

Laura K. Lautz

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EDUCATION

Ph.D., 2005 Department of Earth Sciences, Syracuse University, Syracuse, NY
M.Ed., 1999 Graduate School of Education, Harvard University, Cambridge, MA
B.S., 1998 Department of Geology & Environmental Geosciences, Lafayette College, Easton, PA

PROFESSIONAL APPOINTMENTS

2019 – present Program Director, Hydrologic Sciences, National Science Foundation, Alexandria, VA
2017 – 2019 Jessie Page Heroy Professor & Department Chair, Department of Earth Sciences, Syracuse University, Syracuse, NY
2012 – 2017 Associate Professor, Department of Earth Sciences, Syracuse University, Syracuse, NY
2008 – 2012 Assistant Professor, Department of Earth Sciences, Syracuse University, Syracuse, NY
2005 – 2008 Assistant Professor, Department of Forest and Natural Resources Management, State University of New York, College of Environmental Science & Forestry, Syracuse, NY

AWARDS AND HONORS

Chancellor's Citation for Faculty Excellence and Scholarly Distinction, Syracuse University, 2019
Fellow, Geological Society of America, 2018
SyracuseCoE Faculty Fellow (SyracuseCoE is New York State's Center of Excellence for Environmental and Energy Systems), 2016-2019
Excellence in Graduate Education Faculty Recognition Award, Syracuse University, 2013
NSF CAREER Grant, 2008

PROFESSIONAL DEVELOPMENT

Leadership Skills for Success in the Scientific Workforce, Earth Science Women's Network, Boulder, Colorado, October 2018
Workshop for Heads and Chairs of Earth and Space Sciences Departments, American Geophysical Union, New Orleans (December 2017) and Washington, DC (December 2018)
Hearts of GOLD NSF-sponsored workshop to help leaders in geosciences become champions for diversity, Colorado Springs, July 2017
Denice Denton Emerging Leaders Workshop, University of Wisconsin-Madison, June 2016
Faculty Leadership and Professional Development Program, Cornell University, January 2016

RESEARCH FUNDING

Total Funding Awarded as PI: \$5,091,314; Total Funding Awarded as PI and co-PI: \$6,638,528

Awards as PI:

NRT: Education Model Program on Water-Energy Research (EMPOWER) at Syracuse University, National Science Foundation, 2015-2020, **PI: L. Lautz**, co-PI's: C. Driscoll, C. Scholz, T. Kahan, D. Torrance
(Includes 4 NSF INTERN Supplemental Awards) **Total Award: \$3,113,717**

Collaborative Research: Groundwater-surface water interactions in tropical alpine catchments and their influence on sources and stability of water supply during glacial recession, National Science Foundation, 2013-2018, **PI: L. Lautz**, co-PI's: B. Mark (Ohio State) **Total Award: \$611,900**

Temporal changes in methane concentrations in domestic groundwater wells in the Marcellus Shale region, Syracuse Center of Excellence, 2016-2017, **PI: L. Lautz**, co-PI's: G. Hoke, Z. Lu **Total Award: \$25,000**

RAPID: Developing sensitive tests for detecting contamination associated with shale bed methane production in the Appalachian Basin, National Science Foundation, 2013-2015, **PI: L. Lautz**, co-PI's: G. Hoke, Z. Lu, D. Siegel. S. Samson (Includes Alliances for Minority Participation – Student Research Supplement) **Total Award: \$95,574**

Early Career: Acquisition of an Isotopic Liquid-Water Analyzer for Hydrology and Earth Science Research and Education at Syracuse University, National Science Foundation, 2012-2013, **PI: L. Lautz**, co-PI's: G. Hoke, Z. Lu
Total Award: \$88,098

Collaborative Research: Impacts of in-stream restoration on hydrological, chemical, and biological heterogeneity in the hyporheic zone, National Science Foundation, 2010- 2015, **PI: L. Lautz**, co-PI's: T. Endreny, K. McGrath (SUNY-ESF)
Total Award: \$472,980

CAREER: Integrating Research and Education to Advance the Use of Heat as a Tracer of Surface- Ground Water Interaction at Multiple Spatial and Temporal Scales, National Science Foundation, 2008- 2014, **PI: L. Lautz** (no co-PI's)
Total Award: \$595,130

The Impact of Changing Climate on Winter Nitrogen Export from a Forested Watershed of the Adirondack Mountains, USDA McIntire-Stennis Cooperative Forestry Research Program, 2007-2010, **PI: L. Lautz**, co-PI: M. Mitchell (SUNY ESF)
Total Award: \$81,230

Heat and Chemical Tracing of Contaminant Fluxes to Ninemile Creek, SUNY ESF Competitive Seed Grant, October 2007 - September 2008, **PI: L. Lautz** (no co-PI's)
Total Award: \$7,685

Awards as Co-PI:

Environmental Monitoring and Geoscience Surveying Applications for sUAS at Syracuse University, Research and Education for Safe and Secure Unmanned Systems: Phase I, College of Engineering & Computer Science and Office of Research, \$32,320, 2016-2017, PI: C. Kelleher, **Co-PIs: L. Lautz**, R. Moucha, L. Condon, C. Scholz, J. Karson
Total Award: \$35,322

Project SWIFT: Shale-water Interaction Forensic Tools, Developing sensitive tests for detecting contamination associated with shale bed methane production in the Appalachian Basin: A pilot project in New York's Southern Tier, Syracuse University Seed Grant, 2012-2012. PI: G. Hoke, **co-PI's: L. Lautz**, D. Siegel, Z. Lu
Total Award: \$19,390

Life Down Under: The forgotten hyporheic zone in stream restoration and development of a bioindicator of subsurface recovery, EPA: Syracuse Center of Excellence, 2008-2010, PI: K. McGrath (SUNY ESF), **co-PI: L. Lautz**
Total Award: \$100,000

Evaluation and Protection of Adirondack Ecosystems: Impacts of Acid and Mercury, NYS Energy Research and Development Authority, 2008-2011, PI: M. Mitchell (SUNY ESF), **co-PI's: L. Lautz**, C. Driscoll (Syr Univ), P. McHale (SUNY-ESF), B. Mayer (Univ of Calgary)
Total Award: \$378,568

Water Flux and Nitrogen Cycling in the Hyporheic Zones of a Semi-Arid Watershed: Hydrologic and Geomorphic Driving Forces in a Transitional Climate, Water Cycle Research Program, National Science Foundation, 2005-2010, PI: Siegel (Syracuse Univ), **co-PI's: L. Lautz**, A. Costello-Staniec (Syr Univ), T. Endreny, M. Mitchell (SUNY ESF)
Total Award: \$744,069

A Decision-Support System for Forest Management under Forest Tent Caterpillar Defoliation, USDA Forest Service NSRC, 2007-2009, PI: R. Yanai (SUNY ESF), **co-PI's: L. Lautz**, D. Parry, D. Allen (SUNY ESF), J. Carlson (NYS DEC), S. Wilmot (VT Forests, Parks & Rec)
Total Award: \$107,767

Establishing, Maintaining and Monitoring the Willow Phytoremediation System at Fort Drum's Old Sanitary Landfill, Malcolm Pirnie, Inc, 2007-2008, PI: C. Novak (SUNY ESF), **co-PI: L. Lautz**, T. Volk (SUNY ESF)
Total Award: \$113,009

Assessing the Ecosystem Services of Open Space for Water Resource Protection in the Moodna Watershed, NY, Water Resources Research Grant Program (Administered by the USGS, DOI and NYS DEC), PI: K. Limburg, V. Luzadis (SUNY ESF), **co-PI: L. Lautz**
Total Award: \$49,089

PUBLICATIONS

*Student or Postdoc author, directly supervised by Lautz at time of publication;

**Student author of collaborator at time of publication

Google Scholar h-index = 32 (as of October 2021)

Scopus h-index = 27 (as of October 2021)

In review:

*Campbell, AE, **LK Lautz**, GD Hoke. in review. Temporal changes in domestic water well methane overlying the Marcellus Shale in the absence of shale gas development.

*Baker, EA, **LK Lautz**, JM McKenzie, BG Mark. in revision. Does groundwater sustain dry season streamflow in tropical Andean catchments experiencing glacial retreat?

Published or In Press:

73. *Beltran, J., **LK Lautz**, *J.R. Slosson. 2021. The impact of stream-groundwater exchange on seasonal nitrate loads in an urban stream. *Hydrological Processes*, 35(8): e14324. doi: 10.1002/hyp.14324

72. *Davis, J., **LK Lautz**, C Kelleher, PG Vidon, *CJ Russoniello, **C Pearce. accepted. Evaluating the geomorphic channel response to beaver dam analogue installation using unoccupied aerial vehicles. *Earth Surface Processes and Landforms*. doi: 10.1002/esp.5180

71. **Pearce, C, PG Vidon, **LK Lautz**, C Kelleher, *J Davis. 2021. Short-term impact of beaver dam analogues on streambank erosion and deposition in semi-arid landscapes of the Western USA. *River Research and Applications*. doi: 10.1002/rra.3825

70. **Pearce, C, PG Vidon, **LK Lautz**, C Kelleher, *J Davis. 2021. Impact of beaver dam analogues on hydrology in a semi-arid floodplain. *Hydrological Processes*, 35(7): e14275. doi: 10.1002/hyp.14275

69. *Slosson, JR, **LK Lautz**, *J Beltran. 2021. Chloride load dynamics along channelized and intact reaches in a Northeastern United States urban headwater stream. *Environmental Research Letters*, 16: 025001. doi: 10.1088/1748-9326/abd8ab

68. **Lautz, LK**, SH Ledford, *J Beltran. 2020. Legacy effects of cemeteries on groundwater quality and nitrate loads to a headwater stream. *Environmental Research Letters*, 15: 125012. doi: 10.1088/1748-9326/abc914

67. *Wade, JS, **LK Lautz**, C Kelleher, PG Vidon, *J Davis, **CR Pearce. 2020. Heterogeneity in groundwater-surface water interactions driven by beaver dam analogues. *Hydrological Processes*, 34(26): 5340-5353. doi: 10.1002/hyp.13947

66. **Kruegler, J, J Gomez-Velez, **LK Lautz**, TE Endreny. 2020. Dynamic Evapotranspiration Alters Hyporheic Flow and Residence Times in the Intrameander Zone. *Water*, 12(2): 424. doi: 10.3390/w12020424

65. *Russoniello, CJ, **LK Lautz**. 2020. Pay the PIED Piper: Guidelines to visualize large geochemical datasets on Piper Diagrams. *Groundwater*, 58(3): 464-469. doi: 10.1111/gwat.12953

64. *Glas, RL, D Burns, **LK Lautz**. 2019. Historical changes in New York State streamflow: attribution of temporal shifts and spatial patterns from 1961-2016. *Journal of Hydrology*, 574:308-323. doi: 10.1016/j.jhydrol.2019.04.060

63. *Glas, RL, **LK Lautz**, JM McKenzie, R Moucha, D Chavez, B Mark, J Lane. 2019. Hydrogeology of an alpine talus aquifer: Cordillera Blanca, Peru. *Hydrogeology Journal*, 27(6):2137-2154. doi:10.1007/s10040-019-01982-5

62. *Baker, EA, **LK Lautz**, JM McKenzie, C Aubrey-Wake. 2019. Improving the accuracy of time-lapse thermal infrared imaging for hydrologic applications. *Journal of Hydrology*, 571:60-70. doi: 10.1016/j.jhydrol.2019.01.053

61. **Lautz, LK**. 2019. Predicting natural methane occurrence in domestic groundwater wells in the Marcellus Shale region: A case for empirical modeling approaches (Invited Commentary), *Hydrological Processes*, 33(6):1022-1028. doi: 10.1002/hyp.13389

60. **Caldwell, SH, C Kelleher, *EA Baker, **LK Lautz**. 2019. Relative information from thermal infrared imagery via unoccupied aerial vehicle informs simulations and spatially-distributed assessments of stream temperature, *Science of the Total Environment*, 661:364-374. doi: 10.1016/j.scitotenv.2018.12.457

59. **Wigmore, O, BG Mark, JM McKenzie, M Baraer, **LK Lautz**. 2019. Sub-metre mapping of surface soil moisture in proglacial valleys of the tropical Andes using a multispectral unmanned aerial vehicle. *Remote Sensing of Environment*, 222:104-118. doi: 10.1016/j.rse.2018.12.024

58. **Lautz, LK**, C Kelleher, PG Vidon, J Coffman, C Riginos, H Copeland. 2019. Restoring stream ecosystem function with beaver dam analogues: Let's not make the same mistake twice (Invited Commentary), *Hydrological Processes*, 33(1):174-177. doi: 10.1002/hyp.13333

57. *Baker, EA, **LK Lautz**, C Kelleher, JM McKenzie. 2018. The importance of incorporating diurnally fluctuating stream discharge in stream temperature energy balance models. *Hydrological Processes*, 32(18): 2901-2914. doi: 10.1002/hyp.13226

56. *Glas, RL, **LK Lautz**, JM McKenzie, BG Mark, M Baraer, **D Chavez, **L Maharaj. 2018. Proglacial hydrogeology in the outer tropics: current state of knowledge from the Cordillera Blanca, Peru. *WIREs Water*, 5(5): e1299. doi: 10.1002/wat2.1299
55. Briggs, M, Z Johnson, C Snyder, N Hitt, B Kurylyk, **LK Lautz**, DJ Irvine, S Hurley, Lane, J. 2018. Inferring watershed hydraulics and cold-water habitat persistence using multi-year air and stream temperature signals. *Science of the Total Environment*, 636: 1117-1127. doi: 10.1016/j.scitotenv.2018.04.344
54. **Lautz, LK**, DH McCay, CT Driscoll, RL Glas, KM Gutchess, AJ Johnson, and GD Millard. 2018. Preparing graduate students for STEM careers outside academia, *Eos*, 99. doi: 10.1029/2018EO101599. Published 20 August 2018.
53. **Gutchess, K, L Jin, JLJ Ledesma, J Crossman, C Kelleher, **LK Lautz**, Z Lu. 2018. Long-term climatic and anthropogenic impact on stream water salinity in New York State: INCA simulations offer cautious optimism. *Environmental Science & Technology*, 52(3): 1339-1347. doi: 10.1021/acs.est.7b04385
52. **Levy, Z, CT Mills, Z Lu, MB Goldhaber, DO Rosenberry, DM Mushet, **LK Lautz**, **X Zhou, DI Siegel. 2018. Using halogens (Cl, Br, I) to understand the hydrogeochemical evolution of drought-derived saline porewater beneath a prairie wetland. *Chemical Geology*, 476: 191-207. doi: 10.1016/j.chemgeo.2017.11.017
51. *Chien, NP, **LK Lautz**. 2018. Discriminant analysis as an improved quantitative method for geochemical fingerprinting of groundwater salinity. *Science of the Total Environment*, 618: 379-387. doi: 10.1016/j.scitotenv.2017.11.019
50. Mark, BG, A French, J Bury, M Carey, K Young, M Polk, O Wigmore, P Lagos, R Crumley, J McKenzie, **LK Lautz**. 2017. Glacier loss and hydro-social risks in the Peruvian Andes. *Global and Planetary Change*, 159: 61-76. doi: 10.1016/j.gloplacha.2017.10.003
49. *Ledford, SH, **LK Lautz**, PG Vidon, JC Stella. 2017. Impact of seasonal changes in stream metabolism on nitrate concentrations in an urban stream. *Biogeochemistry*, 133(3): 317-331. doi: 10.1007/s10533-017-0336-7
48. *Glose, AM, **LK Lautz**, *EA Baker. 2017. Stream heat budget modeling with HFLUX: model development, verification, and applications across contrasting sites and seasons. *Environmental Modeling & Software*, 92: 213-228. doi: 10.1016/j.envsoft.2017.02.021
47. Irvine, DJ, MA Briggs, **LK Lautz**, RP Gordon, JM McKenzie, I Cartwright. 2017. Using diurnal temperature signals to infer vertical groundwater-surface water exchange. *Groundwater*, 55(1): 10-26. doi: 10.1111/gwat.12459
46. *Irvine, DJ, MA Briggs, I Cartwright, CR Scruggs, **LK Lautz**. 2017. Improved vertical streambed flux estimation using multiple diurnal temperature methods in series. *Groundwater*, 55(1): 73-80. doi: 10.1111/gwat.12436
45. **Somers, L, *RP Gordon, JM McKenzie, **LK Lautz**, **O Wigmore, *AM Glose, *R Glas, **C Aubry-Wake, BG Mark, M Baraer, T Condom. 2016. Quantifying groundwater-surface water interactions in a proglacial valley, Cordillera Blanca, Peru. *Hydrological Processes*, 30(17):2915-2929. doi: 10.1002/hyp.10912
44. **Gutchess, K, L Jin, **LK Lautz**, SB Shaw, **X Zhou, Z Lu. 2016. Chloride sources in urban and rural headwater catchments, central New York. *Science of the Total Environment*, 565:462-472. doi: 10.1016/j.scitotenv.2016.04.181
43. *Ledford, SH, **LK Lautz**, JC Stella. 2016. Hydrogeologic processes impacting storage, fate, and transport of chloride from road salt in urban riparian aquifers. *Environmental Science & Technology*, 50(10):4979-4988. doi: 10.1021/acs.est.6b00402
42. *Christian, K, **LK Lautz**, GD Hoke, DI Siegel, Z Lu, J Kessler. 2016. Methane occurrence is associated with sodium-rich valley waters in domestic wells overlying the Marcellus Shale in New York State. *Water Resources Research*, 52(1):206-226. doi: 10.1002/2015WR017805
41. Birkel, C, C Soulsby, *DJ Irvine, I Malcolm, **LK Lautz**, D Tetzlaff. 2016. Heat-based hyporheic flux calculations in heterogeneous salmon spawning gravels. *Aquatic Sciences*, 78(2):203-213. doi: 10.1007/s00027-015-0417-4
40. **Aubry-Wake, C, M Baraer, JM McKenzie, BG Mark, **O Wigmore, R Hellstrom, **LK Lautz**. 2015. Glacier surface temperature measurements using ground-based infrared imagery: new insights for melt influence of margins and debris cover. *Geophysical Research Letters*, 42(20):8489-8497. doi:10.1002/2015GL065321.
39. *Irvine, DJ, **LK Lautz**, MA Briggs, *RP Gordon, JM McKenzie. 2015. Experimental evaluation of the applicability of phase, amplitude, and combined methods to determine water flux and thermal diffusivity from temperature time series using VFLUX 2. *Journal of Hydrology*, 531(3):728-737. doi:10.1016/j.jhydrol.2015.10.054
38. **Smidt, S, **J Cullin, A Ward, **J Robinson, *M Zimmer, **L Lautz**, T Endreny. 2015. A comparison of hyporheic transport at a stream restoration structure and natural feature. *Ground Water*, 53(6):859-871. doi:10.1111/gwat.12288.
37. Lu, Z, **S Hummel, **LK Lautz**, GD Hoke, **X Zhou, J Leone, DI Siegel. 2015. Iodine as a sensitive tracer for detecting influence of organic-rich shale in shallow groundwater. *Applied Geochemistry*, 60: 29-36. doi: 10.1016/j.apgeochem.2014.10.019

36. *Irvine, DJ, **LK Lautz**. 2015. High resolution mapping of hyporheic fluxes using streambed temperatures: Recommendations and limitations. *Journal of Hydrology*, 524:137-146. doi:10.1016/j.jhydrol.2015.02.030
35. *Gordon, RP, **LK Lautz**, JM McKenzie, BG Mark, **D Chavez, M Baraer. 2015. Sources and pathways of stream generation in tropical proglacial valleys of the Cordillera Blanca, Peru. *Journal of Hydrology*, 522:628-644. doi:10.1016/j.jhydrol.2015.01.013
34. *Irvine, DJ, R Cranswick, CT Simmons, M Shanafield, **LK Lautz**. 2015. The effect of streambed heterogeneity on temperature time series methods to quantify groundwater-surface water exchange. *Water Resources Research*, 51(1):198-212. doi:10.1002/2014WR015769
33. *Zimmer, MA, **LK Lautz**. 2015. Pre- and post-restoration assessment of stream-ground water interactions: impacts on hydrological and chemical heterogeneity in the hyporheic zone. *Freshwater Science*, 34(1):287-300. doi: 10.1086/679514.
32. *Ledford, SH, **LK Lautz**. 2015. Floodplain connection buffers seasonal changes in urban stream water quality. *Hydrological Processes*, 29(6):1002-1016. doi:10.1002/hyp.10210
31. Briggs, MA, **LK Lautz**, SF Buckley, JW Lane. 2014. Practical limitations on the use of vertical temperature profiles to quantify groundwater upwelling. *Journal of Hydrology*, 519 Part B:1739–1751. doi:10.1016/j.jhydrol.2014.09.030.
30. **Lautz, LK**, GD Hoke, Z Lu, DI Siegel, *K Christian, J Kessler, **NG Teale. 2014. Using discriminant analysis to determine sources of salinity in shallow groundwater prior to hydraulic fracturing. *Environmental Science & Technology*, 48(16):9061–9069. doi: 10.1021/es502244v.
29. *Briggs, MA, **LK Lautz**, *DK Hare. 2014. Residence time control on hot moments of net nitrate production and uptake in the hyporheic zone. *Hydrological Processes*, 28(11):3741-3751. doi:10.1002/hyp.9921
28. *Zimmer, MA, **LK Lautz**. 2014. Temporal and spatial response of hyporheic zone geochemistry to a storm event. *Hydrological Processes*, 28(4):2324-2337. doi:10.1002/hyp.9778
27. *Daniluk, TL, **LK Lautz**, *RP Gordon, TA Endreny. 2013. Surface water-groundwater interaction at restored streams and associated reference reaches. *Hydrological Processes*, 27(25):3730-3746. doi:10.1002/hyp.9501.
26. *Gordon, RP, **LK Lautz**, *TL Daniluk. 2013. Spatial patterns of hyporheic exchange and biogeochemical cycling around cross-vane restoration structures: implications for stream restoration design. *Water Resources Research*, 49(3). doi:10.1002/wrcr.20185.
25. *Briggs, MA, **LK Lautz**, *DK Hare, R González-Pinzón. 2013. Relating hyporheic fluxes, residence times, and redox-sensitive biogeochemical processes upstream of beaver dams. *Freshwater Science*, 32(2):622-641. doi: 10.1899/12-110.1
24. *Kurian, LM, **LK Lautz**, MJ Mitchell. 2013. Winter hydrology and NO₃⁻ export from a forested watershed: a detailed field study in the Adirondack Mountains of New York, USA. *Journal of the American Water Resources Association*, 49(2):264-283. doi: 10.1111/jawr.12012
23. Jin, L, DI Siegel, **LK Lautz**, Z Lu. 2012. Identifying streamflow sources during spring snowmelt using water chemistry and isotopic composition in semi-arid mountain streams. *Journal of Hydrology*, 470-471:289-301. doi:10.1016/j.jhydrol.2012.09.009
22. **Lautz, LK**, *RE Ribaudó. 2012. Scaling up point-in-space heat tracing of seepage flux using bed temperatures as a quantitative proxy. *Hydrogeology Journal*, 20(7):1223.1238. doi: 10.1007/s10040-012-0870-2
21. **Lautz, LK**. 2012. Observing temporal patterns of vertical flux through streambed sediments using time-series analysis of temperature records. *Journal of Hydrology*, 464-465:199-215. doi:10.1016/j.jhydrol.2012.07.006.
20. *Briggs, MA, **LK Lautz**, JM McKenzie, *RP Gordon, *D Hare. 2012. Using high-resolution distributed temperature sensing to quantify spatial and temporal variability in vertical hyporheic flux, *Water Resources Research*, 48, W02527. doi:10.1029/2011WR011227.
19. *Briggs, MA, **LK Lautz**, JM McKenzie. 2012. A comparison of fiber-optic Distributed Temperature Sensing to traditional methods of evaluating groundwater inflow to streams. *Hydrological Processes*, 26(9):1277-1290. doi: 10.1002/hyp.8200.
18. *Gordon, RP, **LK Lautz**, *MA Briggs, JM McKenzie. 2012. Automated calculation of vertical pore-water flux from field temperature time series using the VFLUX method and computer program. *Journal of Hydrology*, 420-421:142-158. doi: 10.1016/j.jhydrol.2011.11.053
17. **Fabian, MW, TA Endreny, A Bottacin-Busolin, **LK Lautz**. 2011. Seasonal variation in cascade driven hyporheic exchange, northern Honduras. *Hydrological Processes*, 25(10):1630-1646. doi:10.1002/hyp.7924
16. Endreny, TA, **LK Lautz**, DI Siegel. 2011. Hyporheic flow path response to hydraulic jumps at river steps: hydrostatic model simulations. *Water Resources Research*, 47, W02518. doi:10.1029/2010WR010014.
15. Endreny, TA, **LK Lautz**, DI Siegel. 2011. Hyporheic flow path response to hydraulic jumps at river steps: flume and hydrodynamic models. *Water Resources Research*, 47, W02517. doi:10.1029/2009WR008631.

14. *Hubbard, KA, **LK Lautz**, MJ Mitchell, B Mayer, ER Hotchkiss. 2010. Evaluating nitrate uptake and spiraling in a Rocky Mountain stream using labeled 15N and ambient nitrate chemistry. *Hydrological Processes*, 24(23):3322-3336. doi: 10.1002/hyp.7764
13. **Lautz, LK**, NT Kranes, DI Siegel. 2010. Heat tracing of heterogeneous hyporheic exchange adjacent to in-stream geomorphic features. *Hydrological Processes*, 24(21):3074-3086. doi: 10.1002/hyp.7723
12. **Jin, L, DI Siegel, **LK Lautz**, MJ Mitchell, DE Dahm, and B Mayer. 2010. Calcite precipitation driven by the common ion effect during groundwater-surface water mixing: a potentially common process in streams with geologic settings containing gypsum. *The Geologic Society of America Bulletin*, 122(7-8):1027-1038. doi: 10.1130/B30011.1
11. **Lautz, LK**. 2010. Impacts of non-ideal field conditions on vertical water velocity estimates from streambed temperature time series. *Water Resources Research*, 46, W01509. doi:10.1029/2009WR007917.
10. Bauer, RL, DI Siegel, EA Sandvol, **LK Lautz**. 2009. Integrating hydrology and geophysics into a traditional geology field course: The use of advanced project options. In *Field Geology Education: Historical Perspectives and Modern Approaches*, Geological Society of America Special Papers 2009, 461, p. 135-154. doi:10.1130/2009.2461(12).
9. **Jin, L, DI Siegel, **LK Lautz** and MH Otz. 2009. Transient storage and the scaling of solute transport in a second order mountain stream. *Hydrological Processes*, 23(17):2438-2449. doi: 10.1002/hyp.7359.
8. **Lautz, LK**, *RM Fanelli. 2008. Seasonal biogeochemical hotspots in the streambed around restoration structures. *Biogeochemistry*, 91(1): 85-104. doi: 10.1007/s10533-008-9235-2
7. *Fanelli, RM, **LK Lautz**. 2008. Water, heat and solute fluxes through the hyporheic zone of small dams. *Ground Water*, 46(5): 671-687. doi: 10.1111/j.1745-6584.2008.00461.x
6. **Lautz, LK**. 2008. Estimating groundwater evapotranspiration rates using diurnal water table fluctuations in a semi-arid riparian zone. *Hydrogeology Journal*, 16(3): 483-497. doi: 10.1007/s10040-007-0239-0
5. **Lautz, LK**, DI Siegel, RL Bauer. 2007. Dye tracing through Sinks Canyon: incorporating advanced hydrogeology into the University of Missouri's geology field camp. *Journal of Geoscience Education*, 55(3): 197-202.
4. **Lautz, LK**, DI Siegel. 2007. The effect of transient storage on nitrate uptake lengths in streams: an inter-site comparison. *Hydrological Processes*, 21(26): 3533-3548. doi: 10.1002/hyp.6569
3. **Lautz, LK**, DI Siegel. 2006. Modeling Surface and Ground Water Mixing in the Hyporheic Zone Using MODFLOW and MT3D. *Advances in Water Resources*, 29: 1618-1633. doi: 10.1016/j.advwatres.2005.12.003
2. **Lautz, LK**, DI Siegel, RL Bauer. 2006. Impact of Debris Dams on Hyporheic Interaction Along a Semi-arid Stream. *Hydrological Processes*, 20(1):183-196. doi: 10.1002/hyp.5910
1. **Heberlig, LK**, I Valiela, BJ Roberts, and LA Soucy. 1997. Field Verification of Predictions of the Waquoit Bay Nitrogen Loading Model. *Biological Bulletin*, 193: 294-295.

Book Chapter:

Brunner, P, DO Rosenberry, **LK Lautz**, JW Harvey, AS Ward, VA Zlotnick. 2016. Chapter 9: Groundwater-Surface Water Interactions, in *The Handbook of Groundwater Engineering*, 3rd edition, Edited by JH Cushman and DM Tartakovsky, CRC Press, p. 255-306.

TEACHING

EAR 106	Geohazards & Natural Disasters, 3 credits (2010 – 2014)
EAR 401/601	Hydrogeology, 3 credits (2010 – 2016)
EAR 440/640	Watershed Hydrology, 3 credits (2004 – 2009)
EAR 483/683	Department Colloquium, 1 credit (2009)
EAR 612	Water-Energy Seminar, 1 credit (2013 – 2019)
EAR 660	Advanced Hydrological Field Methods, 3 credits (2007 – 2011)
EAR 665	Groundwater Modeling, 3 credits (2006 – 2019)
FOR 443/643	Forest Hydrology, 3 credits (2005 – 2008)
FOR 496/797	Seminar on Environmental Career Strategies for Women, 1 credit (2007 – 2008)
FOR 797	Seminar on Hydrology & Biogeochemical Processes, 1 credit (2008)
GEOL 4992	Geology Field Course (Univ of Missouri-Columbia), 6 credits (2003 – 2010)

GRADUATE STUDENT AND POST-DOCTORAL RESEARCH ASSOCIATE ADVISING

Current Graduate Students:

Amanda Campbell **PhD**, degree expected Spring 2022

Previous Post-Doctoral Research Associates:

Christopher Russoniello, **2017-2019**, Assistant Professor at University of West Virginia
Ryan Gordon, **2014-2015**, Senior Hydrogeologist with the Maine Geological Survey
Dylan Irvine, **2013-2014**, Research Focused Senior Fellow at Charles Darwin University in Australia

Previous Graduate Students (in reverse chronological order):

J.R. Slosson **PhD** (co-advised), 2021, Visiting Assistant Professor at Colorado College
Julio Beltran **MS**, 2020, Hydrologist with USGS Oklahoma-Texas Water Science Center
Julianne Davis **MS**, 2020, PhD student at UNC Chapel Hill
Emily Baker **PhD**, 2019, Postdoc at University of Pavia
Robin Glas **PhD**, 2018, Hydrologist at the USGS New York Water Science Center
Nathaniel Chien **MS**, 2018, Hydrologist at US Environmental Protection Agency
Sarah Ledford **PhD**, 2016, Assistant Professor at Georgia State University
Kayla Christian **MS**, 2015, Hydrologist at the USGS Ohio-Kentucky-Indiana Water Science Center
Ryan Gordon **PhD**, 2013, Senior Hydrogeologist with the Maine Geological Survey
AnneMarie Glose **MS**, 2013, Environmental Specialist at Southern California Edison
Margaret Zimmer **MS**, 2013, Assistant Professor at UC Santa Cruz
Martin Briggs **PhD**, 2012, Research Hydrologist in the USGS Water Resources Mission Area in Storrs, CT
Timothy Daniluk **MS**, 2011, Sr Consultant, Hydrogeologist at Environmental Resources Management
Lisa Kurian **MS**, 2009, Hydrologist for US Forest Service in Willamette National Forest, Oregon
Rachel Ribaudo **MS**, 2009, Scientist for EA Engineering, Science and Technology, Inc.
Ken Hubbard **MS**, 2008, Lead Environmental Specialist at Buckeye Partners
Rosemary Fanelli **MS**, 2007, Hydrologist with the USGS Maryland-Delaware-DC Water Science Center

Current Committee Member for:

Ph.D. Committees: Ruta Basijokiata (SU), Eliza Hurst (SU), Changcheng Pu (SU), Jeffrey Wade (SU)

Past Committee Member for:

Ph.D. Committees (n=16): Reza Abdi (SUNY ESF), Rosemary Fanelli (Univ. of Maryland), Rachel Fleishman (SU), Colin Fuss (SU), Heather Golden (SUNY ESF), Kristina Gutchess (SU), Bangshuai Han (SUNY ESF), Li Jin (SU), Zeno Levy (SU), Karen Murray (SUNY ESF), Tamir Puntsag (SUNY ESF), Molly Ramsey (SUNY ESF), Soumitri Sarkar (SU), Alexis Stathis (SU), Molly Welsh (SUNY ESF), Tian Zhou (SUNY ESF)
M.S. Committees (n=41): Reza Abdi (SUNY ESF), Daniel Brown (SUNY ESF), Crystal Burgess (SU), Doreen Bwalya (SUNY ESF), Sam Caldwell (SU), Alvin Chan (SUNY ESF), Xi Chen (SU), Virginia Collins (SUNY ESF), Jill Crispell (SUNY ESF), Matthew Domser (SUNY ESF), Mark Fabian (SUNY ESF), Michael Fay (SUNY ESF), Michael Fox (SUNY ESF), Max Gade (SU), Kacie Gehl (SUNY ESF), Maria Laura Gonzalez (SUNY ESF), Jason Hamidi (SUNY ESF), Kyle Hodgson (SUNY ESF), Sunshyne Hummel (SU), Asa Kline (SUNY ESF), Ouro Koumai (SUNY ESF), Nathan Kranes (SU), James Kruegler (SUNY ESF), Arthur Lilienthal (SUNY ESF), Donna Lowe (SUNY ESF), Jessica Martin (SUNY ESF), Adao Matonse (SUNY ESF), Kimberly McEathron (SUNY ESF), Emilio Menvielle (SUNY ESF), Gretchen Miles (SUNY ESF), Xiangyu Mu (SU), Nicole Ng (SUNY ESF), Deborah Ofori (SUNY ESF), Karl Oetjen (SU), Tracey O'Malley (SUNY ESF), Casey Pearce (SUNY ESF), Jesse Robinson (SUNY ESF), Riley Sessanna (SU), Horace Shaw (SUNY ESF), Jeff Spradlin (SU), Alison Taroli (SUNY ESF)

UNIVERSITY SERVICE AND PROFESSIONAL ACTIVITIES

Service to the Profession

- Science Advisory Board, John Wesley Powell Center for Analysis and Synthesis, January 2020 – present
- Associate Editor for Hydrological Processes (HP), January 2017-September 2021
- Malcolm Anderson Award Committee for Hydrological Processes (HP), 2018 - 2020: Selection committee recognizing original research published in HP that advances understanding of hydrological processes and contains outstanding novel contributions
- Panelist, National Science Foundation
 - DGE: National Science Foundation Research Traineeship (NRT) – 4 panels; 2016-2019
 - EAR: Hydrologic Sciences, 4 panels, 2008-2015
- Proposal Peer Reviewer, National Science Foundation, 2009-2019: I reviewed ~2 proposals per year for NSF. These numbers do not include service on NSF panels.
- Associate Editor for Water Resources Research (WRR), October 2012-January 2017: I served as the AE for 67 manuscripts in 4.2 years, for an average of >15 manuscripts per year.

- Manuscript Peer Reviewer, November 2008–present: *Advances in Water Resources*, *Canadian Water Resources Journal*, *Ecological Engineering*, *Environmental Modeling & Software*, *Environmental Science & Technology*, *Freshwater Science*, *Groundwater*, *Hydrology & Earth Systems Sciences*, *Hydrogeology Journal*, *Hydrological Processes*, *JGR*, *JGR-Biogeosciences*, *JGR-Solid Earth*, *Journal of Hydrologic Engineering*, *Journal of Hydrology*, *Journal of Hydrology-Regional Studies*, *Limnology & Oceanography*, *Water Resources Research*, *WIREs Water*
- National Conference Session Convener:
 - 2020 GSA Fall Meeting Session entitled, “Novel Outcomes in the Hydrologic Sciences: Emerging Areas of Research, New Educational Approaches, Broadening Participation, and Societal Impact”
 - 2019 AGU Annual Meeting Session entitled, “Science to Action: Transformative Partnerships to Advance Decision-Relevant Science”
 - 2018 GSA Fall Meeting Session entitled, “Water Temperatures in Surface and Subsurface Hydrologic Systems: Controls, Applications, and Implications”
 - 2017 GSA Fall Meeting Session entitled, “Hydrogeology, Geochemistry, and Wetland Processes: A Session in Honor of the Career of Donald I. Siegel”
 - 2016 GSA Fall Meeting Session entitled, “Can’t Take the Heat? Temperature as an Indicator and Tracer of Environmental Change”
 - 2016 NE GSA Spring Meeting Session entitled, “Geophysical Methods in the Hydrogeologist’s Toolbox”
 - 2015 AGU/CGU Joint Assembly Meeting Session entitled, “Some do not like it hot: Climate change impacts on the thermal and flow regimes of hydrologic systems”
 - 2014 GSA Annual Meeting Session entitled “Dynamics of Groundwater Temperature: From Recharge to Discharge Zones”
 - 2012 AGU Annual Meeting Session entitled “Groundwater-Surface Water Interactions: Dynamics across spatial and temporal scales”
 - 2011 GSA Annual Meeting Session entitled “Identification and quantification of groundwater flow using heat as a tracer”
 - 2009 GSA Annual Meeting Session entitled “Stream-Groundwater Interaction: New Understanding, Innovations and Applications at Bedform, Reach and River Network Scales”
 - 2007 GSA Annual Meeting Session entitled “Innovations and New Technologies for Measuring Surface-Ground Water Interaction”
 - 2006 GSA Annual Meeting Session entitled “Heat as a Natural Tracer in Hydrologic Systems: Current Understanding, Innovation and Application”
- Prior Service to National Professional Societies and Organizations
 - Member, O.E. Meinzer Award Committee, Hydrogeology Division, Geological Society of America, 2020
 - Member, Walter Langbein Lecturer Committee, American Geophysical Union Hydrology Section, January 2014–2016
 - Chair, Distinguished Service Award Committee, Hydrogeology Division, Geological Society of America, 2013
 - Member, Distinguished Service Award Committee, Hydrogeology Division, Geological Society of America, 2011–2013
 - Panelist, CUAHSI (Consortium of Universities for the Advancement of Hydrologic Sciences, Inc) Pathfinder Fellowship, 2010–2012
 - Advisory Board for Education and Public Outreach, CUAHSI (Consortium of Universities for the Advancement of Hydrologic Sciences, Inc), 2009
- Board Member, Upstate Freshwater Institute, 2013–2019
- Member, External Review Committee, Montclair State University Geology Department, 2014
- Member, Syracuse Center of Excellence Symposium Planning Committee, 2013
- Treasurer, Central New York Association of Professional Geologists, 2006–2009
- Secretary, Sigma Xi – Syracuse Chapter, 2006–2009
- Member, Syracuse Center of Excellence in Energy and Environmental Systems Research and Development Agenda Subcommittee for Water, 2008
- Board Member, Central New York Association of Professional Geologists, 2006–2008
- Member of: Geological Society of America, American Geophysical Union

Service at the University and College Level

- Program Director, EMPOWER NRT Program, Syracuse University, 2015–2019
- Member, Dean Search Committee, College of Engineering & Computer Science, Syracuse University, 2019
- Promotion & Tenure Case Review, Special Committee for the Provost, Syracuse University, 2017–2019

- Chair, Faculty Leadership Development Committee, WiSE (Women in Science and Engineering), Syracuse University, 2018 – 2019
- Faculty Advisor, WiSE-FPP program (Women in Science and Engineering, Future Professionals Program), Syracuse University, 2011-2017
- Member, Search Committee for Science Communication Faculty Position, Newhouse School, Syracuse University, 2016
- First-year Forum Leader, Syracuse University, Fall 2016
- Advisory Board Member, Provost's Water Initiative, Syracuse University, 2012-2017
- Faculty Advisory Board Member, Louis Stokes Alliance for Minority Participation (LSAMP), Syracuse University, 2014-2019
- Member, Dean Search Committee, College of Engineering & Computer Science, Syracuse University, 2014-2015
- Scholarship and Fellowship Advisor, Earth Sciences, Syracuse University, 2012-2015
- Primary Faculty Liaison for Earth Sciences, Future Professoriate Program (FPP), Syracuse University, 2012-2015
- Member, Search Committee for Senior Joint Hire in Water Sustainability, College of Arts and Sciences and College of Engineering and Computer Science, Syracuse University, 2011
- Lower Division Undergraduate Student Advisor, College of Arts and Sciences, Syracuse University (15 advisees), 2010-2012
- Panelist, Norma Slepceky Award (for Outstanding Research by Undergraduate Women in STEM), Syracuse University, 2009
- Secretary of the Faculty, Faculty Governance, SUNY ESF, 2007-2008
- Member, Committee on Instruction, Faculty Governance, SUNY ESF, 2006-2007

Service at the Department Level

- Chair, Department of Earth Sciences, Syracuse University, 2017-2019
- Associate Chair, Department of Earth Sciences, Syracuse University, 2016-2017
- Strategic Planning in Department of Earth Sciences, Syracuse University, 2016 (led development and writing of Department Strategic Plan for 2017-2022)
- Chair, Mentoring Committee for Christa Kelleher, Department of Earth Sciences, Syracuse University, 2016-2017
- Chair, 3-year Review Committee for Department Chair, Department of Earth Sciences, Syracuse University, 2016
- Chair, Hydrogeology/Hydrology Joint Faculty Position Search Committee, Earth Sciences & Civil/Environmental Engineering, Syracuse University, 2014-2015
- Director of Graduate Studies, Department of Earth Sciences, Syracuse University, 2011-2015
- Member, Curriculum Committee, Department of Earth Sciences, Syracuse University, 2011-2015
- Member, Mentoring Committee for Zunli Lu, Department of Earth Sciences, Syracuse University, 2013-2014
- Chair, Department Chair Search Committee, Department of Earth Sciences, Syracuse University, 2013
- Member, Aqueous Geochemistry Faculty Search Committee, Earth Sciences, Syracuse University, 2010
- Member, Department Chair Search Committee, Earth Sciences, Syracuse University, 2010
- Seminar Coordinator, K. Douglas Nelson Lecture Series, Department of Earth Sciences, Syracuse University, 2009-2010
- Member, Graduate Education Committee, Department of Forest and Natural Resources Management at SUNY ESF, 2006-2008
- Chair, Farnsworth Award Committee, Department of Forest and Natural Resources Management, SUNY ESF, 2007
- Member, Watershed Management Faculty Search Committee, Department of Forest and Natural Resources Management, SUNY ESF, 2006

INVITED LECTURES

Central New York Association of Professional Geologists Lecture Series, December 16, 2020
 University of Minnesota-Twin Cities, Department of Earth Sciences, Minneapolis, Minnesota, March 14, 2019
 Woo Lecture in Hydrology, Canadian Geophysical Union Meeting, Niagara Falls, Ontario, June 2018
 Joint Technical Conference of CNY Air & Waste Management Association and American Industrial Hygiene Association, Skaneateles, New York, March 27, 2018
 Duke University, Division of Earth & Ocean Sciences, Durham, North Carolina, March 31, 2017
 University of North Carolina – Chapel Hill, Department of Geological Sciences, Chapel Hill, North Carolina, March 30, 2017
 Lafayette College, Department of Geology and Environmental Sciences, Easton, Pennsylvania, November 4, 2016
 USGS National Groundwater Workshop, Reno, Nevada, September 1, 2016 (Plenary session speaker)

Michigan State University, Department of Geological Sciences, September 25, 2015
 University of Rochester, Department of Earth and Environmental Sciences Seminar, November 7, 2014
 Hudson Valley-Mohawk Professional Geologists Association, May 21, 2014
 Expanding Your Horizons (EYH) Keynote Speaker (an annual one-day conference for 7th-9th grade girls), Cornell University, April 12, 2014
 University of Massachusetts-Amherst, Department of Geosciences Seminar, October 26, 2012
 Central New York Association of Professional Geologists Lecture Series, November 15, 2012
 McGill University Lecture Series in Department of Geology, Montreal, Quebec, Canada, November 4, 2011
 University at Buffalo, Department of Geology Pegrum Lecture Series, Buffalo, NY, September 22, 2011
 Cornell University, Soil and Water Lab Speaker Series, Ithaca, NY, March 11, 2011
 Desert Research Institute, Spring 2010 Colloquium Series, Reno, Nevada, March 26, 2010
 Lehigh University, Department of Earth and Environmental Sciences, Bethlehem, PA, January 29, 2010
 Lafayette College, Geology Department Seminar Series, Easton, PA, February 15, 2008
 NSF-sponsored workshop entitled “Generalizing Riparian Zone Function at the Landscape Scale: New Tools, New Approaches, Gaps in Knowledge and Future Research Directions,” Indianapolis, IN, January 28, 2008
 American Water Resources Association, Student Symposium, April 19, 2007
 Alfred University, Environmental Studies Department Seminar Series, Alfred, NY, March 16, 2007
 Central New York Association of Professional Geologists Lecture Series, October 19, 2006

INVITED CONFERENCE PRESENTATIONS (n=17)

(*graduate/postdoc or **undergraduate student author directly supervised by Lautz)

- Lautz, LK.** 2020. Frontiers of research, discovery, and societal impact in the hydrologic sciences (**INVITED**). Proceedings of the Geological Society of America Annual Meeting, October 26-30, 2020: Virtual Conference.
- *Campbell, A, **LK Lautz.** 2019. Methane emissions over the Marcellus play due to domestic groundwater production (**INVITED**). Proceedings of the American Geophysical Union Annual meeting, December 9-13, 2019: San Francisco, CA.
- *Glas, R, **LK Lautz,** JM McKenzie, R Moucha, B Mark. 2018. Integrating multiple geophysical methods to understand groundwater storage and discharge in tropical proglacial catchments (**INVITED**). 24th European Meeting of Environmental and Engineering Geophysics, Near Surface Geoscience Conference & Exhibition, September 9-13, 2018: Porto, Portugal.
- Lautz, LK,** *EA Baker, JM McKenzie. 2018. Illuminating the unseen: resolving how reflection impacts stream temperature observations from time-lapse, ground-based IR cameras (**INVITED**). Proceedings of the Canadian Geophysical Union Annual Scientific Meeting, 2018: Niagara Falls, Ontario.
- McCay, DH, **LK Lautz (presenter),** CT Driscoll, RL Glas, KM Gutches, AJ Johnson, G Millard. 2017. Integrating professional development into STEM graduate programs: student-centered programs for career preparation (**INVITED**). Proceedings of the American Geophysical Union Annual meeting, December 11-15, 2017: New Orleans, LA.
- Mark, BG, JM McKenzie, M Baraer, A Fernandez, P Lagos, **LK Lautz,** M Carey and J Bury, 2016. Glacier loss and emerging hydrologic vulnerabilities in the tropical Peruvian Andes (**INVITED**). International Symposium on Glaciers and Mountain Ecosystems, Huaraz, Peru, 10-13 August.
- Briggs, MA, FD Day-Lewis, **LK Lautz,** JW Lane. 2016. Spatiotemporal sensing of groundwater/surface-water exchange and chemical dynamics in rivers from the pore to the reach scale (**INVITED**). Materials Research Society Fall Meeting, November 27-December 2, 2016: Boston, Massachusetts.
- Lautz, LK,** *SH Ledford. 2015. Surface water-groundwater interactions buffer seasonal changes in urban stream water quality (**INVITED**). Proceedings of the Joint Assembly of the American Geophysical Union Meeting, May 3-7, 2015: Montreal, Canada.
- McKenzie, JM, *RP Gordon, D Cairns, **LK Lautz,** JM Byrne, BG Mark. 2015. Groundwater – Surface Water Interactions in Mountain Environments: Comprehending Heterogeneity (**INVITED**). Proceedings of the Joint Assembly of the American Geophysical Union Meeting, May 3-7, 2015: Montreal, Canada.
- Lautz, LK,** *RP Gordon, *TL Daniluk, *MA Zimmer, TE Endreny, K McGrath. 2014. Restoring hydrological and biogeochemical ecosystem services in streams: how can science inform practice? (**INVITED**). Proceedings of the American Geophysical Union Annual Meeting, December 15-19, 2014: San Francisco, California.
- Lautz, LK,** *MA Briggs, *RP Gordon, *DJ Irvine, JM McKenzie, *R Ribaud, **DK Hare. 2014. Heat tracing as a tool for locating and quantifying hydrological hot spots and hot moments that impact surface and groundwater quality (**INVITED**). Proceedings of the American Geophysical Union Annual Meeting, December 15-19, 2014: San Francisco, California.

- McKenzie, JM, *RP Gordon, M Baraer, **LK Lautz**, BG Mark, O Wigmore, D Chavez, C Aubry-Wake. 2014. Water resources and groundwater in a glaciated Andean watershed (Cordillera Blanca, Peru) (**INVITED**). Proceedings of the American Geophysical Union Annual Meeting, December 15-19, 2014: San Francisco, California.
- Briggs, MA, **LK Lautz**, SF Buckley, JW Lane. 2014. Practical limitations on the use of diurnal temperature signals to quantify groundwater upwelling (**INVITED**). Proceedings of the Geological Society of America Annual Meeting, October 19-22, 2014: Vancouver, British Columbia, Canada.
- Lautz, LK**, *RP Gordon, *M Zimmer, *TL Daniluk. 2014. Impacts of stream restoration on surface water-groundwater interactions, streambed redox conditions, and nutrient dynamics (**INVITED**). Proceedings of the Geological Society of America Annual Meeting, October 19-22, 2014: Vancouver, British Columbia, Canada.
- Lautz, LK**, GD Hoke, Z Lu, DI Siegel, *K Christian. 2014. Fingerprinting sources of salinity in shallow groundwater prior to hydraulic fracturing: statistical model development and application (**INVITED**). Proceedings of the American Chemical Society Annual Meeting. August 10-14, 2014: San Francisco, California.
- Lautz, LK**. 2012. Heat tracing of temporal changes in vertical flux through streambed sediments (**INVITED**). Proceedings of the Geological Society of America Annual Meeting, November 4-7, 2012: Charlotte, North Carolina.
- *MA Briggs, **LK Lautz**, *RP Gordon, JK McKenzie, RA Gonzalez. 2011. Using multiple natural and injected tracers to evaluate spatial and temporal patterns of hyporheic flux and biogeochemistry (**INVITED**). Proceedings of the American Geophysical Union Annual Meeting, December 5-9, 2011: San Francisco, California.
- Lautz, LK**, *RM Fanelli, *KA Hubbard, NT Kranes, DI Siegel. 2010. Resolution versus relevance: challenges in field investigations of stream-groundwater interactions (**INVITED**). Proceedings of the American Geophysical Union Annual Meeting, December 13-17, 2010: San Francisco, California.
- Lautz, LK**, *MA Briggs, *RE Ribaud. 2010. Heat and geochemical tracing of contaminated groundwater discharge to streams at various spatial and temporal scales (**INVITED**). Proceedings of the American Geophysical Union Annual Meeting, December 13-17, 2010: San Francisco, California.
- Lautz, L**, *R Fanelli, *R Gordon, *T Daniluk. 2010. Spatial patterns of water, heat and solute fluxes through the hyporheic zone at stream restoration sites (**INVITED**). Proceedings of the European Geosciences Union General Assembly, May 3-7, 2010: Vienna, Austria.
- Lautz, LK**, *RM Fanelli. 2007. The influence of small dams on streambed morphology, sediment distribution and fluxes of water, heat and solutes between surface and ground water (**INVITED**). Proceedings of the American Geophysical Union Annual Meeting, December 10-14, 2007: San Francisco, California.
- Lautz, LK**, *RM Fanelli, NT Kranes, DI Siegel. 2007. Sediment distribution around debris dams: Impacts on streambed hydrology, biogeochemistry and temperature dynamics in small streams (**INVITED**). Proceedings of the Geological Society of America Annual Meeting, October 28-31, 2007: Denver, Colorado.

OTHER CONFERENCE PRESENTATIONS

(*graduate/postdoc or **undergraduate student author directly supervised by Lautz)

2019

- *Davis, JMS, **LK Lautz**, C Kelleher, *C Russoniello, P Vidon. 2019. Assessing the effects of beaver dam analogues on channel morphology using high-resolution imagery from Unoccupied Aerial Vehicles (UAVs). Proceedings of the American Geophysical Union Annual meeting, December 9-13, 2019: San Francisco, CA.
- *Beltran, J, **LK Lautz**, *Slosson, JR. 2019. The impact of stream-groundwater exchange on seasonal nitrate uptake dynamics in an urban stream. Proceedings of the American Geophysical Union Annual meeting, December 9-13, 2019: San Francisco, CA.
- *Slosson, JR, **LK Lautz**, *J Beltran. 2019. Groundwater storage of seasonally-applied road salt in an urban watershed. Proceedings of the American Geophysical Union Annual meeting, December 9-13, 2019: San Francisco, CA.
- *Russoniello, CJ, **LK Lautz**. 2019. The impact of beaver dam analogs on transient bank storage and dry season flow in the US Mountain West. Proceedings of the American Geophysical Union Annual meeting, December 9-13, 2019: San Francisco, CA.
- *Campbell, A, **LK Lautz**. 2019. Methane emissions from groundwater production over the Marcellus play. Proceedings of the Geological Society of America's Annual Meeting, September 22-25, 2019: Phoenix, AZ.

2018

- Lautz, LK**, *N Chien, *A Campbell. 2018. Sources of salinity in domestic wells correlate with the natural occurrence of methane in the Marcellus Shale region. Proceedings of the American Geophysical Union Annual meeting, December 10-14, 2018: Washington, DC.
- *Campbell, A, **LK Lautz**, GD Hoke. 2018. Assessing the natural variability of dissolved methane in groundwater over the Marcellus Shale in New York: Results from a year of sampling of domestic groundwater wells. Proceedings of the American Geophysical Union Annual meeting, December 10-14, 2018: Washington, DC.

- *Baker, EA, **LK Lautz**, JM McKenzie. 2018. Improving the accuracy of stream temperatures acquired through ground-based time-lapse thermal imagery. Proceedings of the American Geophysical Union Annual meeting, December 10-14, 2018: Washington, DC.
- *Russoniello, CJ, **LK Lautz, LK**, J Fawcett, RG Nair, AA Bhosale, A Bhatt. 2018. Teaching hydrogeology with a Simple Online Groundwater Model (SOGWaM). Proceedings of the American Geophysical Union Annual meeting, December 10-14, 2018: Washington, DC.
- Sessanna, RJ, C Kelleher, **Lautz, LK**. 2018. Monitoring algae occurrence as an indicator for stream water health using UAS-captured imagery along a small urban stream. Proceedings of the American Geophysical Union Annual meeting, December 10-14, 2018: Washington, DC.
- Millard, G, *A Campbell, F Hategekimana, *JR Slosson, SBH Millard, Y Yang, E Habimana, CA Scholz, CK Junium, **Lautz, LK**, CT Driscoll, A Nsabimana, A Nyiragatare, H Valens. 2018. Leveraging established research sites for developing multinational field methods course. Proceedings of the American Geophysical Union Annual meeting, December 10-14, 2018: Washington, DC.
- *Campbell, A, G Millard, N Umutoniwase, *JR Slosson, SBH Millard, Y Yange, E Habimana, CA Scholz, CK Junium, **Lautz, LK**, CT Driscoll, A Nsabimana, A Nyiragatare, H Valens. 2018. Collaborative international geoscience field course builds transferable skills and broader global perspective. Proceedings of the American Geophysical Union Annual meeting, December 10-14, 2018: Washington, DC.
- *Russoniello, CJ, **Lautz, LK**. 2018. Paying the PIED Piper: Visualization of large geochemical datasets using new approaches with Piper Diagrams. Proceedings of the Canadian Geophysical Union Annual Scientific Meeting, 2018: Niagara Falls, Ontario.
- Gutchess, KM, L Jin, JJJ Ledesma, J Crossman, C Kelleher, **LK Lautz**, Zunli Lu. 2018. A case of cautious optimism: INCA simulations suggest climate change drives future reductions in surface water chloride in New York State. Proceedings of the Canadian Geophysical Union Annual Scientific Meeting, 2018: Niagara Falls, Ontario.
- Gutchess, KM, L Jin, C Kelleher, SH Ledford, **LK Lautz**, Z Lu. 2018. Modeling future nitrogen dynamics in Chesapeake Bay headwaters. Proceedings of the Northeastern Geological Society of America's Meeting, March, 2018: Burlington, VT.
- *Glas, RL, **LK Lautz**, JM McKenzie, R Moucha, BG Mark. 2018. Integrating multiple geophysical methods to understand groundwater storage and discharge in tropical proglacial catchments. Proceedings of the Symposium on the Application of Geophysics to Engineering and Environmental Problems (SAGEEP), March 25-29, 2018: Nashville, TN.

2017

- *Glas, RL, **LK Lautz**, JM McKenzie, R Moucha, BG Mark. 2017. Proglacial hydrogeology of the Cordillera Blanca (Peru): Integrating field observations with hydrogeophysical inversions to inform groundwater flow simulations and conceptual models. Proceedings of the American Geophysical Union Annual meeting, December 11-15, 2017: New Orleans, LA.
- McCay, DH, P Fiorenza, **LK Lautz**. 2017. Education model program on water-energy research: a new STEM graduate program from development through evaluation. Proceedings of the American Geophysical Union Annual meeting, December 11-15, 2017: New Orleans, LA.
- *Campbell, A, **LK Lautz**, GD Hoke. 2017. Assessing how water type, climate, and landscape position correlated with variability of methane in shallow groundwater in the Marcellus region. Proceedings of the American Geophysical Union Annual meeting, December 11-15, 2017: New Orleans, LA.
- Lautz, LK**, DI Siegel, GD Hoke, Z Lu. 2017. Diving into the deep end: Reflections on Don Siegel's research, the debate around hydraulic fracturing of the Marcellus, and methane in groundwater. Proceedings of the Geological Society of America's Annual Meeting, October 22-25, 2017: Seattle, Washington.
- *Glas, RL, DA Burns, **LK Lautz**. 2017. Changing streamflow regimes in New York State: Trends, patterns, and attribution. Proceedings of the Geological Society of America's Annual Meeting, October 22-25, 2017: Seattle, Washington.
- Gutchess, KM, L Jin, JJJ Ledesma, J Crossman, C Kelleher, **LK Lautz**, Z Lu. 2017. Long-term INCA simulations favor climatic over anthropogenic impacts on a reduction of stream water salinity in New York State. Proceedings of the Geological Society of America's Annual Meeting, October 22-25, 2017: Seattle, Washington.
- McCay, DH, **LK Lautz**, CT Driscoll, TF Kahan, CA Scholz, D Torrance, CE Johnson, CK Junium, DI Siegel, PJ Wilcoxon, P Fiorenza. 2017. Career development at the water-energy nexus: preparing graduates for multiple career paths. Proceedings of the Geological Society of America's Annual Meeting, October 22-25, 2017: Seattle, Washington.

- *Baker, EA, **LK Lautz**, JM McKenzie, BG Mark. 2017. Methods for correcting ground-based time-lapse infrared imagery. Proceedings of the Geological Society of America's Annual Meeting, October 22-25, 2017: Seattle, Washington.
- Garvin, SR, KM Gutchess, W Lu, WM Kappel, **LK Lautz**, Z Lu. 2017. Groundwater iodine across New York State: Potential linkage to methane? Proceedings of the Geological Society of America's Annual Meeting, October 22-25, 2017: Seattle, Washington.
- *Chien, NP, **LK Lautz**. 2017. Linear discriminant analysis as a regional screening tool to fingerprint sources of chloride contamination in groundwater. Proceedings of the Geological Society of America's Annual Meeting, October 22-25, 2017: Seattle, Washington.
- *Schulz, A, **LK Lautz**, GD Hoke, *NP Chien, *CS Burgess. 2017. Temporal variability of naturally occurring methane in shallow groundwater wells in the Marcellus Shale region. Proceedings of the Geological Society of America's Annual Meeting, October 22-25, 2017: Seattle, Washington.
- *Baker, EA, **LK Lautz**, C Kelleher, JM McKenzie. 2017. The importance of diurnal fluctuations in stream discharge for determining groundwater inflow. Gordon Research Conference on Catchment Science: Interactions of Hydrology, Biology & Geochemistry, June 25-30, 2017: Lewiston, Maine.
- *Chien, NP, **LK Lautz**, GD Hoke, Z Lu. 2017. Validating a discriminant analysis model used to distinguish salinity contamination from deicers vs produced water. Proceedings of the National Groundwater Association conference on Groundwater Quality and Unconventional Oil and Gas Development: Current Understanding and Science Needs, April 25-26, 2017: Columbus, OH.
- *Glas, RL, **LK Lautz**, R Moucha, JM McKenzie, B Mark. Alpine groundwater storage in the tropics: using hydrogeophysics to constrain boundary conditions for future groundwater models in the Cordillera Blanca, Peru. Symposium on the Application of Geophysics to Engineering and Environmental Problems, March 19-23, 2017: Denver, CO.
- Gutchess, KM, S Garvin, L Jin, W Lu, Z Levy, **LK Lautz**, Z Lu. 2017. Evaluating the natural transport pathways of iodine in headwater catchments. Proceedings of the Northeastern Geological Society of America Meeting, March 19-21, 2017: Pittsburg, PA.

2016

- *Glas, RL, **LK Lautz**, JM McKenzie, C Aubry-Wake, *EA Baker, L Somers, B Mark, O Wigmore. 2016. Integrating multiple geophysical methods to quantify alpine groundwater- surface water interactions: Cordillera Blanca, Peru. Proceedings of the American Geophysical Union Annual meeting, December 12-16, 2016: San Francisco, CA.
- *Baker, EA, **LK Lautz**, JM McKenzie, *AM Glose, C Kelleher. 2016. The Effect of Channel Geometry and Diurnal Discharge Fluctuations on Modeled Stream Temperatures. Proceedings of the American Geophysical Union Annual meeting, December 12-16, 2016: San Francisco, CA.
- *Ledford, SH, **LK Lautz**, P Vidon, JC Stella. 2016. Impact of stream metabolism on nitrate concentrations in an urban stream. Proceedings of the American Geophysical Union Annual meeting, December 12-16, 2016: San Francisco, CA.
- Lautz, LK**, *K Christian, GD Hoke, Z Lu, DI Siegel, J Kessler. 2016. Development of empirical models of natural methane occurrence in shallow groundwater overlying the Marcellus shale using machine learning methods. Proceedings of the Geological Society of America's Annual Meeting, September 25-28, 2016: Denver, Colorado.
- **Burgess, CS, **LK Lautz**, *NP Chien, GD Hoke, M Leonte, J Kessler, *KM Christian, DI Siegel, Z Lu. 2016. Temporal pattern of naturally occurring methane levels in domestic water wells, overlying the Marcellus Shale in New York. Proceedings of the Geological Society of America's Annual Meeting, September 25-28, 2016: Denver, Colorado.
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