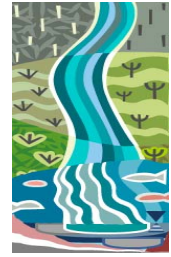




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RESEARCH TOPICS

Hydrologic processes of the Earth's Critical Zone: Water quality and resources; Groundwater – surface water interactions; Hydrological and biogeochemical responses to climate and land use change; Hydroecology – coupling of hydrology, biogeochemistry, and aquatic ecosystems; Cryosphere hydrology and biogeochemistry

EDUCATION

Ph.D. Water Resources Science (Ecosystem Informatics minor) <i>Oregon State University (Corvallis, OR)</i>	2011
M.S. Watershed Science <i>Utah State University (Logan, UT)</i>	2006
B.A. Geology <i>Colby College (Waterville, ME)</i> <i>School for Field Studies, Centre for Rainforest Studies (Australia)</i>	2000 1999

WORK AND RESEARCH EXPERIENCE

Assistant Professor – Department of Earth and Environmental Sciences <i>Michigan State University (East Lansing, MI)</i>	2013- Present
Postdoctoral Fellow – Yale School of Forestry and Environmental Studies <i>Yale University (New Haven, CT)</i>	2011-2013
Graduate Fellow – NSF IGERT: Ecosystem Informatics Graduate Research Assistant – College of Earth, Ocean, and Atmospheric Sciences & Water Resources Graduate Program <i>Oregon State University (Corvallis, OR)</i>	2006-2011
Visiting Scientist – Catchment Processes Group (6-month term) <i>National Institute for Water & Atmospheric Research (New Zealand)</i>	2010
Graduate Research Assistant – College of Natural Resources <i>Utah State University (Logan, UT)</i>	2003-2006
Hydrogeologist <i>Camp, Dresser & McKee Inc., [now CDM Smith] (Cambridge, MA)</i>	2000-2003
Visiting Scholar – Dept. of Civil & Environmental Engineering (6 month term) <i>New Jersey Institute of Technology (Newark, NJ)</i>	2000

SCHOLARLY PEER-REVIEWED PUBLICATIONS (°lab student/post doc author, **award)

29. °Abbott BW, G Gruau, **JP Zarnetske**, F Moatar, L Barbe, Z Thomas, O Fovet, T Kolbe, S Gu, AC Pierson-Wickmann, P Davy, G Pinay. (2017) Unexpected structure and synchrony of water quality in headwater stream networks. *Ecology Letters*. doi: 10.1111/ele.12897
Extensive press coverage in news outlets, including an interview on the nationally syndicated Michigan Radio “Then Environment Report.”
28. °Ruhala SS, **JP Zarnetske**, DT Long, °JA Lee-Cullin, °S Plont, and °ER Wiewiora. (2017) Exploring dissolved organic carbon cycling at the stream-groundwater interface across a third-order, lowland stream network. *Biogeochemistry*, doi.org/10.1007/s10533-017-0404-z.
27. Pavelsky, TM, and **JP Zarnetske** (2017) Declining aufeis in Arctic Alaska reflects a changing hydrologic cycle. *Geophys. Res. Lett.*, 44, doi:10.1002/2016GL072397.
Extensive press coverage in news outlets, including PBS NEWSHOUR, Scientific American, and Nature Climate Change. Selected as an American Geophysical Union featured article for 2017. Cover image and article for Geophysical Research Letters.
26. °Kurz MJ, JD Drummond, E Martí, **JP Zarnetske**, °JA Lee-Cullin, MJ Klaar, S Folegot, T Keller, AS Ward, JH Fleckenstein, T Datry, DM Hannah, and S Krause (2017) Impacts of water level on metabolism and transient storage in vegetated lowland rivers - insights from a mesocosm study. *J. Geophys. Res.* 10.1002/2016JG003695.
25. °Baranov, V, D Milosevic, MJ Kurz, **JP Zarnetske**, F Sabater, E Martí, A Robertson, °T Brandt, A Sorolla, J Lewandowski, and S Krause (2017) Helophyte impacts on the response of hyporheic invertebrate communities to inundation events in intermittent streams. *Ecohydrology*. 10.1002/eco.1857.
24. Folegot, S, °JA Lee-Cullin, J Drummond, DM Hannah, T Keller, M Klaar, MJ Kurz, E Martí, **JP Zarnetske**, and S Krause. (2017) Low flow controls on stream thermal dynamics, *Limnologica*.
23. °Ruhala, S, and **JP Zarnetske**. (2016) Using in-situ optical sensors to study dissolved organic carbon dynamics of streams and watersheds: A review. *Science of the Total Environment*. <http://dx.doi.org/10.1016/j.scitotenv.2016.09.113>.
22. Schmadel, N, A Ward, M Kurz, **JP Zarnetske**, D Hannah, T Blume, M Vieweg, P Blaen, C. Schmidt, J Knapp, M Klaar, P Romeijn, T Datry, T Keller, S Folegot, A Marruedo Arricibita, S Krause. (2016) Stream solute tracer timescales changing with discharge and reach length confound process interpretation, *Water Resour. Res.*, 52, doi:10.1002/2015WR018062.
21. Briggs, MA, FD Day-Lewis, **JP Zarnetske**, and JW Harvey. (2015) A physical explanation for the development of redox microzones in hyporheic flow. *Geophys. Res. Lett.*, 42, doi: 10.1002/2015GL064200.
20. **Zarnetske, JP**, and PL Zarnetske (2015) Strategies for creating a conspicuous, effective, and memorable poster presentation. *GSA Today*, 25(5), doi: 10.1130/GSATG228GW.1.

19. **Zarnetske, JP**, R Haggerty, and SM Wondzell (2015) Coupling multi-scale observations to evaluate hyporheic nitrate removal at the reach scale. *Freshwater Science*, 34, doi: 10.1086/680011.
18. Roley, SS, JR Griffiths, PS Levi, CJ Patrick, S Sadro, and **JP Zarnetske*** (2014) Taking the pulse of the ecosystem: progress in quantifying aquatic ecosystem health. *Limnology and Oceanography*. doi: 10.4319/ecodas.2014.978-0-9845591-4-5.101.
*co-author equal contribution; listed alphabetical after corresponding author.
17. Mazza, R, S Wondzell, **JP Zarnetske**. (2014) The stream subsurface: nitrogen cycling and the cleansing function of hyporheic zones. *Science Findings* 166. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. pp 6.
*author equal contribution; listed alphabetical after corresponding author.
16. °Yoon, HD, D Cox, D Albert, N Mori, H Smith, and **JP Zarnetske**. (2013). Ecological modeling of emergent vegetation for sustaining wetlands in high wave energy coastal environments. *Coastal Structures*, 1 & 2: 992-1001.
15. Ward, AS, MN Gooseff, TJ Voltz, M Fitzgerald, K Singha, and **JP Zarnetske** (2013) How does rapidly changing discharge during storm events affect transient storage and channel water balance in a headwater mountain stream? *Water Resour. Res.*, 49, doi:10.1002/wrcr.20434.
14. **Zarnetske, JP**, R Haggerty, SM Wondzell, V Bokil, and R González-Pinzón. (2012) Coupled transport and reaction kinetics control the nitrate source-sink function of hyporheic zones. *Water Resour. Res.*, 48, W11508, doi:10.1029/2012WR011894.
13. ****Zarnetske, JP**, R Haggerty, SM Wondzell, and MA Baker. (2011) Labile dissolved organic carbon supply controls hyporheic denitrification. *J. Geophys. Res.*, 116, G04036, doi:10.1029/2011JG001730.
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12. ****Zarnetske, JP**, R Haggerty, SM Wondzell, and MA Baker. (2011) Dynamics of nitrate production and removal as a function of residence time in the hyporheic zone. *J. Geophys. Res.*, 116, G01025, doi:10.1029/2010JG001356.
Web of Science Highly Cited Paper (paper received enough citations to place it in the top 1% of Geoscience field based on a highly cited threshold for the field and publication year); 2011 Editor's Choice, AGU Eos Research Spotlight; A Top Downloaded JGR Article
11. Argerich, A, R Haggerty, M Eugènia, S Francesc, and **JP Zarnetske**. (2011) Quantification of metabolically active transient storage (MATS) in two reaches with contrasting transient storage and ecosystem respiration. *J. Geophys. Res.*, 116, G03034, doi: 10.1029/2010JG001379.
10. Brosten, TR, JH Bradford, JP McNamara, MG Gooseff, **JP Zarnetske**, WB Bowden, and ME Johnson. (2009) Estimating 3D variation in active-layer thickness beneath arctic streams using ground-penetrating radar. *J. of Hydrology*, 373(304): 479-486, doi:10.1016/j.jhydrol.2009.05.011
9. Brosten, TR, JH Bradford, JP McNamara, MG Gooseff, **JP Zarnetske**, WB Bowden, and ME Johnson. (2009) Multi-offset GPR methods for hyporheic zone investigations. *Near Surface Geophysics*. 7(4): 247-257, doi: 10.3997/1873-0604.2008034.

8. **Zarnetske, JP**, MN Gooseff, WB Bowden, Greenwald MJ, JP McNamara, JH Bradford, and TR Brosten. (2008) Influence of morphology and permafrost dynamics on hyporheic exchange in arctic headwater streams under warming climate conditions, *Geophys. Res. Lett.*, 35, L02501, doi:10.1029/2007GL032049.
7. Crook, N, A Binley, R Knight, DA Robinson, **JP Zarnetske**, and R Haggerty. (2008) Electrical resistivity imaging of the architecture of substream sediments. *Water Resour. Res.*, 44, W00D13, doi:10.1029/2008WR006968.
6. Gooseff, MN, RA Payn, **JP Zarnetske**, WB Bowden, JP McNamara, and JH Bradford. (2008) Comparison of in-channel mobile-immobile zone exchange during instantaneous and constant-rate stream tracer additions: Implications for design and interpretation of non-conservative tracer experiments. *J. of Hydrology*, 357: 112-124, doi:10.1016/j.jhydrol.2008.05.006.
5. Payn, RA, MN Gooseff, DA Benson, OA Cirpka, **JP Zarnetske**, WB Bowden, JP McNamara, and JH Bradford. (2008) Comparison of instantaneous and constant-rate stream tracer experiments through non-parametric analysis of residence time distributions, *Water Resour. Res.*, 44, W06404, doi:10.1029/2007WR006274.
4. Greenwald, MJ, WB Bowden, MN Gooseff, **JP Zarnetske**, JP McNamara, JH Bradford, and TR Brosten (2008) Hyporheic exchange and water chemistry of two arctic tundra streams of contrasting geomorphology, *J. Geophys. Res.*, 113, G02029, doi:10.1029/2007JG000549.
3. Bowden, WB, MJ Greenwald, MN Gooseff, **JP Zarnetske**, JP McNamara, J Bradford, and T Brosten (2008) Carbon, nitrogen, and phosphorus interactions in the hyporheic zones of arctic streams draining areas of continuous permafrost, eds. DL Kane, and KM Hinkel, *Ninth International Conference on Permafrost*, Institute of Northern Engineering, 165-170.
2. **Zarnetske, JP**, MN Gooseff, WB Bowden, TR Brosten, JH Bradford, and JP McNamara. (2007) Transient storage as a function of geomorphology, discharge, and permafrost active layer conditions in Arctic tundra streams, *Water Resour. Res.*, 43, W07410, doi:10.1029/2005WR004816.
1. Brosten, TR, JH Bradford, JP McNamara, **JP Zarnetske**, MG Gooseff, and WB Bowden. (2006) Profiles of temporal thaw depths beneath two arctic stream types using ground-penetrating radar. *Permafrost Periglac. Process.*, 17: 341–355. doi: 10.1002/ppp.566.

SCHOLARLY THESES & COMMENTARIES

5. **Zarnetske JP**. (2011) Hydrophiles: Bringing students, faculty, and the public together to form a hydrocommunity. *WRGP Newsletter*. 1, 1-2.
4. **Zarnetske JP**. (2011) Dissertation: Hydrological and biogeochemical dynamics of nitrate production and removal at the stream – ground water interface. Oregon State University, Corvallis, OR, pp. 173.

3. **Zarnetske JP.** (2006) Thesis: Headwater hyporheic zones in a warming arctic climate: An assessment of hyporheic dynamics across distinct geomorphic and permafrost conditions. Utah State University, Logan, UT, pp. 138.
2. **Zarnetske JP.** (2000) Thesis: Sound attenuation in an artificial rock fracture: A study of *in situ* remediation technology enhancement. Colby College, Waterville, ME, pp. 66.
1. **Zarnetske JP.** (1999) Thesis: Performance of a mixed-species tree plantation in North Queensland, Australia. School for Field Studies, Centre for Rainforest Studies, Queensland, Australia, pp. 28.