

## Darren L. Ficklin

September 2022

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### EDUCATION

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Ph.D. in Hydrologic Sciences December 2010  
*University of California at Davis*, Davis, CA, USA

M.S. in Geologic Sciences (Hydrogeology emphasis) May 2007  
*Southern Illinois University at Carbondale*, Carbondale, IL, USA

B.S. in Geologic Sciences (Hydrology emphasis)/Minor in Chemistry May 2004  
*Indiana University at Bloomington*, Bloomington, IN, USA

### APPOINTMENTS AND RESEARCH EXPERIENCE

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Associate Professor, Department of Geography 2018 - *Present*  
*Indiana University*, Bloomington, IN, USA

Director of Graduate Studies, Department of Geography 2019 - *Present*  
*Indiana University*, Bloomington, IN, USA

Director of Research (*Interim*); IU Research & Teaching Preserve 2022 - *Present*  
*Indiana University*, Bloomington, IN, USA

Assistant Professor, Department of Geography 2013 – 2018  
*Indiana University*, Bloomington, IN, USA

Principal Researcher 2013 – *Present*  
*Indiana Geological and Water Survey*, Bloomington, IN, USA

Visiting Assistant Professor, Department of Geography January 2013 – July 2013  
*Indiana University*, Bloomington, IN, USA

Postdoc. Research Assoc./Research Faculty 2010 – 2012  
Department of Environmental Studies and Sciences  
*Santa Clara University*, Santa Clara, CA, USA

### PUBLICATIONS (\*indicates student or postdoc)

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#### *Refereed Publications*

#### *Published or in press*

70. Botero-Acosta, Alejandra, **Darren L. Ficklin**, Nima Ehsani, and Jason H. Knouft, 2022. Climate induced changes in streamflow and water temperature in basins across the Atlantic Coast of the United States: An Opportunity for Nature-based Regional Management. *Journal of Hydrology – Regional Studies (Accepted)*.

69. Khodaei, Mahsa, Taehee Hwang, **Darren L. Ficklin**, Jonathan M. Duncan, 2022. With Warming, Spring Streamflow Peaks are More Coupled with Vegetation Green-up than Snowmelt in the Northeastern United States. *Hydrological Processes* 36(6), e14621. <https://doi.org/10.1002/hyp.14621>
68. **Ficklin, Darren L.** Sarah E. Null, John T. Abatzoglou, Kimberly A. Novick, Daniel T. Myers\*, 2022. Hydrological intensification will increase the complexity of water resource management. *Earth's Future* 10(3), e2021EF002487.
67. Novick, Kimberly A., **Darren L. Ficklin**, Dennis Baldocchi, Kenneth J. Davis, Teamrat Ghezzehei, Alexandra G. Konings, Natasha Macbean, Nina Raoult, Russell L. Scott, Yuning Shi, Benjamin N. Sulman, Jeffrey D. Wood, 2022. Confronting the Water Potential Information Gap. *Nature Geoscience* 15(3), 158-164.
66. Qi, Junyu, Sangchul Lee, Xinzhong Du, **Darren L. Ficklin**, Qianfeng Wang, Debjani Singh, Glenn E. Moglen, Gregory W. McCarthy, Yuyu Zhou, Xuesong Zhang, Daniel T. Myers\*. Coupling Terrestrial and Aquatic Thermal Processes for Improving Stream Temperature Modeling at the Watershed Scale, 2021. *Journal of Hydrology* 603, 126983. doi: <https://doi.org/10.1016/j.jhydrol.2021.126983>
65. Myers, Daniel T.\*, **Darren L. Ficklin**, Scott M. Robeson, 2021. Incorporating rain-on-snow into the SWAT model results in more accurate simulations of hydrologic extremes. *Journal of Hydrology* 603, 126972. doi: <https://doi.org/10.1016/j.jhydrol.2021.126972>
64. Myers, Daniel T.\*, **Darren L. Ficklin**, Scott M. Robeson, Ram P. Neupane\*, Alejandra Botero-Acosta, Pedro M. Avellaneda\*, 2021. Choosing an arbitrary calibration period for hydrologic models: How much does it influence water balance simulations? *Hydrological Processes* 35(2), e14045. doi: <https://doi.org/10.1002/hyp.14045>
63. Cherkauer, Keith, A., Laura Bowling, Indrajeet Chaubey, Natalie Chin, **Darren L. Ficklin**, Alan F. Hamlet, Stephen Kines, Charlotte Lee, Ram Neupane\*, Garrett Pignotti, Sanoar Rahman, Sarmistha Singh, Pandara Valappil Femeena, Tanja Williamson, 2021. Climate Change Impacts and Strategies for Adaptation for Water Resource Management in Indiana. *Climatic Change* 165(21).
62. Hall, Damon M., Susan J. Gilbertz, Matthew B. Anderson, Pedro Avellaneda\*, **Darren L. Ficklin**, Jason H. Knouft, Christopher S. Lowry, 2021. Mechanisms for engaging social systems in freshwater science research. *Freshwater Science* 40(1).
61. Avellaneda, Pedro M.\*, **Darren L. Ficklin**, Christopher Lowry, Jason Knouft, Damon Hall. 2020. Improving hydrological models with the assimilation of crowdsourced data. *Water Resources Research* 56(5), e2019WR026325.
60. Robeson, Scott M. Justin T. Maxwell, and **Darren L. Ficklin**. 2020. Bias correction of paleoclimatic reconstructions: A new look at 1200+ years of Upper Colorado River flow. *Geophysical Research Letters* 47, e2019GL086689.
59. **Ficklin, Darren L.**, John T. Abatzoglou, Kimberly A. Novick. 2019. A new perspective on terrestrial hydroclimatic intensity that incorporates both supply and demand. *Geophysical Research Letters* 46, 8114-8124.
58. Zhang, Quan, **Darren L. Ficklin**, Stefano Manzoni, Lixin Wang, Danielle Way, Richard P. Phillips, Kimberly A. Novick. 2019. Response of ecosystem intrinsic water use efficiency and gross primary productivity to rising vapor pressure deficit. *Environmental Research Letters* 14, 074023.
57. VanCompernelle, Michelle\*, Jason H. Knouft, **Darren L. Ficklin**. 2019. Multispecies freshwater conservation in response to climate change in the southeastern United States. *Diversity and Distributions* 25, 1388-1398.
56. Krause, Kevin, Huicheng Chien, **Darren L. Ficklin**, Damon M. Hall, Gunter A. Schuster, Todd M. Swannack, Chris A. Taylor, Jason H. Knouft. 2019 Streamflow regimes and geologic conditions are more important than water temperature when projecting future crayfish distributions. *Climatic Change* 154(1-2), 107-123.

55. Strange, Brandon M., Justin T. Maxwell, Scott M. Robeson, Grant L. Harley, Matthew D. Therrell, **Darren L. Ficklin**. 2019. Comparing Three Approaches to Reconstructing Streamflow Using Tree Rings in the Wabash River Basin in the Midwestern, US. *Journal of Hydrology* 573, 829-840.
54. VanCompernelle, Michelle\*, Jason H. Knouft, **Darren L. Ficklin**. 2019. Hydrologic and thermal conditions occupied by a species within a single watershed predict the geographic extent of occurrence of freshwater fishes. *Ecohydrology* 12(3), e2071.
53. Neupane, Ram P. \*, **Darren L. Ficklin**, Jason H. Knouft, Nima Ehsani, Raj Cibir. 2019. Hydrologic responses to projected climate change in ecologically diverse watersheds of the Gulf Coast, USA. *International Journal of Climatology* 39(4), 2227-2243.
52. Giles, Nicholas, Meghna Babbar-Sebens, Raghavan Srinivasan, **Darren L. Ficklin**, Bradley L. Barnhart. 2019. Optimization of Linear Stream Temperature Model Parameters in the Soil and Water Assessment Tool for the Continental United States. *Ecological Engineering* 127, 125-134.
51. Kannenberg, Steven A., Justin T. Maxwell, Neil Pederson, Loïc D'Orangeville, **Darren L. Ficklin**, Richard P. Phillips. 2019. Drought legacies are dependent on water table depth, wood anatomy, and drought timing across the eastern U.S. *Ecology Letters* 22, 119-127.
50. Barnhart, Bradley L., Amy Piscopo, Brenda Rashleigh, Chas Jones, **Darren L. Ficklin**, Heather Golden, James Pauer, Jonathan Halama, Joseph Kasprzyk, Keith Sawicz, Michelle Simon, Nahal Hoghooghi, Paul Pettus, Paul Mayer, Robert McKane. 2018. Embedding co-production and addressing uncertainty in watershed modeling decision-support tools: Success and challenges. *Environmental Modeling and Software* 109, 368-379.
49. Mustafa, Mamoon, Bradley L. Barnhart, **Darren L. Ficklin**, Meghna Babbar-Sebens. 2018. Modeling landscape change effects on stream temperature using the Soil and Water Assessment Tool. *Water* 10(9), 1143.
48. Fu, Zheng, Tobias Gerken, Gabriel Bromley, Alessandro Araújo, Damien Bonal, Benoît Burban, **Darren L. Ficklin**, Jose D. Fuentes, Michael Goulden, Takashi Hirano, Yoshiko Kosugi, Michael Liddell, Giacomo Nicolini, Shuli Niu, Olivier Roupsard, Paolo Stefani, Chunrong Mi, Zaddy Tofte, Jingfeng Xiao, Riccardo Valentini, Sebastian Wolf, Paul C. Stoy. 2018. The surface-atmosphere exchange of carbon dioxide in tropical rainforests: Sensitivity to environmental drivers and flux measurement methodology. *Agricultural and Forest Meteorology* 263, 292-307.
47. **Ficklin, Darren L.**, John T. Abatzoglou, Scott M. Robeson, Sarah E. Null, Jason H. Knouft. 2018. Natural and managed watersheds show similar responses to recent climate change. *Proceedings of the National Academy of Sciences* 115(34), 8553-8557.
46. Du, Xinzhong, Narayan Kumar Shrestha, **Darren L. Ficklin**, Junye Wang. 2018. Incorporation of the equilibrium temperature approach in a Soil and Water Assessment Tool hydroclimatological stream temperature model. *Hydrology and Earth System Sciences* 22, 2343-2357.
45. Jepsen, Steven M., Thomas C. Harmon, **Darren L. Ficklin**, Noah P. Molotch, Bin Guan. 2018. Evapotranspiration sensitivity to air temperature across a snow-influenced watershed: Space-for-time substitution versus integrated watershed modelling. *Journal of Hydrology* 556, 645-659.
44. Maxwell, Justin T., Paul A. Knapp, Jason T. Ortegren, **Darren L. Ficklin**, and Peter T. Soulé. 2017 Changes in the Mechanisms Causing Rapid Drought Cessation in the Southeastern United States of America. *Geophysical Research Letters* 44(24), 12476-12483.
43. Abatzoglou, John T., **Darren L. Ficklin**. 2017. Climatic and physiographic controls on the spatial variability in surface water balance over the contiguous United States using the Budyko framework. *Water Resources Research* 53(9), 7630-7643.
42. Kim, Yuri, Lawrence Band, **Darren L. Ficklin**. 2017. Projected hydrological changes in the North Carolina Piedmont watershed using bias corrected North American Regional

- Climate Change Assessment Program (NARCCAP). *Journal of Hydrology: Regional Studies* 12, 273-288.
41. Knouft, Jason, **Darren L. Ficklin**. 2017. The potential impacts of climate change on biodiversity in flowing freshwater systems. *Annual Review of Ecology, Evolution, and Systematics* 48, 111-133.
  40. Smith, Seven M., Krister Andersson, Kelsey Cody, Michael Cox, **Darren L. Ficklin**. 2017. Responding to a groundwater crisis: the effects of self-imposed economic incentives. *Journal of Association for Environmental and Resource Economists* 4, 985-1023.
  39. Burke, William\*, **Darren L. Ficklin**. 2017. Future projections of streamflow magnitude and timing differ across coastal watersheds of the western United States. *International Journal of Climatology* 37(13), 4493-4508.
  38. Barnhart, Bradley L., Keith A. Sawicz, **Darren L. Ficklin**, Gerald W. Whittaker, P. Mayer. 2017. MOESHA: A genetic algorithm for automatic calibration and estimation of parameter uncertainty and sensitivity of hydrologic models. *Transactions of the American Society of Agricultural and Biological Engineers* 60(4), 1259-1269.
  37. **Ficklin, Darren L.**, K. Novick. 2017. Historic and projected changes in vapor pressure deficit suggest a continental-scale drying of the United States atmosphere. *Journal of Geophysical Research – Atmospheres* 122(4), 2061-2079.
  36. Novick, K., **Darren L. Ficklin**, C. Williams, G. Bohrer, A.C. Oishi, L. Wang, P. Blanken, M. Litvak, A. Noormets, P. Stoy, B. Sulman, R. Phillips. 2016. The increasing importance of atmospheric demand for ecosystem water and carbon fluxes. *Nature Climate Change* 6, 1023-1027, DOI:10.1038/nclimate3114.
  35. Ayers, Jessica\*, **Darren L. Ficklin**, Iris T. Stewart, Meredith Strunk\*. 2016. Comparison of CMIP3 and CMIP5 projected hydrologic conditions over the Upper Colorado River Basin. *International Journal of Climatology* 36, 3807-3818.
  34. **Ficklin, Darren L.**, Scott M. Robeson, and Jason H. Knouft. 2016. Impacts of recent climate change on trends in baseflow and stormflow in United States watersheds. *Geophysical Research Letters* 43(10), 5079-5088.
  33. Chen, Jinsong, Susan S. Hubbard, Kenneth H. Williams, **Darren L. Ficklin**. 2016. Estimating groundwater dynamics at a Colorado floodplain site using historical hydrologic data and climate information. *Water Resources Research* 52(3), 1881-1898.
  32. Shawn Naylor, Sally L. Letsinger, **Darren L. Ficklin**, Kevin Ellett, and Greg A. Olyphant. 2016. A hydrogeological approach to quantifying groundwater recharge in various glacial settings of the mid-continental U.S.A. *Hydrological Processes* 30(10), 1594-1608.
  31. **Ficklin, Darren L.**, Sally L. Letsinger, Iris T. Stewart, Edwin P. Maurer. 2016. Assessing differences in snowmelt-dependent hydrologic projections using CMIP3 and CMIP5 climate forcing data for the western United States. *Hydrology Research* 47(2), 483-500.
  30. Maurer, Edwin P., **Darren L. Ficklin**, Weile Wang. 2016. The impact of spatial scale in bias correction of climate model output for hydrologic impact studies. *Hydrology and Earth System Sciences* 20, 685-696.
  29. **Ficklin, Darren, L.**, John T. Abatzoglou, Scott M. Robeson, Anna Dufficy\*. 2016. The influence of climate model biases on aridity and drought projections. *Journal of Climate* 29, 1269–1285.
  28. Maxwell, Justin T., **Darren L. Ficklin**, Grant Harley, Gregory Jones. 2016. Projecting future winegrape yields using a combination of *Vitis vinifera* growth rings and soil moisture simulations, northern California, U.S.A. *Australian Journal of Grape and Wine Research* 22, 73–80.
  27. **Ficklin, Darren L.**, Sally L. Letsinger, Hamed Gholizadeh, Justin T. Maxwell. 2015. Incorporation of the Penman-Monteith potential evapotranspiration method into a Palmer Drought Severity Index tool. *Computers & Geosciences* 85, 136-141.

26. Wilmott, Cort J., Scott M. Robeson, Kenji Matsuura, **Darren L. Ficklin**. 2015. Assessment of three dimensionless measures of model performance. *Environmental Modeling and Software* 73, 167-174.
25. Stewart, Iris T., **Darren L. Ficklin**, Carlos A. Carrillo, Russell McIntosh. 2015. 21<sup>st</sup> century increases in the likelihood of extreme hydrologic conditions for the mountainous basins of the Southwestern U.S. *Journal of Hydrology* 529, 340-353.
24. Mou Leong, Tan, **Darren L. Ficklin**, Barnali Dixon, Ab Latif Ibrahim, Zulkifli Yusop, Vincent Chaplot. 2015. The effects of Digital Elevation Model resolution, source, and resampling technique on SWAT-simulated streamflow. *Applied Geography* 63, 357-368.
23. **Ficklin, Darren L.**, Justin T. Maxwell, Sally L. Letsinger, Hamed Gholizadeh. 2015. A climatic deconstruction of recent drought trends in the United States. *Environmental Research Letters* 10, 044009
22. **Ficklin, Darren L.**, Bradley L. Barnhart, Jason Knouft, Iris T. Stewart, Edwin P. Maurer, Sally L. Letsinger, Gerald W. Whittaker. 2014. Climate change and stream temperature projections in the Columbia River basin: habitat implications of spatial variation in hydrologic drivers. *Hydrology and Earth System Sciences* 18, 4897-4912
21. **Ficklin, Darren L.** and Bradley L. Barnhart. 2014. SWAT hydrologic model parameter uncertainty and its implications for hydroclimatic projections in snowmelt-dependent watersheds. *Journal of Hydrology* 519, 2081-2090.
20. Mou Leong, Tan, **Darren L. Ficklin**, Ab Latif Ibrahim, Zulkifli Yushop. 2014. Impacts and uncertainties of climate change on streamflow of the Johor River Basin, Malaysia using a CMIP5 GCM ensemble. *Journal of Water and Climate Change* 5(4), 676-695.
19. **Ficklin, Darren L.**, Yuzhou Luo, Minghua Zhang. 2014. The use of soil taxonomy as a soil type identifier on the Shasta Lake watershed using SWAT. *Transactions of the American Society of Agricultural and Biological Engineers* 57(3), 717-728.
18. Barnhart, Bradley L., Gerald W. Whittaker, **Darren L. Ficklin**. 2014. Improved stream temperature simulations within SWAT using NSGA-II for automatic, multi-site calibration. *Transactions of the American Society of Agricultural and Biological Engineers* 57(2), 517-530.
17. **Ficklin, Darren L.**, Iris T. Stewart, Edwin P. Maurer. 2013. Climate change impacts on streamflow and subbasin-scale hydrology in the Colorado River Basin. *PLOS ONE* 8(8), e71297. DOI: 10.1371/journal.pone.0071297
16. **Ficklin, Darren L.**, Yuzhou Luo, Minghua Zhang. 2013. Climate change sensitivity assessment of streamflow and agricultural pollutant transport in California's Central Valley using Latin hypercube sampling. *Hydrological Processes* 27(18), 2666-2675. DOI: 10.1002/hyp.9386
15. **Ficklin, Darren L.**, Iris T. Stewart, Edwin P. Maurer. 2013. Effects of climate change on stream temperature, dissolved oxygen, and sediment concentration in the Sierra Nevada mountain range in California. *Water Resources Research* 49(5), 2765-2782. DOI: 10.1002/wrcr.20248
14. Luo, Yuzhou, **Darren L. Ficklin**, Xiaomang Liu, Minghua Zhang. 2013. Assessment of climate change impacts on hydrology and water quality with a watershed modeling approach. *Science of the Total Environment* 450-451, 72-82.
13. **Ficklin, Darren L.**, Minghua Zhang. 2013. A comparison of the Curve Number and Green-Ampt Models in an Agricultural Watershed. *Transactions of the American Society of Agricultural and Biological Engineers* 56 (1), 61-69.
12. **Ficklin, Darren L.**, Yuzhou Luo, Minghua Zhang. 2013. Watershed modeling of hydrology and water quality in the Sacramento River Watershed, California. *Hydrological Processes* 27, 236-250. DOI: 10.1002/hyp.9222
11. **Ficklin, Darren L.**, Iris T. Stewart, Edwin P. Maurer. 2013. Effects of projected climate change on the hydrology in the Mono Lake Basin, California. *Climatic Change* 116, 111-131. DOI: 10.1007/s10584-012-0566-6

10. Luo, Yuzhou, **Darren L. Ficklin**, Minghua Zhang. 2012. Approaches of soil data aggregation for hydrologic simulations. *Journal of Hydrology* 464-465, 467-476.
9. **Ficklin, Darren L.**, Iris T. Stewart, Edwin P. Maurer. 2012. Projections of 21<sup>st</sup> century Sierra Nevada local hydrology using an ensemble of General Circulation Models. *Journal of the American Water Resources Association* 48, 1104-1125. DOI: 10.1111/j.1752-1688.2012.00675.x
8. Wang, Zhonggen, **Darren L. Ficklin**, Yongyong Zhang, Minghua Zhang. 2012. Impact of climate change on the hydrologic cycle in the arid Shiyang River Basin. *Hydrological Processes* 26(18), 2733-2744. DOI: 10.1002/hyp.8378
7. **Ficklin, Darren L.**, Yuzhou Luo, Iris T. Stewart, Edwin P. Maurer. 2012. Development and application of a hydroclimatological stream temperature model within the Soil and Water Assessment Tool. *Water Resources Research* 48, W01511.
6. Gatzke, Sarah E., Dylan E. Beaudette, **Darren L. Ficklin**, Yuzhou Luo, Anthony T. O'Geen, Minghua Zhang. 2011. Aggregation strategies for SSURGO data: effects on SWAT soil inputs and hydrologic outputs. *Soil Science Society of America Journal* 75, 1908-1921.
5. **Ficklin, Darren L.**, Eike Luedeling, Minghua Zhang. 2010. Sensitivity of groundwater recharge to changes in climate, CO<sub>2</sub> concentrations and canopy structure. *Agricultural Water Management* 97, 1039-1050.
4. **Ficklin, Darren L.**, Yuzhou Luo, Eike Luedeling, Sarah E. Gatzke, Minghua Zhang. 2010. Sensitivity of agricultural runoff to rising levels of CO<sub>2</sub> and climate change in the San Joaquin Valley watershed of California. *Environmental Pollution* 158, 223-234.
3. Liu, Xingmei, Weiwen Zhang, Minghua Zhang, **Darren L. Ficklin**, Fan Wang. 2009. Spatio-temporal variations of soil nutrients influenced by an altered land tenure system in China. *Geoderma* 152, 23-34.
2. **Ficklin, Darren L.**, Yuzhou Luo, Eike Luedeling, Minghua Zhang. 2009. Climate change sensitivity assessment of a highly agricultural watershed using SWAT. *Journal of Hydrology* 347, 16-29.
1. Luo, Yuzhou, Xuyang Zhang, Xingmei Liu, **Darren L. Ficklin**, Minghua Zhang. 2008. Dynamic modeling of organophosphate pesticide loads in surface water in the northern San Joaquin Valley watershed of California. *Environmental Pollution* 156, 1171-1181.

Submitted/In review

- Ficklin, Darren L.**, David M. Hannah, Niko Wanders, Stephen J. Dugdale, Judy England, Julian Klaus, Christa Kelleher, Kieran Khamis, Matthew Charlton. River temperatures in a changing, human-dominated world. (*In review at Nature Water*).
- Maxwell, Justin T., Clay Tucker, Grant L. Harley, Toudora Galuska, **Darren L. Ficklin**, Joshua C. Bregy, Karen J. Heeter, Tsun Fung Au, Benjamin Lockwood, Daniel J. King, R. Stockton Maxwell, Laura Smith, Emily A. Elliott, Matthew D. Therrell. 1,100-Year Reconstruction of Baseflow for the Santee River, South Carolina, USA Reveals Connection to the North Atlantic Subtropical High. (*In review at Geophysical Research Letters*).
- Myers, Daniel T.\*, **Darren L. Ficklin**, Scott M. Robeson, 2022. Hydrologic implications of projected changes in rain-on-snow melt for Great Lakes Basin watersheds. (*In review at Hydrology and Earth System Sciences*).
- Chang, Qing, **Darren L. Ficklin**, Wenzhe Jiao, Sander O. Denham, Jeffrey D. Wood, Nathaniel A. Brunsell, Roser Matamala, David R. Cook, Lixin Wang, Kimberly A. Novick, 2022. The importance of phenology and eco-physiological function in detecting plant drought stress. (*In review at Earth's Future*)
- Ficklin, Darren L.**, Christa Kelleher, Ellen Bergan\*, Daniel T. Myers\*, Seth Adelsperger\*, Erin Hardman\*, 2022. Influence of the 2021 Brood X cicada emergence on soil water infiltration rates in the midwestern United States. (*In review at Hydrological Processes*)

### Theses

**Ficklin, Darren.** Modeling the impacts of climate change on hydrology and agricultural pollutant runoff in California's Central Valley. Ph.D. Dissertation, University of California at Davis, 2010.

**Ficklin, Darren.** Hydrogeologic setting, water budget, and analysis of groundwater exchange at Crystal Lake, a glacial lake in McHenry County, Illinois. M.S. Thesis, Southern Illinois University at Carbondale, 2007.

## **FUNDED RESEARCH AND TEACHING ACTIVITIES**

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### *Research – Funded*

- **United States Geological Survey: Future of Aquatic Flows (2022-2024)** -- Exploring changes in rain-on-snow events and their influence on future streamflows, stream temperatures, and management priorities in the Great Lakes Basin. Role: PI with Co-PIs Jason Knouft (Saint Louis University) and Karen Murchie (John G. Shedd Aquarium); Total amount: \$316,185 (\$302,435 to IU).
- **National Science Foundation: Hydrologic Sciences (2021-2022)** -- RAPID: Influence of the Brood X Cicada Emergence on Soil Water Infiltration. Role: PI; Total amount \$19,331.
- **National Science Foundation: Advances in Biological Informatics (2017-2021)** -- Collaborative Research: ABI Innovation: Improving high performance super computer aquatic ecosystem models with the integration of real-time citizen science data – Role: PI with Co-PIs Christopher Lowry (University at Buffalo), Jason Knouft (Saint Louis University) and Damon Hall (Saint Louis University); Total amount: \$510,282; IU portion: \$384,948.
- **National Science Foundation: Advances in Biological Informatics (2016-2022)** -- Collaborative Research: ABI Development: HydroClim: Empowering aquatic research in North America with data from high-resolution streamflow and water temperature GIS modeling – Role: Co-PI with PI Jason Knouft and Co-PIs Henry Bart (Tulane University) and Nelson Rios (Tulane University); Total amount: \$1,667,976; IU portion: \$623,272.
- **U.S. Army Corps of Engineers: Great Rivers Cooperative Ecosystems Studies Unit (2015-2017)** -- Integrating hydrodynamic, GIS, and ecological models to develop multi-scale tools that can predict the dynamics of the spatial distributions of threatened and endangered species throughout the waterways of the United States – Role: PI with Jason Knouft (Saint Louis University) and Damon Hall (Saint Louis University); Total amount: \$80,163; IU portion: \$80,163.
- **Kearney Mission on Spatial and Temporal Scaling** -- University of California, Davis -- Development of soil property aggregation techniques for spatially distributed watershed models. University of California, Davis – Role: Co-PI -- \$88,000

### *Teaching – Funded*

- **Indiana University Sustainability Course Development Fellowship** -- Water security and sustainability: A socio-ecological perspective – with Dr. Majed Akhter -- \$6,000

### *Research – Submitted*

- **National Science Foundation: Hydrologic Sciences** – Collaborative Research: Exploring the Influence of Agricultural Tile Drainage on Streamflow and Water Temperature in the Midwestern US using a Stakeholder-driven Approach. Role: PI with PI Damon Hall (University of Missouri); Total amount: \$574,505 (\$300,236 to IU).

## AWARDS

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- Indiana University Trustees Teaching Award (2022). \$2,500.
- University of Birmingham (UK) Institute of Advanced Studies Vanguard Fellowship (May-June 2022).
- Outstanding Junior Faculty Award (2018), Indiana University Bloomington. \$15,000.
- Campus Catalyst Sustainability Award for Excellence in Research (2016), Indiana University Office of Sustainability

## PRESENTATIONS

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### *Invited presentations (\* indicates student or postdoc)*

- Ficklin, Darren L.,** Ellen V. Bergan, Erin M. Hardman, Seth R. Adelsperger, Daniel T. Myers. 2022. Influence of the 2021 Brood X cicada emergence on soil water infiltration rates in the midwestern United States. Department of Earth Sciences, Indiana University-Purdue University Indianapolis, Indianapolis, IN, USA
- Ficklin, Darren L.,** Engaging local communities to advance hydrologic research. 2022. The Institute of Advanced Studies. University of Birmingham. Birmingham, UK.
- Ficklin, Darren L.,** Ellen V. Bergan, Erin M. Hardman, Seth R. Adelsperger, Daniel T. Myers. 2022. Influence of the 2021 Brood X cicada emergence on soil water infiltration rates in the midwestern United States. Indiana University O'Neill School of Public and Environmental Affairs Environmental Science Colloquium. Bloomington, Indiana.
- Ficklin, Darren L.,** Pedro Avellaneda, Christopher Lowry, Jason Knouft, Damon Hall. 2020. Using local communities to drive hydrologic forecasting. Department of Environmental Sciences Winter Seminar Series. University of California-Riverside.
- Ficklin, Darren L.,** Pedro Avellaneda\* Christopher Lowry, Jason Knouft, Damon Hall. 2020. Hydrology of the people, by the people, for the people: bringing together citizen science and hydrologic forecasting. Hydrologic Sciences and Water Resources Engineering Seminar Series. University of Colorado-Boulder.
- Ficklin, Darren L.,** Pedro Avellaneda\*, Christopher Lowry, Jason Knouft, Damon Hall. 2019. Improving hydrological models with the assimilation of citizen science data. University at Buffalo Department of Geology Fall 2019 Pegrum Lecture Series.
- Ficklin, Darren L.** 2018. Recent trends in streamflow throughout the United States. University of Cincinnati Department of Chemical and Environmental Engineering Spring Seminar.
- Ficklin, Darren L.,** John T. Abatzoglou, Jason Knouft, Scott M. Robeson. 2017. Recent trends in ecologically-relevant streamflows in North America. American Geophysical Union Fall Meeting. New Orleans, Louisiana.
- Ficklin, Darren L.** 2017. The past, present, and future of western United States hydroclimate. Keynote Speaker for the 2017 Crossroads Geology Conference at Indiana University. Bloomington, Indiana.
- Ficklin, Darren L.,** John T. Abatzoglou, Scott M. Robeson, Anna Dufficy\*. 2015. How do biases in General Circulation Models affect projections of aridity and drought? American Geophysical Union Fall Meeting. San Francisco, California.
- Ficklin, Darren L.,** Justin T. Maxwell, Sally L. Letsinger, Hamed Gholizadeh. 2015. A climatic deconstruction of recent drought trends in the United States. Indiana University School of Public and Environmental Affairs Environmental Science Colloquium. Bloomington, Indiana.
- Ficklin, Darren L.** 2014. General Circulation Models: downscaling and incorporation into watershed models. American Society of Agronomy, Crop Science Society of America, and the Soil Science Society of America Joint Annual Meeting. Long Beach, California.



- Ficklin, Darren L.** 2014. Implications of a changing climate on water resources in the western United States. Clean Water Matters: Challenges and Research Perspectives Workshop. Beijing, China.
- Ficklin, Darren L.,** Iris T. Stewart, Edwin P. Maurer. 2012. Effects of climate change on hydrology and stream temperature in the Merced and Tuolumne River watersheds. Yosemite Hydroclimate Meeting. Yosemite, California.
- Ficklin, Darren L.,** Iris T. Stewart, Edwin P. Maurer. 2011. Effects of projected climate change on the hydrology in the Mono Lake Basin, California. UC Davis Hydrologic Sciences Seminar Series. Davis, CA

*Other presentations (\* indicates student or postdoc)*

- Myers, Daniel T., David Jones, **Darren L. Ficklin**, John Paul Schmit, 2022. How do Water Quality Models Respond to Growing vs. Non-growing Season Landuse Inputs? An Exploration with Google Earth Engine and Dynamic World. American Geophysical Union Fall Meeting. Chicago, Illinois.
- Ficklin, Darren L.,** David M. Hannah, Niko Wanders, Stephen J. Dugdale, Judy England, Julian Klaus, Christa Kelleher, 2022. The importance of understanding river temperatures in a human-dominated world. American Geophysical Union Fall Meeting. Chicago, Illinois.
- Adelsperger, Seth R.\* and **Darren L Ficklin**, 2022. Draining the Upper Midwest: Changes in Water Yield due to Agricultural Tiling. American Geophysical Union Fall Meeting. Chicago, Illinois.
- Adelsperger, Seth R.\*, **Darren L Ficklin**, Scott M Robeson, and Sally L Letsinger, 2022. Temporal Variability of Water Yield in Watersheds Overlying the Ogallala Aquifer due to Precipitation, Potential Evapotranspiration, and Irrigation. American Geophysical Union Frontiers in Hydrology Meeting. San Juan, Puerto Rico.
- Khodaei Mahsa, Taehee Hwang, **Darren L Ficklin**, and Jonathan M Duncan, 2022. With warming, spring streamflow peaks are more coupled with vegetation green-up than snowmelt in the northeastern United States. American Geophysical Union Frontiers in Hydrology Meeting. San Juan, Puerto Rico.
- Novick, Kimberly, Sander Denham, Qing Chang, Mitch Korolev, Mallory Barnes, **Darren L. Ficklin**, 2022. Phenology-driven variation in evapotranspiration: implications for early drought monitoring and detection Ecological Society of American Annual Meeting. Montréal, Québec, Canada
- Novick, Kimberly A., **Darren L. Ficklin**, Dennis Baldocchi, Kenneth J. Davis Teamrat Ghezzehei, Alexandra G. Konings, Natasha MacBean, Nina Raoult, Russell L. Scott, Yuning Shi, Benjamin N. Sulman, Jeffrey D. Wood, 2022. Confronting the Water Potential Information Gap. European Geophysical Union Fall Meeting. Vienna, Austria.
- Wang, Xiaojun, Jason Knouft, **Darren L. Ficklin**, Nelson Rios, Henry Bart, 2021. HydroClim Data Portal: Cyberinfrastructure for providing high-resolution GIS modeled streamflow and water temperature data to researchers. Virtual conference of Biodiversity Information Standards.
- Novick, Kimberly A., **Darren L. Ficklin**, Dennis Baldocchi, Kenneth J. Davis Teamrat Ghezzehei, Alexandra G. Konings, Natasha MacBean, Nina Raoult, Russell L. Scott, Yuning Shi, Benjamin N. Sulman, Jeffrey D. Wood, 2021. Confronting the Water Potential Information Gap. American Geophysical Union Fall Meeting. New Orleans, Louisiana.
- Chang, Qing, Kimberly A. Novick, **Darren L. Ficklin**, Wenzhe Jiao, 2021. A phenology-based improvement for early agricultural drought detection. American Geophysical Union Fall Meeting. New Orleans, Louisiana.
- Bergan, Ellen V.\*, Erin M. Hardman\*, Seth R. Adelsperger\*, Daniel T. Myers\*, **Darren L. Ficklin**, 2021. Influence of the Brood X cicada emergence on soil water infiltration rates. American Geophysical Union Fall Meeting. New Orleans, Louisiana.

- Hwang, Taehee, Mahsa Khodae, **Darren L. Ficklin**, Jonathan M. Duncan, 2021. With warming, spring streamflow peaks are more coupled with vegetation green-up than snowmelt in the northeastern United States. American Geophysical Union Fall Meeting. New Orleans, Louisiana.
- Hwang, Taehee, Mahsa Khodae, **Darren L. Ficklin**, 2021. Seasonal flow patterns are getting more dependent on vegetation phenology than snowpack dynamics in New England. American Geophysical Union Fall Meeting. New Orleans, Louisiana.
- Ficklin, Darren L.**, Sarah E. Null, John T. Abatzoglou, Kimberly A. Novick, Daniel T. Myers\*, 2021. Hydrological intensification is poised to increase uncertainty in the management of water resources. American Geophysical Union Fall Meeting. New Orleans, Louisiana.
- Maxwell, Justin T., Toudora Galuska, Grant L. Harley, **Darren L. Ficklin**, Joshua C. Bregy, Tsun Fung Au, Benjamin Lockwood, 2021. 1,100-year reconstruction of baseflow, indicates that high baseflow extremes are decreasing for the Santee River, South Carolina, USA. American Geophysical Union Fall Meeting. New Orleans, Louisiana.
- Beverly, Daniel P., Elizabeth P. Huenupi, Adrien Gandolfo, Clara J. Lietzke, **Darren L. Ficklin**, Erin M. Anderson, Jonathon D. Raff, Kimberly A. Novick, Richard P. Phillips, 2021. The Forest, The Cicadas, and The Holey Fluxes: periodical cicada impacts on soil respiration depends on tree mycorrhizal type. American Geophysical Union Fall Meeting. New Orleans, Louisiana.
- Myers, Daniel T.\*, **Darren L. Ficklin**, Scott M. Robeson, 2021. Climate change influences rain-on-snow melt in the Great Lakes Basin, USA. American Geophysical Union Fall Meeting. New Orleans, Louisiana.
- Myers, Daniel T.\*, **Darren L. Ficklin**, Scott M. Robeson, Ram P. Neupane\*, Alejandra Botero-Acosta, Pedro M. Avellaneda\*, 2021. Choosing an arbitrary calibration period for hydrologic models: How much does it influence water balance simulations? CUAHSI biennial meeting. (Virtual)
- Chang, Qing, Kimberly Novick, **Darren L. Ficklin**. 2021. Can popular drought indices capture drought effects on plant functions? 101st American Meteorological Society Annual Meeting. (Virtual)
- Ficklin, Darren L.**, Kimberly Novick. 2020. Future changes in vapor pressure deficit “stress waves”. American Geophysical Union Fall Meeting. (Virtual)
- Wu, Chin-Lung, A. Botero-Acosta, Jason H. Knouft, **Darren L. Ficklin**. 2020. Assessing the potential impacts of climate change on streamflows and water temperatures in a northern Canadian watershed. American Geophysical Union Fall Meeting. (Virtual)
- Novick, Kimberly, Kenneth Davis, **Darren L. Ficklin**, Teamrat Ghezzehei, Alexandra Konings, Natasha MacBean, Shawn Naylor, Russell Scott, Yuning Shi, Benjamin Sulman. 2020. Plant hydraulics: A theory-rich but data-poor field. American Geophysical Union Fall Meeting. (Virtual)
- Myers, Daniel\*, **Darren L. Ficklin**, Scott M. Robeson. 2020. Rain-on-snow events can lead to an intensification of late summer hydrological drought in Great Lakes watersheds. American Geophysical Union Fall Meeting. (Virtual)
- Knouft, Jason H., Alejandra Botero-Acosta, **Darren L. Ficklin**. 2020. Applying the concept of ‘climate velocity’ to understand projected responses of riverine species to changes in climate. American Fisheries Society Annual Meeting. Columbus, Ohio.
- Knouft, Jason H., Alejandra Botero-Acosta, **Darren L. Ficklin**, Nima Ehsani. 2019. Quantification of dispersal distances needed by freshwater species to cope with projected changes in water temperature over the coming century. American Geophysical Union Fall Meeting. San Francisco, California.

- Engh\*, Meghan K., **Darren L. Ficklin**, Scott M. Robeson. 2019. A spatiotemporal exploration of stream temperature surge occurrence, magnitude, and duration in the United States between 2008-2018. American Geophysical Union Fall Meeting. San Francisco, California.
- Ficklin, Darren L.**, Pedro M. Avellaneda\*, Christopher Lowry, Jason H. Knouft, Damon Hall. 2019. Using citizen science observations for hydrologic, water temperature, and aquatic species habitat forecasting. American Geophysical Union Fall Meeting. San Francisco, California.
- Avellaneda, Pedro M.\*, **Darren L. Ficklin**, Christopher Lowry, Jason H. Knouft, Damon Hall. 2019. Improving hydrological models with the assimilation of citizen science data. American Geophysical Union Fall Meeting. San Francisco, California.
- Myers, Daniel T.\*, **Darren L. Ficklin**, Scott M. Robeson, Ram P. Neupane, and Alejandra Botero-Acosta. 2019. Selection of calibration and validation time periods causes uncertainty in hydrologic model simulations. American Geophysical Union Fall Meeting. San Francisco, California.
- Botero-Acosta, A., Jason H. Knouft, **Darren L. Ficklin**, Nima Ehsani. 2019. Stream temperature and streamflow variability under future climate conditions on the Atlantic Coast of the United States. American Geophysical Union Fall Meeting. San Francisco, California.
- Lowry, Christopher, Pedro M. Avellaneda\*, **Darren L. Ficklin**, Damon Hall, Jason Knouft, Robert Pastel, Benjamin Ruddell, Eck Doerry, Mikhail Chester, Margaret Garcia, Giuseppe Mascaro, Thomas Meixner. 2019. Using Citizen Science as a Core Tool for Water Resource Management and Forecasting: Closing the Professional and Citizen Science Gap. Geological Society of America Annual Meeting. Phoenix, Arizona.
- Avellaneda, Pedro\*, **Darren L. Ficklin**, Christopher Lowry, Jason Knouft, Damon Hall. 2019. A citizen science approach to streamflow and temperature forecasting. CUAHSI Conference on Hydroinformatics. Brigham Young University, Provo, Utah.
- Darren L. Ficklin**, Pedro M. Avellaneda\*, Christopher Lowry, Jason Knouft, Damon Hall. 2019. Streamflow and stream temperature forecasting based on real-time citizen science data. Society of Freshwater Science Annual Meeting. Salt Lake City, Utah.
- Knouft, Jason H., Nima Ehsani, **Darren L. Ficklin**. 2018. Environmental conditions influencing stream water temperature sensitivity to changes in air temperature vary seasonally and spatially across the United States. American Geophysical Union Fall Meeting. Washington, D.C.
- Ficklin, Darren L.**, John T. Abatzoglou, Scott M. Robeson, Sarah E. Null, Jason H. Knouft. 2018. Changes in climate similarly influence recent streamflow trends in natural and human-modified watersheds. American Geophysical Union Fall Meeting. Washington, D.C.
- Neupane, Ram\*, **Darren L. Ficklin**, Jason H. Knouft. 2018. Projecting the impacts of climate change on streamflow and stream temperature in the Mississippi River Basin, USA. American Geophysical Union Fall Meeting. Washington, D.C.
- Avellaneda, Pedro M.\*, **Darren L. Ficklin**, Christopher Lowry, Jason Knouft, Damon Hall. 2018. Streamflow and stream temperature forecasting based on real-time citizen science data. American Geophysical Union Fall Meeting. Washington, D.C.
- Neupane, Ram\*, **Darren L. Ficklin**, Jason H. Knouft. 2018. Simulating the effects of climate change on streamflow and stream temperature in the Ohio River Basin, USA. 39<sup>th</sup> Annual Indiana Water Resources Association Symposium. Bloomington, Indiana.
- Knouft, Jason, **Darren L. Ficklin**, Henry L. Bart Jr., Nelson E. Rios. 2018. HydroClim: a continental-scale database of contemporary and future streamflow and stream temperature estimates for aquatic biodiversity studies. Society for Freshwater Science Annual Meeting. Detroit, Michigan.
- VanCompernelle, Michelle\*, **Darren L. Ficklin**, Jason H. Knouft. 2018. Multispecies freshwater conservation planning in response to climate change in the southeastern United States. Society for Freshwater Science Annual Meeting. Detroit, Michigan.

- Knouft, Jason H., **Darren L. Ficklin**, Damon Hall, Christopher S. Lowry. 2018. Improving high performance super computer aquatic ecosystem models with the integration of real-time citizen science data. US Regional Association of the International Association for Landscape Ecology Annual Meeting. Chicago, Illinois.
- Rios, Nelson E., Henry L. Bart Jr., **Darren L. Ficklin**, Jason H. Knouft. 2017. Enhancing FishNet2 through FishBase-OBIS collaboration. Indo-Pacific Fish Conference. Tahiti, French Polynesia.
- Ehsani, Nima, Jason Knouft, **Darren L. Ficklin**. 2017. Potential impacts of climate change on stream water temperatures across the United States. American Geophysical Union Fall Meeting. New Orleans, Louisiana.
- Zhang, Quan, Kimberly A. Novick, **Darren L. Ficklin**. 2017. Using FLUXNET datasets to investigate how hydrologic stress impacts ecosystem water use efficiency. American Geophysical Union Fall Meeting. New Orleans, Louisiana.
- Maxwell, Justin T., Paul A. Knapp, Jason T. Ortegren, **Darren L. Ficklin**, and Peter T. Soulé. 2017. Change in the mechanisms behind rapid drought cessation in the southeastern U.S. American Geophysical Union Fall Meeting. New Orleans, Louisiana.
- Knouft, Jason, **Darren L. Ficklin**, Henry L. Bart Jr., Nelson E. Rios. 2017. HydroClim: a continental-scale database of contemporary and future streamflow and stream temperature estimates for aquatic ecosystem studies. American Geophysical Union Fall Meeting. New Orleans, Louisiana.
- Neupane, Ram\*, **Darren L. Ficklin**, Jason H. Knouft. 2017. Hydrologic responses to projected climate change in ecologically-vulnerable watersheds of the Gulf Coast, USA. American Geophysical Union Fall Meeting. New Orleans, Louisiana.
- VanCompernelle, Michelle\*, **Darren L. Ficklin**, Jason H. Knouft. 2017. Using streamflow and stream temperature to assess the potential responses of freshwater fish to climate change. American Geophysical Union Fall Meeting. New Orleans, Louisiana.
- Ficklin, Darren L.**, and Jason Knouft. 2017. Development of a continental-scale database of streamflow and stream temperature for aquatic ecosystem studies. HydroEco 2017 meeting. Birmingham, United Kingdom.
- Tabassum, Anika\*, **Darren L. Ficklin**, Taehee Hwang, Scott M. Robeson. 2017. Assessment of the Impact of Land Use and Land Cover Changes on Streamflow: A Case Study in Bloomington, Indiana. Association of American Geographers Annual Conference. Boston, Massachusetts.
- VanCompernelle, Michelle\*, **Darren L. Ficklin**, Jason Knouft. 2017. Projecting potential responses of freshwater fish to climate change in the Mobile River Basin. American Fisheries Society Annual Meeting. Tampa, Florida.
- Kimberly A. Novick, **Darren L. Ficklin**, Paul C. Stoy, Christopher A. Williams, Gil Bohrer, Andrew C. Oishi, Shirley A. Papuga, Peter Blanken, Asko Noormets, Russell L. Scott, Lixin Wang, Daniel Tyler Roman, Koong Yi, Benjamin N. Sulman and Richard Phillips. 2016. Harnessing long-term flux records to better understand ecosystem response to drought. American Geophysical Union Fall Meeting. San Francisco, California.
- Ficklin, Darren L.**, and Kimberly Novick. 2016. Significant historical and projected increases in evaporative demand in the United States. American Geophysical Union Fall Meeting. San Francisco, California.
- Burke, William\* and **Darren L. Ficklin**. 2016. Spatial divergence of projected trends in streamflow magnitude and timing in Western United States coastal watersheds. American Geophysical Union Fall Meeting. San Francisco, California.
- Smith, Seven M., Krister Andersson, Kelsey Cody, Michael Cox, **Darren L. Ficklin**. 2016. The effects of self-imposed incentives on a groundwater commons. National Groundwater Association Summit. Denver, Colorado.

- Smith, Seven M., Krister Andersson, Kelsey Cody, Michael Cox, **Darren L. Ficklin**. 2016. The effects of self-imposed incentives on a groundwater Commons. National Groundwater Association Conference – Hydrology and Water Quality in the Southwest. Albuquerque, New Mexico
- Bostian, Moriah, Barnhart, Bradley L., Gerald W. Whittaker, **Darren L. Ficklin**. 2015. Expected Frontiers: Incorporating weather uncertainty into an integrated bi-level optimization. INFORMS Annual Meeting. Philadelphia, Pennsylvania.
- Darren L. Ficklin** and Bradley L. Barnhart. 2015. The implications of SWAT parameter equifinality on climate change projections. Soil and Water Assessment Tool Annual Conference. West Lafayette, Indiana.
- William Burke\* and **Darren L. Ficklin**. 2015. Assessing projected climate impacts on streamflow in small coastal basins of the Western US. Soil and Water Assessment Tool Annual Conference. West Lafayette, Indiana.
- Novick, Kimberly A., Gil Bohrer, Richard Phillips, Benjamin Sulman, Chris Williams, Andrew C. Oishi, **Darren L. Ficklin**. 2015. Vapor pressure deficit is as important as soil moisture in determining hydrologic limitations to evapotranspiration. American Geophysical Union Fall Meeting. San Francisco, California.
- Naylor, Shawn, Sally L. Letsinger, **Darren L. Ficklin**, Kevin M. Ellett, Greg A. Olyphant. 2015. A hydrogeological approach to quantifying groundwater recharge in various glacial settings of the mid-continental U.S.A. American Geophysical Union Fall Meeting. San Francisco, California.
- Burke, William\* and **Darren L. Ficklin**. 2015. Assessing the impact of projected climate changes on coastal watershed hydrology in western North America. Association of American Geographers Annual Meeting. Chicago, Illinois.
- Darren L. Ficklin**. 2015. The use of General Circulation Model output for projections of watershed hydrology. Association of American Geographers Annual Meeting. Chicago, Illinois.
- Roy, Samapriya, **Darren L. Ficklin**, Rinku Roy Chowdhury, James B. Heffernan, Meredith K. Steele, Peter M. Groffman. 2015. Urban watersheds and urbanizing hydrology: Assessment through dynamic modeling. Association of American Geographers Annual Meeting. Chicago, Illinois.
- Samapriya Roy, **Darren L. Ficklin**, Rinku Roy Chowdhury. 2014. Dynamic assessment of urban hydrologic components using SWAT. International Long Term Ecological Research All-Scientists Meeting of the Americas. Valdivia, Chile.
- Anthony, Melissa, M., **Darren L. Ficklin**, Iris T. Stewart, Jason H. Knouft. 2014. Assessing the impacts of climate change on the distribution of trout species in the Sierra Nevada region of California using output from a landscape scale hydrological model. American Geophysical Union Fall Meeting. San Francisco, California.
- Carrillo, Carlos, Iris T. Stewart, **Darren L. Ficklin**, Russell McIntosh. 2014. Anticipating changes in extreme streamflow events and stream temperature for the Sierra Nevada and Colorado River Basin. American Geophysical Union Fall Meeting. San Francisco, California.
- Ficklin, Darren L**, Sally L. Letsinger, Hamed Gholizadeh, Justin T. Maxwell. 2014. A tool to estimate the Palmer Drought Severity Index using Penman-Monteith potential evapotranspiration at any spatial scale. American Geophysical Union Fall Meeting. San Francisco, California.
- Stewart, Iris, T., **Darren L. Ficklin**, Edwin P. Maurer, Russell McIntosh, Carlos Carrillo. 2014. Projected changes in seasonal drought and flood conditions in the Sierra Nevada and Colorado River basins (USA). European Geophysical Union. Vienna, Austria.
- Ficklin, Darren L**, Sally L. Letsinger, Iris T. Stewart, Edwin P. Maurer. 2013. How do hydrologic projections change with the new CMIP5 models? American Geophysical Union Fall Meeting. San Francisco, California.

- Stewart, Iris, T., **Darren L. Ficklin**, Edwin P. Maurer, Russell McIntosh, Carlos Carrillo. 2013. Changing likelihoods of extremely low flows, high flows, and high stream temperatures in the Sierra Nevada (CA). PACLIM. Asilomar, California.
- Naylor, Shawn, Kevin M. Ellett, **Darren L. Ficklin**, Greg A. Olyphant. 2013. Modeling water flux at the base of the rooting zone for soils with varying glacial parent materials. American Geophysical Union Fall Meeting. San Francisco, California.
- LaRiviere, Jonathon, P. A. Christina Ravelo, Heather Ford, Max Aung, **Darren L. Ficklin**. 2013. A comparison of sea surface temperature patterns in the late Miocene, Pliocene and Pleistocene. 2<sup>nd</sup> Workshop on Pliocene Climate, Bristol, United Kingdom.
- Stewart, Iris, T., **Darren L. Ficklin**, Edwin P. Maurer. 2013. Impact of climatic changes on water resources in the North American Southwest. American Geophysical Union: Meeting of the Americas. Cancun, Mexico.
- Stewart, Iris, T., **Darren L. Ficklin**, Edwin P. Maurer. 2012. Declining water quality in Sierra Nevada mountain streams under projected climatic changes. MTNCLIM: Mountain Climate Research Conference. Estes Park, Colorado.
- LaRiviere, Jonathan P., A.C. Ravelo, M. Aung, **Darren L. Ficklin**, Heather L. Ford. 2012. Basin-wide sea surface temperature distributions of the Pleistocene, Pliocene, and late Miocene. American Geophysical Union Fall Meeting. San Francisco, California.
- Luo, Yuzhou, **Darren L. Ficklin**, Iris T. Stewart, Dan J. Issak, Charlie H. Luce. 2012. Stream temperature modeling and its integration with watershed hydrologic simulation. American Geophysical Union Fall Meeting. San Francisco, California.
- Ficklin, Darren L.**, Iris T. Stewart, Edwin P. Maurer. 2012. Projecting the impacts of climate change on stream temperature and dissolved oxygen in a snowmelt-dominated mountainous watershed. American Geophysical Union Fall Meeting. San Francisco, California.
- Stewart, Iris, T., **Darren L. Ficklin**, Edwin P. Maurer. 2012. How much water will be available in the upper Colorado River Basin under projected climatic changes? American Geophysical Union Fall Meeting. San Francisco, California.
- Stewart, Iris, T., **Darren L. Ficklin**, Yuzhou Luo, Iris T. Stewart, Edwin P. Maurer. 2011. Can a new model better capture the stream temperature changes resulting from climate warming? American Geophysical Union Fall Meeting. San Francisco, California.
- Ficklin, Darren L.**, Yuzhou Luo, Iris T. Stewart, Edwin P. Maurer. 2011. Development and application of a hydroclimatological stream temperature model within SWAT. International Soil and Water Assessment Tool Conference. Toledo, Spain.
- Ficklin, Darren L.**, Iris T. Stewart, Edwin P. Maurer. 2011. Changes in components of the hydrologic cycle under a warming climate in California. American Geophysical Union Fall Meeting. San Francisco, California.
- Stewart, Iris T., **Darren L. Ficklin**, Edwin P. Maurer. 2011. How will projected climate change impact stream temperature and water quality in the Sierra Nevada (CA)? European Geophysical Union General Assembly. Vienna, Austria.
- Luo, Yuzhou, **Darren L. Ficklin**, Eike Luedeling, Sarah E. Gatzke, Minghua Zhang. 2011. Evaluating agrochemical aquatic exposure modeling in relation to risk evaluator needs. American Chemical Society National Meeting, Denver, Colorado.
- Ficklin, Darren L.**, Iris T. Stewart, Edwin P. Maurer. 2011. Effects of projected climate change on the hydrology in the Mono Lake Basin, California. California Water and Environmental Modeling Forum Annual Meeting. Asilomar, California.
- Ficklin, Darren L.**, Iris T. Stewart, Edwin P. Maurer. 2010. How will a warmer climate affect water quality in the Sierra Nevada, California? American Geophysical Union Fall Meeting. San Francisco, California.
- Williams, W. Martin, Gerco Hoogeweg, Rich Breuer, Debra Denton, Minghua Zhang, Scott Hecht, **Darren L. Ficklin**, J. Mark Cheplick, Surj Dasgupta. 2009. Spatial and temporal

- quantification of pesticide loadings to the Sacramento River, San Joaquin River, and Bay-Delta to guide risk assessment for sensitive species. SETAC North America Annual Meeting. Tampa, Florida.
- Ficklin, Darren L.**, Yuzhou Luo, Eike Luedeling, Sarah E. Gatzke, Minghua Zhang. 2008. Sensitivity of agricultural runoff to rising levels of CO<sub>2</sub> and climate change in the San Joaquin Valley watershed of California. American Geophysical Union Fall Meeting. San Francisco, California.
- Luo, Yuzhou, Xuyang Zhang, Xingmei Liu, **Darren L. Ficklin**, Minghua Zhang. 2008. Dynamic modeling of organophosphate pesticide loads in surface water in the northern San Joaquin Valley Watershed of California. American Geophysical Union Fall Meeting. San Francisco, California.
- Luo, Yuzhou, Xuyang Zhang, Xingmei Liu, **Darren L. Ficklin**, Minghua Zhang. 2008. Dynamic modeling of organophosphate pesticide loads in surface water in the northern San Joaquin Valley Watershed of California. International Workshop on Sustainable Watershed Research and Management. Hangzhou, China.
- Ficklin, Darren L.** 2008. Hydrogeologic setting, water budget, and analysis of groundwater exchange at Crystal Lake, a Glacial Lake in McHenry County, Illinois. International Workshop on Sustainable Watershed Research and Management. Hangzhou, China.

## TEACHING EXPERIENCE

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*Courses taught – SP = Spring semester and FA = Fall semester, followed by the year taught*

- Water in the Midwest (GEOG 368) – *co-taught with Dr. Rebecca Lave* – SP19
- Computing in the Geospatial Sciences (GEOG 250/566) – SP16, SP18, FA19, SP21
- Water Security and Sustainability (GEOG 347) - *co-taught with Dr. Majed Akhter* – FA15
- Physical Hydrology (GEOG 451/551) – SP14, SP16, SP18, SP19, FA20, FA22
- Geographic Information Science (GEOG 338/538) – SP13, FA13, SP14, FA14, SP15, FA16, SP17
- Environmental Change: Nature & Impact (GEOG 305/540) – SP13
- Topical Seminar in Spatial Analysis and Geographic Information Science - GIS and Environmental Science Applications (GEOG 439/639) – SP15
- Advanced Geographic Information Science (GEOG 438/539) – SP17
- Environmental Change: The End of the World as We Know It? (GEOG 185) – FA17, FA19, FA20, FA21, FA22
- Climate Change Impacts (GEOG 444/544) - SP21

*Readings courses/internships supervised*

- Internship in Geographical Analysis (GEOG 400) - Approx. 1 per year
- Graduate Readings in Geography (GEOG 830) - Approx. 2 per year
- Graduate Research in Geography (GEOG 840) - Approx. 2 per year

### **Graduate students and postdoctoral researchers**

#### *Postdoctoral Researchers*

Pedro M. Avellaneda	2018-2020
Ram Neupane	2016-2019

#### *Graduate Student Committee Chair*

Seth Adelsperger	Ph.D., Geography, Indiana University	<i>In progress</i>
Seth Adelsperger	M.S., Geography, Indiana University	2020-2022

Daniel Myers	Ph.D., Geography, Indiana University	2018-2022
Meghan Engh	M.S., Geography, Indiana University	2018-2020
Michelle VanCompernelle	M.S., Geography, Indiana University	2016-2018
Anika Tabassum	M.S., Geography, Indiana University	2015-2017
William Burke	M.S., Geography, Indiana University	2014-2016

*Graduate Student Committee Member*

Rubaya Pervin	Ph.D. Geography, Indiana University	<i>In progress</i>
Eric Carlucci	Ph.D. Anthropology, Indiana University	<i>In progress</i>
Eduardo Gonzalez	Ph.D. Earth and Atmospheric Sciences, Indiana Univ.	<i>In progress</i>
Mahsa Khodae	Ph.D., Geography, Indiana University	<i>In progress</i>
Harrison Martin	Ph.D., Earth and Atmospheric Sciences, Indiana Univ.	<i>In progress</i>
Clarke DeLisle	Ph.D., Earth and Atmospheric Sciences, Indiana Univ.	<i>In progress</i>
Paige Becker	Ph.D., O'Neill School of Public and Env. Affairs, IU	<i>In progress</i>
Qing Chang	Ph.D., O'Neill School of Public and Env. Affairs, IU	<i>In progress</i>
Henry Collins	Ph.D., Central Eurasian Studies, Indiana University	<i>In progress</i>
Isioma Nwayor	M.S., Geography, Indiana University	<i>In progress</i>
Sara Johnson	M.S., Geography, Indiana University	2014-2020
Leonard Satterlee	M.S., Geography, Indiana University	2016-2019
Brandon Strange	M.S., Geography, Indiana University	2016-2018
Paul McCord	Ph.D., Geography, Indiana University	2013-2017
Trevis Matheus	Ph.D., Geography, Indiana University	2014-2017
Karly Schmidt	M.S., Geography, Indiana University	2013-2015
Trevis Matheus	M.S.,and Ph.D., Geography, Indiana University	2012-2014
Hamed Gholizadeh	Ph.D., Geography, Indiana University	2012-2016

*Undergraduate student mentorship and research*

Olivia Gugliemotto	B.S., Environmental Management	2015-2016
Meredith Strunk	B.S., Environmental Management	2013-2014
Jessica Ayers	B.S., Environmental Science	2013-2015
Anna Dufficy	B.S., Geological Sciences	2014-2015
Erin Hardman	B.S., Geography	2021-2021
Ellen Bergan	B.S., Geography	2021-2021

**SERVICE**

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*Service to the University and Department*

Indiana University

- IU School of Public Health Chair of the Department of Environmental and Occupational Health search committee (2018-2019)
- Wells Scholar Program student application reviewer and interviewer (2014 – *Present*)
- IU Research and Teaching Preserve Executive Committee - (2013 – *Present*)
- Sustainable Community of Practice – 3-day workshop - (May 12-14, 2014)
- IU professional development course - (August 2014 – *Present*)
- IU Residential Programs and Services Academic Initiatives - Pizza with a Professor - (August 2013 – 2016; *twice/year*)
- Indiana University Science Fest (2014)
- IU Bachelor of Science in Environmental Science Curriculum Committee (2019 - *Present*)
- IU Research and Teaching Preserve Director of Research (*Interim; 2022 - Present*)



### Indiana University Department of Geography

- Department of Geography Director of Graduate Studies (2019 – *Present*)
- Department of Geography Electronic Market Committee - (2013 – *Present*)
- Department of Geography Equipment and Computing Committee - (2013 – *Present*)
- Department of Geography Graduate Studies Committee (2014 – *Present*)
- Department of Geography Landscape Ecologist Faculty Search Committee (2013-2014)
- Department of Geography Visiting Assistant Professor Environmental Change Search Committee - (2013)

### ***Service to the Profession***

#### Editorial roles

- Associate Editor – *Climatic Change* (2015 – *Present*)
- Guest Editor for special issue “Advances in Solving Watershed-Scale Problems” – *Environmental Modeling and Software* (2016 – 2018)

#### Committees/Memberships

- The Consortium of Universities for the Advancement of Hydrologic Sciences (CUAHSI) – Indiana University representative
- Indiana Climate Change Assessment Working Group (2018-2020)

#### Conference session convener

- American Geophysical Union Fall Meeting 2022: Surface Water Quality Risk Assessment under Climate Change Uncertainty. Chicago, Illinois.
- American Geophysical Union Fall Meeting 2020: Impacts of climate change and variability on stream temperature and water quality. San Francisco, California (virtual).
- Geophysical Union Fall Meeting 2016: Stream and aquatic ecosystem responses to climatic extremes. San Francisco, California.
- Soil and Water Assessment Tool International Conference 2015: Climate change applications of SWAT. West Lafayette, Indiana
- American Geophysical Union Fall Meeting 2015: Stream hydrology, stream temperature, water quality, and aquatic habitats under climatic variability and change. San Francisco, California.
- American Geophysical Union Fall Meeting 2014: Local vs. global approaches in coupled natural-human systems research. San Francisco, California.
- American Geophysical Union Fall Meeting 2014: Hydrologic, water quality, and ecological responses to climatic variability and change at the watershed scale. San Francisco, California.
- American Geophysical Union Fall Meeting 2013: Water, climate variability, and the anthropocene. San Francisco, California.

#### Manuscript reviewer

Journal of Hydrology, Journal of Environmental Quality, Hydrological Processes, *Eos*, Trans. of ASABE, International Journal of Climatology, Ecological Applications, Soil Science Society of America Journal, Theoretical and Applied Climatology, Climatic Change, Environmental Research Letters, Environmental Earth Sciences, Regional Environmental Change, Proceedings of the National Academy of Sciences of the United States of America, Journal of Earth System Sciences, Agricultural Water Management, Water Resources Research, Hydrological Sciences Journal, Journal of Water and Climate Change, Int. Journal of Agricultural and Biological Engineering, Environmental Research Letters, River Research and Applications, Water, Hydrology and Earth System Sciences,

Agricultural and Forest Meteorology, Land Use Policy, Journal of Hydrology: Regional Studies, Journal of Earth Science, Journal of Arid Environments, International Journal of River Basin Management, Climate Research, Geophysical Research Letters, PLOS ONE, Journal of Hydrometeorology, Journal of Water Resources Management and Planning, Journal of Geophysical Research – Atmospheres, Journal of Applied Meteorology and Climatology, Atmospheric Research, Nature Communications, Nature Scientific Reports, Water Resource Management, Global Environmental Change, Nature Scientific Data, Nature Sustainability

Proposal reviewer/panel member

- 2013 Mid-Atlantic Sea Grant Program
- 2015, 2017 Hudson River Foundation for Science and Environmental Research
- 2015 National Science Foundation – Geography and Spatial Science program CAREER
- 2015, 2017 National Science Foundation – Geography and Spatial Science program
- 2016, 2020, 2021, 2022 National Science Foundation – Hydrologic Sciences program
- 2018 Illinois Water Resources Center
- 2018, 2022 National Science Foundation – Earth Sciences Postdoctoral Fellowship Reviewer
- 2019 NOAA Model, Analysis, Predictions, and Projections review panel member
- 2021 National Science Foundation – Harnessing the Data Revolution review panel member

Book review/Book proposal review

- Cambridge University Press (2019, 2020)

Service to the Community

- Radio interview on the program “EcoReport” on WFHB community radio in Bloomington, Indiana discussing the California drought and other western United States water issues in January, 2016.
- Radio interview on Indiana Public Broadcasting discussing the recently-received National Science Foundation grant “HydroClim: Empowering aquatic research in North America with data from high-resolution streamflow and water temperature GIS modeling” in April, 2016