.**, Wible, T. and Sidhu, R. Updated hydraulic methodology for determining instream flows in Colorado. *Journal of the American Water Resources Association*. In preparation.

21. Bray, E.[2], **Morrison, R.R.**, and Stone, M.C. Environmental flows: physical processes and steps forward. In preparation.

20. Dougherty, E.[1], **Morrison, R.R.**, and Rasmussen, K. Flood rainfall-streamflow relationships in two contrasting U.S. river basins. *Advances in Water Resources* In preparation.

19. Lurtz, M.R.[1], **Morrison, R.R.**, Gates, T.K., Senay, G.B., Bhaskar, A.S., and Ketchum, D.G. Spatio-temporal relationships between riparian evapotranspiration and groundwater depths in a semi-arid irrigated river valley. *Hydrological Processes*. In revision.

18. Karpack, M.[1], **Morrison, R.R.**, and McManamay, R. Quantitative assessment of floodplain functionality using an index of integrity. *Ecological Indicators*. Revised and in review.

17. Byrne, C.F., Stone, M.C., and **Morrison, R.R.** Accepted. Scalable flux metrics at the channel-floodplain interface as indicators of lateral surface connectivity during flood events. *Water Resources Research*. 55. https://doi.org/10.1029/2019WR026080.

16. Annis, A., Nardi, F. Castelli, F., and **Morrison, R.R.** 2019. Investigating hydrogeomorphic floodplain mapping performances with varying DTM resolution and stream orders. *Hydrological Sciences Journal*. 64(5): 525–538. https://doi.org/10.1080/02626667.2019.1591623.

15. Scheel, K.[1], **Morrison, R.R.**, Nardi, F., and Annis, A. 2019. Understanding the large-scale influence of levees on floodplain connectivity using a hydrogeomorphic approach. *Journal of the American Water Resources Association* 55(2): 413–429. https://doi.org/10.1111/1752-1688.12717

14. Jaramillo, L., Stone, M., and **Morrison, R.R.** 2018. An indicator-based approach to assessing resilience of socio-hydrologic systems in Nepal to hydropower development. *Journal of Hydrology* 563: 1111–1118. https://doi.org/10.1016/j.jhydrol.2018.05.070.

13. **Morrison, R.R.**, Bray, E.[2], Nardi, F., Annis, A., and Dong, Q. 2018. Spatial relationships of levees and wetland systems within floodplains of the Wabash Basin, USA. *Journal of the American Water Resources Association* 54(4): 934–948. https://doi.org/10.1111/1752-1688.12652.

12. Gregory, A., **Morrison, R.R.**, Stone, M.C. 2018. Assessing the hydrogeomorphic effects of environmental flows using hydrodynamic modeling. *Environmental Management* 62(2): 352–364. https://doi.org/10.1007/s00267-018-1041-6.

11. Nardi, F., **Morrison, R.R.**, Annis, A., and Grantham, T. 2018. Hydrologic scaling for hydrogeomorphic floodplain mapping: insights into human-induced floodplain disconnectivity. *River Research and Applications* 34:675-685. https://doi.org/10.1002/rra.3296.

10. Stone, M.C., Byrne, C.F., and **Morrison, R.R.** 2017. Evaluating the impacts of hydrologic alteration on floodplain connectivity. *Ecohydrology*. 5(10): e1833. https://doi.org/10.1002/eco.1833.

9. Gunderson, L., Cosens, B.A., Chaffin, B.C., Arnold, C.A.T., Fremier, A.K., Garmestani, A.S., K. Craig, R., Gosnell, H., Birge, H.E., Allen, C.R., Benson, M.H., **Morrison, R.R.**, Stone, M.C., Hamm, J.A., Nemec, K., Schlager, E., and Llewellyn, D. 2017. Regime shifts and panarchies in regional scale social-ecological water systems. *Ecology and Society* 22(1):31. https://doi.org/10.5751/ES-08879-220131.

8. Benson, M.H., Lippitt, C.D., **Morrison, R.R.**, Cosens, B., Boll, J., Chaffin, B.C., Fremier, A.K., Heinse, R., Kauneckis, D., Link, T.E., Scruggs, C., Stone, M., and Vanessa, V. 2016. Five ways to support interdisciplinary work before tenure. *Journal of Environmental Studies and Science* 6(2): 260-267. https://doi.org/10.1007/s13412-015-0326-9.

7. **Morrison, R.R.** and Stone, M.C. 2015. Investigating environmental flows for riparian vegetation recruitment using system dynamics modeling. *River Research and Applications* 31(4):485-496. https://doi.org/10.1002/rra.2758.

6. **Morrison, R.R.** and Stone, M.C. 2015. Evaluating the impacts of environmental flow alternatives on reservoir and recreational operations using system dynamics modeling. *Journal of the American Water Resources Association* 51(1):33-46. https://doi.org/10.1111/jawr.12231.

5. Benson, M.H., Llewellyn, D., **Morrison, R.R.**, and Stone, M.C. 2014. Water governance challenges in New Mexico's Middle Rio Grande Valley: a resilience assessment. *Idaho Law Review* 51(1):195-228. https://heinonline.org/HOL/P?h=hein.journals/idlr51&i=207

4. **Morrison, R.R.** and Stone, M.C. 2014. Spatially implemented Bayesian network model to assess environmental impacts of water management. *Water Resources Research* 50(1):8107-8124. https://doi.org/10.1002/2014WR015600.

3. **Morrison, R.R.**, Stone, M.C., and Sada, D. 2013. Environmental response of a desert springbrook to incremental discharge reductions, Death Valley National Park, California, USA. *Journal of Arid Environments* 99:5-13. https://doi.org/10.1016/j.jaridenv.2013.09.002.

2. Harm Benson, M., **Morrison, R.R.**, and Stone, M.C. 2013. A classification framework for running adaptive management rapids. *Ecology and Society* 18(3):30. https://doi.org/10.5751/ES- 05707-180330.

1. **Morrison, R.R.**, Hotchkiss, R.H., Stone, M.C., Thurman, D., and Horner-Devine, A.R. 2009. Turbulence characteristics of flow in a spiral corrugated culvert fitted with baffles and implications for fish passage. *Ecological Engineering* 35(3):381-392. https://doi.org/10.1016/j.ecoleng.2008.10.012.

Book Chapters

3. **Morrison, R.** and Bray, E.[2] 2019. "Environmental Flows." In: *Oxford Bibliographies in Environmental Science*. Wohl, E. (Ed.) New York: Oxford University Press. https://doi.org/10.1093/OBO/9780199363445-0116.

2. Stone, M. and **Morrison, R.** 2019. Simplification of Southwestern rivers and stream habitats. In: *Standing Between Life and Extinction: Ethics and Ecology of Conserving Aquatic Species in the American Southwest*, Propst, D., Williams, J., Bestgen, K., and Hoagstrom, C. (Eds.). University of Chicago Press.

1. Benson, M.H., **Morrison, R.**, Llewelyn, D., and Stone, M. 2018. Governing the Rio Grande: Challenges and Opportunities for New Mexico's Water Supply. In: *Practical Panarchy for Adaptive Water Governance: Linking Law to Social-Ecological Resilience*, Cosens, B. and Gunderson, L. (Eds.). 99-114. Springer. https://doi.org/10.1007/978-3-319-72472-0_7.

Other Peer-Reviewed Papers

3. **Morrison, R.R.** and Stone, M.C. 2013. Implementing environmental flows in complex water resource systems: the Rio Chama, New Mexico, USA. 3rd Biennial Symposium of the International Society for River Science. Beijing, China. August 5–9.

2. Harris, S., Harvey, M., Stone, M., **Morrison, R.**, Caplan, T., Gustina, G., and Harm Benson, M. 2012. Flow optimization for geomorphic and ecological improvements in the wild and scenic reach of the Rio Chama, New Mexico. World Environmental & Water Resources Congress, American Society of Civil Engineers. Albuquerque, New Mexico. May 20–24.

1. Stone, M.C., Hotchkiss, R.H. and **Morrison, R.** 2005. Periphyton scour from hydraulic disturbances. World Water and Environmental Resources Congress, Anchorage, Alaska, May 15-19.

Conference Presentations

35. **Morrison, R.**, Karpack, M.[1] 2019. Quantitative assessment of floodplain functionality using an index of integrity. 6th Biennial Symposium of the International Society of River Science. Vienna, Austria. September 8–13.

34. **Morrison, R.**, Doughtery, E.[1], Rasmussen, K., Carter, E., and Oke, O.[1] 2019. A framework for estimating moisture susceptibility attributable to natural flooding hazards in the U.S. American Geophysical Union Hydrology Days. Fort Collins, CO. March 27–29.

33. Lurtz, M.R.[1], **Morrison, R.R.**, Gates, T.K., Bhaskar, A.S., Senay, G.B., and Ketchum, D. 2019. Riparian vegetation characteristics and evapotranspiration in relation to groundwater exchange and water table fluctuations along an irrigated river valley. American Geophysical Union Hydrology Days. Fort Collins, CO. March 27–29.

32. Karpack, M.[1] and **Morrison, R.** 2019. Quantitative assessment of floodplain functionality using an index of integrity. American Geophysical Union Hydrology Days. Fort Collins, CO. March 27–29.

31. Bray, E.N.[2], **Morrison, R.R.**, and Stone, M.C. 2018. Process-based environmental flow science for a non-stationary world. American Geophysical Union Fall Meeting. Washington, D.C. December 10–14.

30. **Morrison, R.** 2018. Environmental resilience in floodplain management. 3rd Annual Resilience Colloquium. University of New Mexico, Albuquerque, New Mexico. August 8–9. Invited.

29. Annis, A., **Morrison, R.R.**, Nardi, F., Castelli, A. 2018. A hydrogeomorphic algorithm and its performance with varying DEM resolution and stream order for large-scale floodplain mapping. 9th International Congress on Environmental Modelling and Software. Fort Collins, Colorado. June 24–28.

28. Nardi, F., **Morrison, R.R.**, Annis, A., and Grantham, T.E. 2018. Hydrologic scaling and hydrogeomorphic floodplain delineation in urbanized basins: insights into human-induced disconnectivity of fluvial corridors. European Geophysical Union General Assembly. Vienna, Austria. April 8–13.

27. Scheel, K.[1] **Morrison, R.R.**, Annis, A., and Nardi, F. 2018. Toward understanding changes in large-scale floodplain connectivity caused by levees. American Geophysical Union Hydrology Days. Fort Collins, Colorado. March 19–21.

26. **Morrison, R.** 2017. Exploring water management impacts on floodplain processes across different scales. 4th Annual Symposium for Multi-disciplinary Approaches to Urban Water Systems and their Environmental Sustainability. East China Normal University, Shanghai, China. November 2. Invited.

25. **Morrison, R.** 2017. Exploring water management impacts on floodplain processes across different scales. Symposium for Multi-disciplinary Approaches to Urban Water Systems and their Environmental Sustainability. University of Jinan, Jinan, China. October 31. Invited.

24. **Morrison, R.**, Nardi, F., Annis, A., Grantham, T., and Dong, Q. 2017. Assessing loss of floodplain connectivity using hydrogeomorphic floodplain delineation techniques.

American Water Resources Spring Specialty Conference. Snowbird, Utah. April 30–May 3.

23. Sada, D.W., Rina, S., Hausner, M., **Morrison, R.**, Stone, M. 2016. Environmental and biological responses to incremental decreases in spring discharge: examples from the Great Basin and Mojave deserts, USA. Desert Fishes Council Annual Meeting. Albuquerque, New Mexico. November 15–19.

22. Nadi, F., **Morrison, R.**, Grantham, T., and Annis, A. 2016. SMART-WORM: A GIS platform implementing hydrogeomorphic tools for Water Optimal Risk Management at the large scale. Smart Rivers International Conference. Ferrara, Italy. September 23 (Invited).

21. Stone, M., Byrne, C., and **Morrison, R.**, 2016. Assessment of hydrologic alteration using floodplain connectivity metrics. Ecological Society of America Annual Meeting 2016. Fort Lauderdale, Florida. August 7–12.

20. Grantham, T., Nardi, F., **Morrison, R.**, and Annis, A. 2016. A hydrogeomorphic approach for large-scale floodplain mapping. American Water Resources Association Summer Specialty Conference: GIS and Water Resources IX. Sacramento, California. July 11–13.

19. Stone, M., Byrne, C., and **Morrison, R.** 2015. A numerical investigation of the impacts of river and floodplain restoration on the process of floodwave attenuation. American Geophysical Union Fall Meeting. San Francisco, California. December 14–18. Invited.

18. Hausner, M., Gaines, D., **Morrison, R.**, Sada, D., Scoppettone, G., Stone, M., Suarez, F., Tyler, S., and Wilson, K. 2015. Physical Thresholds as Ecological Proxies in Aquatic Ecosystems. American Geophysical Union Fall Meeting. San Francisco, California. December 14–18.

17. Jaramillo, L., Stone, M., and **Morrison, R.** 2015. Science-based policy for Himalayan rivers of Nepal. AWRA Annual Water Resources Conference. Denver, Colorado. November 16–19.

16. Stone, M. and **Morrison, R.** 2015. Consideration of longitudinal and lateral connectivity when evaluating environmental flows. 4th Biennial Symposium of the International Society for River Science. La Crosse, Wisconsin. August 23–28.

15. Hausner, M., Sada, D., **Morrison, R.**, and Stone, M. 2015. Integrating physical and ecological methods to assess changing spring-fed aquatic ecosystems. Science for Parks, Parks for Science: The Next Century, Berkley, California. March 25–27.

14. Stone, M., **Morrison, R.**, and Samson, J. 2014. Modeling of riparian ecohydrology in the Gila River. American Society of Civil Engineers New Mexico Section Fall Conference, Albuquerque, New Mexico. September 12.

13. Benson, M., Stone, M., Llewellyn, D., **Morrison, R.**, Cosens, B., Gunderson, L., and Allen, C. 2014. Adaptive governance and social-ecological system resilience in New

Mexico's Rio Grande Valley. Association of Environmental Studies as Sciences Annual Meeting, New York, New York. June 11–14.

12. **Morrison, R.R.** and Stone, M.C. 2014. Evaluating flow scenario impacts on riparian vegetation recruitment using Bayesian network modeling. Joint Aquatic Sciences Meeting. Portland, Oregon. May 18–23.

11. **Morrison, R.R.** and Stone, M.C. 2013. Using system dynamics modeling to evaluate environmental flows in the Rio Chama, NM. 58th Annual New Mexico Water Conference. Albuquerque, New Mexico. November 21–22.

10. **Morrison, R.R.** 2013. Evaluating tradeoffs of water resource management alternatives using system dynamics modeling. Hydrovision International. Denver, Colorado. July 23–26.

9. **Morrison, R.R.** 2012. Optimizing hydropower benefits in reservoir operations on the Rio Chama, New Mexico. Hydrovision International. Louisville, Kentucky. July 17–20.

8. **Morrison, R.R.** and Stone, M.C. 2012. Determining the hydrologic effects of water management efforts on the Rio Chama, New Mexico, using indicators of hydrologic alteration analyses. Association of the Sciences of Limnology and Oceanography. Lake Biwa, Shiga, Japan. July 8–13.

7. **Morrison, R.R.**, Stone, M.C., and Sada, D.W. 2011. Detecting impacts of climate change on arid land spring-fed aquifer systems. An example from a Death Valley National Park thermal spring. The US Society for Irrigation and Drainage Professionals. Albuquerque, New Mexico. April 26–29.

6. **Morrison, R.R.**, Hotchkiss, R.H., Stone, M.C., Thurman, D., and Horner-Devine, A.R. 2008. Turbulence characteristics of flow in a spiral corrugated culvert fitted with sloped- and slotted-weir baffles. World Environmental & Water Resources Congress, American Society of Civil Engineers. Honolulu, Hawaii. May 12–16.

5. Thurman, D.R., Horner-Devine, A.R., **Morrison, R.R.**, and Hotchkiss, R.H. 2007. Juvenile salmon passage in sloped-baffled culverts. International Conference on Ecology and Transportation. Little Rock, Arkansas. May 20–25.

4. **Morrison, R.R.**, Thurman, D.R., Compton, A.F., Hotchkiss, R.H., and Horner-Devine, A.R. 2006. Turbulence characteristics of flow in a culvert with sloped-weir baffles. World Environmental & Water Resources Congress, American Society of Civil Engineers. Omaha, Nebraska. May 21–26.

3. Stone, M.C., Hotchkiss, R.H., and **Morrison, R.R.** 2006. Turbulence observations in cobble-bed rivers. World Environmental & Water Resources Congress, American Society of Civil Engineers. Omaha, Nebraska. May 21–26.

2. Thurman, D.R., Horner-Devine, A.R., **Morrison, R.R.**, Hotchkiss, R.H., and Compton, A.F. 2006. Hydrodynamics of juvenile salmon passage in sloped-baffle culverts. World Environmental & Water Resources Congress, American Society of Civil Engineers. Omaha, Nebraska. May 21–26.

1. Stone, M.C., Hotchkiss, R.H., and **Morrison, R.R.** 2006. Turbulence observations in cobble-bed rivers. World Environmental & Water Resources Congress, American Society of Civil Engineers. Omaha, Nebraska. May 21–26.

Poster Presentations

12. Oikonomou, P.D.[2], Morrison, R.R., Sidhu, R., and Wible, T. 2019. Development of a web-based tool for instream flow recommendations in Colorado. American Geophysical Union Hydrology Days. Fort Collins, CO. March 27–29.

11. Karpack, M.S.[1], **Morrison, R.R.**, and McManamay, R.A. 2018. Quantitative assessment of floodplain functionality using an index of integrity. American Geophysical Union Fall Meeting. Washington D.C. December 10–14.

10. **Morrison, R.R.,** Dougherty, E.[1], Rasmussen, K.L., Carter, E., and Oluwatobi, O.[1] 2018. A Framework for Estimating Moisture Susceptibility Attributable to Natural Flooding Hazards in the U.S. American Geophysical Union Fall Meeting. Washington D.C. December 10–14.

9. Lurtz, M. [1], **Morrison, R.**, Bhaskar, A., Gates, T., Senay, G., and Ketchum, D. 2018. Riparian Vegetation Indices and Evapotranspiration in Relation to Groundwater Exchange and Water Table Fluctuations along an Irrigated River Valley. American Geophysical Union Fall Meeting. Washington D.C. December 10–14.

8. Lurtz, M.R. [1], **Morrison, R.R.**, Bhaskar, A.S., and Gates, T.K. 2018. Riparian area evapotranspiration with implications on water resource management. American Geophysical Union Hydrology Days. Fort Collins, Colorado. March 19–21.

7. Scheel, K.[1], **Morrison, R.R.**, Nardi, F., and Annis, A. 2017. Assessing human modifications to floodplains using large-scale hydrogeomorphic floodplain modeling. American Geophysical Union Fall Meeting. New Orleans, Louisiana. December 11–15.

6. Bray, E.N.[2], **Morrison, R.R.**, Nardi, F., Annis, A., and Dong, Q. 2017. Spatial relationships of levees and wetland systems within floodplains of the Wabash Basin, USA. American Geophysical Union Fall Meeting. New Orleans, Louisiana. December 11–15.

5. Jaramillo, L.V., Stone, M.C., and **Morrison, R.R.** 2017. Evaluating vegetation potential for wildfire impacted watershed using a Bayesian network modeling approach. American Geophysical Union Fall Meeting. New Orleans, Louisiana. December 11–15.

4. Scheel, K.[1], **Morrison, R.R.**, Nardi, F., and Annis, A. 2017. Assessing floodplain loss using hydrogeomorphic mapping. AWRA Annual Water Resources Conference. Portland, Oregon. November 5–9.

3. **Morrison, R.** Dong, Q., Nardi, F., Annis, A., and Grantham, T. 2016. Levee presence and wetland areas within the 100-year floodplain of the Wabash Basin. American Geophysical Union Fall Meeting. San Francisco, California. December 12–16.

2. Hausner, M., Bailey Gaines, D., **Morrison, R.**, Sada, D., Gary Scoppettone, G., Stone, M., Suáez, F., Tyler, S., and Wilson, K. 2015. Physical thresholds as ecological proxies in aquatic ecosystems. American Geophysical Union Fall Meeting. San Francisco, California. December 14–18.

1. **Morrison, R.R.**, Stone, M.C. and Sada, D.W. 2013. Impacts of Discharge Reductions on Physical and Thermal Habitat Characteristics in a Desert Spring, Death Valley National Park, California, USA. American Geophysical Union Fall Meeting. San Francisco, California. December 9–13. (Invited)

Other Publications

3. Oikonomou, P.D. [2], **Morrison, R.R.**, Sidhu, R., and Wible, T. 2019. Instream Flow Recommendations Web-Based Tool for Colorado. Colorado Water, The Colorado Water Center. https://watercenter.colostate.edu/wp-content/uploads/sites/33/2019/10/ColoradoWater_V36-3-r11.pdf#page=27.

2. Stone, M., Afrin, Z., Gregory, A., and **Morrison, R.** 2017. An Investigation into the Potential Impacts of Watershed Restoration and Wildfire on Water Yields and Water Supply Resilience in the Rio Grande Water Fund Project Area. Prepared for Middle Rio Grande Conservancy District (MRGCD).

1. Gori, D., Cooper, M.S., Soles, E.S., Stone, M., **Morrison, R.**, Turner, T.F., Propst, D.L., Garfin, G., Switanek, M., Hsin-I, C., Bassett, S., Haney, J., Lyons, D., Horner, M., Dahm, C.N., Frey, J.K., Kindscher, K., Walker, H.A., and Bogan, M.T. 2014. Gila River Flow Needs Assessment. The Nature Conservancy. URL: http://nmconservation.org/Gila/GilaFlowNeedsAssessment.pdf.

Invited Lectures

5. University of Wyoming, Haub School of Environment and Natural Resources (October 2019).

4. Colorado State University, Department of Atmospheric Science (April 2019).

3. University of Colorado, Boulder, Department of Civil, Environmental, and Architectural Engineering (April 2018).

2. University of Tennessee, Knoxville, Department of Geography (October 2016).

1. Colorado State University, Department of Ecosystem Science and Sustainability (September 2016).

Research Funding

Funded Awards as PI: **$845,056**

Award Period	Title	Agency	Award
09/26/2019–09/25/2020	Measuring Hydraulic and Thermal Conditions of High Elevation Headwater Streams in Regions of North-Central Colorado	U.S. Geological Survey	$39,000
09/26/2019–09/25/2020	Assessing Status of Water Quality and Environmental Health of our Nation's Rivers	U.S. Geological Survey	$49,999
08/01/2019–07/31/2022	Incorporating Floodplain Functions into River Restoration Engineering: The Role of Floodplain Vegetation on Channel-Floodplain Hydrodynamics	National Science Foundation	$309,553
07/01/2019–06/30/2019	Collaborative Research: Workshop on Improving Knowledge of Connections Between Urban and Hinterland Systems	National Science Foundation	$9,663 (Total: $49,323)
07/01/2019–06/30/2020	Relationship Between Irrigation Return Flows, Riparian Vegetation Water Use, and Soluble Pollutant Removal in the Lower Arkansas River Basin	Colorado Water Conservation Board	$50,000
01/01/2019–06/30/2020	Ecological Impacts of Hydroscape Modification (Year III – Verde River Decision Support Tool)	U.S. Geological Survey	$60,000
07/01/2018–06/30/2019	Instream Flow R2Cross Program Update	Colorado Water Conservation Board	$78,564
07/01/2018–05/15/2019	Development of a Novel Framework for Estimating Moisture Susceptibility Attributable to Natural Flooding Hazards in the U.S.	Colorado Water Center	$22,277
06/18/2018–06/17/2019	Assessment of Floodplain Storage Dynamics in Colorado	U.S. Geological Survey	$25,000
10/01/2017–09/30/2018	Ecological Impacts of Hydroscape Modification (Year II – Large-Scale Floodplain Mapping)	U.S. Geological Survey	$36,000
09/01/2017–08/30/2020	Impact of Riparian Vegetation on the Irrigation-Influenced Water Balance in the Lower Arkansas River Valley	U.S. Department of Agriculture, Colorado Agricultural Experiment Station	$90,000
10/01/2016–09/30/2017	Ecological Impacts of Hydroscape Modification (Year I – Levee Impacts on Wetlands)	U.S. Geological Survey	$75,000

Internally Funded: **$34,409**

Award Period	Title	Agency	Award
04/01/2019–12/31/2019	Resilient Natural and Human Systems: A Framework for Linking Social and Environmental Systems to Create More Resilient Communities	CSU Vice President for Research, Pre-Catalyst for Innovative Partnerships	$5,000
2018	Proposal for Hydrologic Monitoring Equipment	CSU Borland Equipment Fund	$6,806
2017	Proposal for Hydrologic Monitoring Equipment	CSU Borland Equipment Fund	$12,603
2016	Proposal for a Multi-Functional 3D Laser Scanner	CSU Borland Equipment Fund	$10,000

Funded Awards Prior to CSU Appointment: **$62,500**

Award Period	Title	Agency	Award
2015	Co-PI, An Investigation into Potential Impacts of Watershed Restoration and Wildfire on Water Yields and Water Supply Resilience in the Rio Grande Water Fund Project Area	Middle Rio Grande Conservancy District	$25,000
2015	Co-PI, Saratoga Lateral Weir – Physical Model	Southern Sandoval County Arroyo Flood Control Authority	$37,500

Pending Funding
PI, "CAREER: Using River Network Dynamics and Floodplain Restoration for Natural Flood Management" NSF, $508,390.

Service Activities

Professional Memberships

- American Society of Civil Engineers—Environmental Water Resources Institute
- American Water Resources Association
- International Society for River Science
- American Geophysical Union
- National Center for Faculty Development & Diversity

Editorial Positions
Associate Editor in Surface Hydrology, Journal of the American Water Resources Association (2015—Present)

Professional Service and Committees

- Lead Convener of "Linking Social and Ecological Needs to Build Floodplain Resilience" sessions (H51C and H53L), American Geophysical Union Fall Meeting. San Francisco, CA (December 9–13, 2019)

- National Science Foundation ad-hoc reviewer for Division of Chemical, Bioengineering, Environmental and Transport Systems–Environmental Sustainability Program (October 2019)
- National Science Foundation ad-hoc reviewer for Division of Earth Sciences–Geoinformatics Program (October 2019)
- American Geophysical Union, Ecohydrology Technical Committee (2019–Present)
- Co-convener of "Comparative Sociohydrology: Regime Shifts, System Dynamics, and Resilience (H44B) session, American Geophysical Union Fall Meeting. Washington D.C. (December 10–14, 2018)
- National Science Foundation panel member for National Research Traineeship program on Innovations at the Nexus of Food, Energy, and Water Systems (April 4-6, 2017)

Department and University Services

- Engineering Student Technology Committee (2019–Present)
- College of Engineering Technology Committee (2019–Present)
- Civil and Environmental Engineering Department Graduate Admissions Committee (2018–Present)
- School of Global Environmental Sustainability Curriculum Committee (2017–2019)
- Environmental Engineering representative at Engineering Exploration Days (Spring 2017)
- Colorado State University Graduate Student Showcase judge (2016, 2018)

Reviewing Services

- Hydrological Processes
- Systems
- Physical Geography
- Earth Surface Processes and Landforms
- Journal of the American Water Resources Association
- Water Resources Research
- Journal of Hydrology
- River Research and Applications

Teaching and Advising

Courses Taught

- Fluid Mechanics (CE 331): Fall 2013 (University of New Mexico)
- Hydrogeology (CE 541): Fall 2014 (University of New Mexico)
- Ecological Engineering (CIVE 330): Spring 2017–2018
- Environmental River Mechanics (CIVE 413): Fall 2017–2018

Postdoctoral Researchers Mentored

- Erin Bray (2017)
- Panagiotis D. Oikonomou (2018-2019)

Graduate Students Advised

- Kara Scheel (CSU, M.S., Fall 2016—Spring 2018)
- Marissa Karpack (CSU, M.S., Spring 2018—Summer 2019)
- Matthew Lurtz (CSU, Ph.D., Fall 2017—Present)
- Semin Barlak (CSU, Co-advisor, Ph.D., Fall 2017—Present)
- Elaina Passero (CSU, M.S., Fall 2018–Present)
- Heechan Han (CSU, Ph.D., Spring 2019–Present)
- Naveen Kumar (CSU, Co-advisor, M.S., Fall 2019–Present)
- Nick Brouillard (CSU, M.S., Fall 2019–Present)
- Daniel White (CSU, Ph.D. Fall 2019–Present)

Graduate Student Committees

- Ryan Brown (CSU, M.S., Defended Spring 2017)
- Weimin Li (CSU, Ph.D.)
- Woochul Kang (CSU, Ph.D.)
- Robert Queen (CSU, M.S., Defended Spring 2018)
- Ethan Ader (CSU, M.S.)
- Sarah Hinshaw (CSU, M.S.)
- Julianne Scamardo (CSU, M.S.)
- Erin Dougherty (CSU, Ph.D.)
- Lauren Jaramillo (UNM, Ph.D.)

Mentoring Activities

Students I have mentored have earned the following awards:

- Walter Scott, Jr. Combined Fellowship/Research Assistantship, 2019-2020 (Daniel White, Ph.D.)
- GIS Colorado Scholarship, 2019 (Matthew Lurtz, Ph.D.)
- Colorado Environmental Management Society Scholarship, 2018 (Marissa Karpack, M.S.)
- John Fetcher Upper Yampa Water Conservancy District Scholarship, 2018 (Marissa Karpack, M.S.)
- Dr. Jeng-Song Wang Memorial Scholarship, 2018 (Marissa Karpack, M.S.)
- Walter Scott, Jr. College of Engineering Excellence in Research Award for the Graduate Student Showcase, 2018 (Marissa Karpack, M.S.)
- Whitney Borland Scholarship, 2018 (Matthew Lurtz, Ph.D.)
- Daryl B. Simons Graduate Fellowship, 2018 (Matthew Lurtz, Ph.D.)