



Jay Peter Zarnetske

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EDUCATION

- 2011** **Oregon State University**, Corvallis, OR, USA
- PhD, Water Resources Science; PhD Minor, Ecosystem Informatics
 - Committee: Roy Haggerty (chair), Steven Wondzell, Stanley Gregory, Vrushali Bokil
- 2006** **Utah State University**, Logan, UT, USA
- MS, Watershed Science.
 - Committee: Michael Gooseff (chair), Michelle A. Baker, John “Jack” Schmidt
- 2000** **Colby College**, Waterville, ME, USA
- BA, Geology with Environmental Science Concentration.
 - Advisor: Robert Nelson
- 1999** **School For Field Studies (SFS)**, Queensland, Australia
- Semester: Socio-technical effects of rainforest degradation on Queensland

WORK AND RESEARCH EXPERIENCE

- 2011-** **Postdoctoral Fellow, Yale Institute for Biospheric Studies**, Yale University, New Haven, CT
- Principle Investigator: Catchment flow regime controls on coupled carbon and nitrogen export.
- 2007-2011** **Fellow, NSF IGERT – Ecosystem Informatics**, Oregon State University (OSU), Corvallis, OR
- Research & Training: Ecosystem Informatics is an emerging field that integrates ecosystem science, computer science, and mathematics through interdisciplinary team-based research.
- 2010** **Visiting Scientist – Catchment Processes Group**, National Institute for Water and Atmospheric Research (NIWA), Christchurch, New Zealand
- Research: Characterizing ecological flow regimes and the role of ground water-surface water interactions of intermittent and gaining streams of the Canterbury Plains, New Zealand.
- 2006-2007** **Graduate Teaching & Research Assistant**, OSU, Corvallis, OR
- Teaching: Assistant instructor for undergraduate introductory Environmental Science classes.
 - Research: Groundwater-surface water ecotones; stream-nutrient dynamics; flow and transport in the hyporheic zone; hydrogeophysics; transport modeling; stable isotope tracer tests.
- 2003-2006** **Graduate Research Assistant**, Utah State University (USU), Logan, UT
- Research: Groundwater-surface water interactions; water flow and nutrient transport in the streams; modeling; tracer tests; climate change impacts on arctic hydrology and permafrost.
- 2000-2003** **Hydrogeologist**, Camp, Dresser & McKee Inc. (CDM), Cambridge, MA
- Specialized in hydrogeological and hazardous waste investigations; managed projects totaling over \$350,000; proposal development leading to over \$1,000,000 in work for CDM.
- 2000** **Visiting Scholar**, New Jersey Institute of Technology (NJIT), Newark, NJ
- Worked with NJIT research team to enhance the technology of contaminant removal in pneumatically fractured geologic formations through the use of ultrasonic energy.

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PAPERS PUBLISHED OR IN REVIEW

1. **Zarnetske, JP**, R Haggerty, SM Wondzell, MA Baker. (*conditionally accepted*). Labile dissolved organic carbon supply controls hyporheic denitrification. *J. Geophys. Res.*
2. **Zarnetske, JP**, R Haggerty, SM Wondzell, 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. ***2011 Editors Choice for AGU Research Spotlight***
3. Argerich, A, R Haggerty, M Eugenia, 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.
4. Yoon, H.D., D.T. Cox, D. Albert, N. Mori, H. Smith, **JP Zarnetske** (2011). Ecological modeling of emergent vegetation for sustaining wetlands in high wave energy coastal environments, *Proceedings of the ASCE: Coastal Structures, 2011*.
5. 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*.
6. 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.
7. **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.
8. 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.
9. 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.
10. 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.
11. 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.
12. 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.
13. **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.
14. 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 and Periglacial Processes*, 17, 341-355.

MANUSCRIPTS IN PREPARATION

1. Meriano M, M Srinivasan, **JP Zarnetske**, and D Thomas. A reach-scale perspective of surface-groundwater exchanges in a lowland stream, Canterbury Plains, South Island, New Zealand

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2. **Zarnetske, JP**, R Haggerty, SM Wondzell, and MA Baker. The role of hyporheic denitrification at the reach scale in an upland agricultural stream.
3. **Zarnetske, JP**, R Haggerty, SM Wondzell, V Bokil, and R González-Pinzón. Coupling hyporheic nitrification-denitrification: Evaluating net nitrate source-sink dynamics as a function of transport and reaction kinetics.
4. **Zarnetske, JP**, and WT Frueh. Water connects a university community: Bringing “hydrophiles” together.

SCHOLARLY THESES & EDITORIAL PIECES

1. **Zarnetske, JP**, and PL Zarnetske (*in review*). Creating and delivering a successful scientific poster presentation.
2. **Zarnetske JP**. (2011) Hydrophiles: Bringing students, faculty, and the public together to form a hydro-community. *WRGP Newsletter*. 1, 1-2.
3. **Zarnetske JP**. (2006) Thesis: Headwater Hyporheic Zones in a Warming Arctic Climate: An Assessment of Hyporheic Dynamics Across Distinct Geomorphic and Permafrost Conditions. Masters Thesis, Utah State University, Logan, UT. pp. 138.
4. **Zarnetske JP**. (2000) Sound Attenuation in an Artificial Rock Fracture: A Study of *In Situ* Remediation Technology Enhancement. Senior Thesis, Colby College, Waterville, ME. pp. 66.
5. **Zarnetske JP**. (1999) Performance of a Mixed-Species Tree Plantation in North Queensland, Australia. Thesis, SFS, Centre for Rainforest Studies, Queensland, Australia. pp. 28.

RESEARCH GRANTS & FELLOWSHIPS (academic only; private contracts not included)

RESEARCH GRANTS

- Identifying environmental flows and ground water – surface water connectivity in a strongly gaining stream environment, Canterbury Plains, New Zealand. NSF IGERT and National Institute for Water and Atmospheric Research, Inc. (New Zealand), (2010) \$13,000
- Isotope tracing to illuminate mechanisms and improve modeling of surface - ground water exchange controls on stream nitrogen. North American Benthological Society, (2010) \$1,000
- Toward robust estimates of stream – ground water exchange: Innovative hyporheic geophysics and transport modeling of a key nutrient. Geological Society of America, (2009) \$1,930
- Ground water - surface water exchange controls nitrogen export from headwater streams in Oregon, USA. United States Geological Survey, (2008) \$10,000

FELLOWSHIPS AND PRIZES

- Gaylord Donnelley Environmental Postdoctoral Fellowship, Yale (2011-2013) \$90,000
- NSF IGERT Graduate Fellowship, Ecosystem Informatics, OSU (2008-2011) \$116,650
- Water Resources Travel Grant, OSU (2011) \$700
- Consortium of Univ. for the Advancement of Hydrologic Science, Inc. Travel Grant (2010) \$500
- Kenneth Williamson Water Prize, OSU (2009) \$500
- OSU Water Resources Travel Grant, OSU (2009) \$880
- American Association for the Advancement of Science Travel Grant (2009) \$990
- OSU Water Resources Alumni Prize, OSU (2008) \$500
- Denny Tower Equipment Grant, OSU (2008) \$2,200
- Outstanding Performance Recognition Prize, CDM (2002) \$2,000
- Team Outstanding Performance Recognition Prize, CDM (2002) \$1,000
- Geology Alumni Prize, Colby College (2000) \$250
- Edith Craig Reynolds Scholarship, New York State (1996) \$2,750

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HONORS AND RECOGNITION (* denotes academic, ° denotes teaching and service)

- *NSF IGERT Program Featured Researcher & Trainee, *www.IGERT.org* (2011)
- *North American Benthological Society Endowment Award (2010)
- •°University Club Foundation Graduate Award, Finalist (2010) – one of three top OSU graduate students
- •°Kenneth Williamson Water Award, OSU (2009) - for academic excellence and leadership in water research
- *OSU Featured Researcher, *H₂OSU News* (March 2009)
- * American Association for the Advancement of Science Excellence in Science Award (2008)
- *Outstanding Presentation Awards:
 - *AGU Annual Meeting*: Outstanding Student Paper Award in Hydrology (2008 & 2009)
 - *Water Resources Graduate Program Meeting*, OSU (2008 & 2009)
- ° OSU Water Resources Alumni Prize, OSU (2008) - for leadership and service to water-community
- °Outstanding Performance Recognition Award (OPRA), CDM (2002) – highest CDM recognition award
- °Team OPRA, CDM (2003) - for team leadership role in ExxonMobil Corporation Remediation Project
- *Geology Alumni Award, Colby College (2000) - for overall academic achievement, development, and research
- *Distinction in Geology Curriculum, Colby College (2000)
- °Edith Craig Reynolds Award – for highest standard of citizenship demonstrated by a high school student

TEACHING EXPERIENCE

2006-2007 Graduate Teaching Instructor

- Introductory Geology “The Solid Earth” (OSU, GEO101, 3 section, 86 undergraduate students)
- Introductory Earth Surface Processes & Hydrology “The Surface of the Earth” (OSU, GEO102, 3 sections, 81 undergraduate students)

2005-2010 Guest Lecturer

- Ecosystem Informatics Colloquium (OSU, GEO507, graduate level), OSU, Fall 2009, 2010
- Hydrogeology (OSU, GEO487, undergrad level), OSU, Fall 2009, 2010
- Computational Methods in Environmental Science (OSU, GEO499, undergrad level), Fall 2010
- Geoscience Communication and Professionalism (OSU, GEO518, graduate level), Winter 2009
- Hillslope and Landscape Geomorphology (USU, AWER6160, graduate level), Fall 2005

2006-2011 Mentoring and Pedagogy Training

- Co-founder of the OSU Water Resource Graduate Mentoring Program, 2009-2011
 - To date: serving as mentor to 21 graduate student protégés
- Undergraduate researcher mentoring
 - Co-mentor: 2 students (Marc Nabelek, Whitman College, 2009; Sean Kim, OSU, 2010)
 - Supervised technicians: 3 students (Ken Hill, USU; Vincent Adams, OSU; Sarah Baxter, OSU)
- Peer Skills Instructor and Mentor for Junior Staff, CDM, 2001-2003
- Pedagogy Coursework:
 - “The Future Professoriate” (OSU course, FE607)
 - “Success in the College Classroom” (OSU course, MB699)
 - “Scientific Teaching and Laboratory Design” (OSU course, Z599)
 - “Discovering Your Teaching Philosophy” (OSU course, Center for Teaching & Learning)

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PROFESSIONAL SERVICE AND OUTREACH

- Journal Reviewer:
 - *Journal of Applied Ecology*,
 - *Geophysical Research Letters*,
 - *Water Resources Research*,
 - *Journal of Geophysical Research – Biogeosciences*,
 - *Hydrological Processes*,
 - *Ninth International Conference on Permafrost*
- Hydrophiles - OSU chapter of the AWRA and AIH.
 - President (2009 - 2011)
 - Vice President: Hydrophiles (2007 - 2009)
- OSU Water Resources Graduate Program Mentoring Program, Co-founder and mentor (2009 - 2011)
- Bargaining Team Chair: OSU Coalition of Graduate Employees (2007-2009) - bargained to secure improved health care, pay, and work place standards on behalf of all OSU graduate employees
- DaVinci Days Festival Volunteer, Geoscience Booth (2007-2010) – educational outreach activities with diverse audiences, including demonstrations, experiments, and interpretive games (participants >1000/year)
- Convener:
 - Biogeosciences Session for American Geophysical Union Annual Meeting, San Francisco, CA (2011)
 - Special Session for the NABS/ASLO Annual Meeting, Santa Fe, NM (2010)
 - Spring Water Seminar Series, OSU (2007 - 2009)
 - Annual Ecosystem Informatics Symposium, OSU (2009)
 - Ecology Center Seminar, USU, Physical-systems Chair: (2005 - 2006)
- Graduate Student Representative: Department of Watershed Sciences, USU (2004 - 2006)
- Graduate Student Senate Representative: College of Natural Resources, USU (2004 - 2006)
- Peer Skills Instructor and Evaluator, CDM (2002 - 2003)

ORGANIZATION AFFILIATIONS

- NSF Long-term Ecological Research (LTER) Network Sites:
 - Andrews LTER: H.J. Andrews Experimental Forest, Blue River, OR, USA
 - Arctic LTER: Toolik Arctic Research Station, North Slope, AK, USA
- Scientific Organization Membership:
 - American Geophysical Union (AGU), Geological Society of America (GSA), North American Benthological Society (NABS), American Society for Limnology and Oceanography (ASLO) American Association for the Advancement of Science (AAAS), Hydrophiles – OSU Chapter, American Water Resources Association (AWRA) and American Institute of Hydrology (AIH), Permafrost Young Researchers Network (PYRN), Hyporheic Network (HN), Women in Science (WIS)

ADDITIONAL TRAINING AND WORKSHOPS

- NSF Early-career workshop: “Navigation Skills and Proposal Development for NSF” (2010)
- Council on Undergraduate Research (CUR) workshop: “How to Get a Research Program Started” (2009)
- NSF & AAAS workshop: “Communicating Science” (2009)
- CUAHSI Isotope Hydrology & Biogeochemistry Workshop (2009)
- OSHA 40 hr HAZWOPER and First Aid Certified (current)
- SCUBA certified (current)

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PROFESSIONAL PRESENTATIONS (°° undergraduate coauthor, ** award received)

INVITED

1. **Zarnetske, JP**, R Haggerty, SM Wondzell, and MA Baker. (2010). Controls on Hyporheic Nitrate Removal: Assessing Transport and Substrate Limitations with ¹⁵N Tracer Studies. AGU Fall Meeting, San Francisco, CA.
2. **Zarnetske, JP**. (2010) Surface – Ground Water Exchange Controls on Stream Nitrate. Univ. Canterbury, Freshwater Ecology Seminar, Christchurch, New Zealand.
3. **Zarnetske, JP**. (2010) Characterizing Surface – Ground Water Exchange Controls on Solute Transport and Stream Nitrate. Nation Institute of Watershed and Atmospheric Research, Christchurch, New Zealand.
4. **Zarnetske, JP**, Haggerty R, Wondzell SM, MA Baker. (2009) Mechanistic Characterizations of Surface – Ground Water Exchange Controls on Stream Nitrogen. IGERT Ecosystem Informatics Symposium, Corvallis, OR.

SELECT PRESENTATIONS

1. **Zarnetske, JP**, R Haggerty, SM Wondzell, V Bokil, and R González-Pinzón. (2011) Coupling hyporheic nitrification-denitrification: Evaluating net nitrate source-sink dynamics as a function of transport and reaction kinetics. Gordon Research Conference: Catchment Sciences. Bates College, Lewiston, ME.
2. Wondzell, SM; **JP Zarnetske**, R Haggerty, RA Payn, MN Gooseff, BL McGlynn. (2010) Limitations of the Stream Tracer Approach for Hyporheic Investigations. AGU Fall Meeting, San Francisco, CA.
3. Yoon, H-D, Cox D, Albert D, Mori N, Smith H, and **Zarnetske, JP**. (2010) Vertical structure of fluid velocity for flow through vegetation under waves. AGU Fall Meeting, San Francisco, CA.
4. °° Kim, S, and **JP Zarnetske**. (2010) Preliminary Investigation of the Effects of Emergent Vegetation on Mixing by Waves. HWRL Summer Research Symposium, Corvallis, OR.
5. **Zarnetske, JP**, Haggerty R, Wondzell SM, MA Baker. (2010) Labile Dissolved Organic Carbon Supply Limits Hyporheic Denitrification. CUAHSI Biennial Symposium, Boulder, CO.
6. **Zarnetske, JP**, Haggerty R, Wondzell SM, MA Baker. (2010) Dynamics of Nitrate Production and Removal as a Function of Residence Time in the Hyporheic Zone: A ¹⁵N Tracer Study. NABS Annual Meeting, Santa Fe, NM.
7. Wondzell, SM; **Zarnetske JP**, Haggerty R, Payn RA, Gooseff MN, McGlynn BL. (2010) Limitations of the Stream Tracer Approach for Hyporheic Investigations. NABS Annual Meeting. Santa Fe, NM.
8. Haggerty, R, Argerich A, Martí E, Sabater F, **JP Zarnetske**. (2010) The Use of Resazurin as a Tracer to Differentiate Stream Reaches with Contrasting Metabolically Active Transient Storage. NABS Annual Meeting. Santa Fe, NM.
9. ** **Zarnetske, JP**, Haggerty R, Wondzell SM, MA Baker. (2009) Labile Dissolved Organic Carbon Availability Controls Hyporheic Denitrification: a ¹⁵N Tracer Study. AGU Fall Meeting, San Francisco, CA. *AGU Outstanding Presentation Award*
10. **Zarnetske, JP**, Haggerty R, °°Nabelek M, Argerich A. (2009) Resazurin as a "Smart" Tracer for Investigating Hyporheic Biogeochemical Processes. GSA, Fall Meet. Suppl., Portland, OR.
11. **Zarnetske, JP**, Haggerty R, Wondzell SM, MA Baker. (2009) Residence Time Controls on Hyporheic Nitrogen Cycling in an Upland Agricultural Stream. Gordon Research Conference: Catchment Sciences. Proctor Academy, Andover, NH.
12. ****Zarnetske, JP**, Haggerty R, Wondzell SM, MA Baker. (2009) Hyporheic Denitrification in an Upland Agricultural Stream: a ¹⁵N Tracer Study. OSU WRGP Research Symposium. Corvallis, OR. *Best Presentation Award*

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13. Argerich, A, Haggerty R, Martí E, Sabater F, **JP Zarnetske**. (2009) Use of Resazurin as a "smart" tracer to differentiate two reaches with different transient storage and metabolism. NSF LTER All Scientist Meet. Estes Park, CO.
14. °Nabelek, M, Haggerty R, Knight T, **JP Zarnetske**. (2009) Developing the resazurin-resorufin system as a "smart" tracer used to measure microbial respiration and sediment-water interactions. GSA-Rocky Mtn. Meet., Denver, CO.
15. ****Zarnetske, JP**, Haggerty R, Wondzell SM, MA Baker. (2008) Hyporheic Denitrification in an Upland Agricultural Stream: a ¹⁵N Tracer Study. AGU Fall Meeting. San Francisco, CA. **AGU Outstanding Presentation Award**
16. Haggerty, R, A Argerich, E Martí, **JP Zarnetske**, °M Nabelek. (2008) Use and modeling of the "smart" tracer resazurin to quantify metabolically-active transient storage: Field results. AGU Fall Meeting. San Francisco, CA.
17. Crook, N, Binley A, Knight R, Robinson D, **Zarnetske JP**, R Haggerty. (2008) Electrical Resistivity Imaging of the Architecture of Sub-stream Sediments. Eos Trans. AGU, Joint Assembly Meet. Suppl. San Francisco, CA.
18. **Zarnetske, JP**, Gooseff MN, Bowden WB, Greenwald MJ, Brosten TR, Bradford JH, JP McNamara. (2007) Influence of morphology and permafrost dynamics on surface water - groundwater exchange in arctic headwater streams under warming thaw conditions. AGU Fall Meeting. San Francisco, CA.
19. ****Zarnetske, JP**, Haggerty R, Crook N, D Robinson. (2007) Hyporheic geophysics: D.C. resistivity imaging of valley-bottom alluvium in a 3rd-order mountain stream, HJ Andrews Experimental Forest, Oregon, USA. OSU WRGP Research Symposium. Corvallis, OR. **Best Presentation Award**
20. Gooseff, MN, Cardenas MB, **Zarnetske JP**, Bowden WB, Greenwald MJ, McNamara JP, Bradford JH, TR Brosten. (2007) Channel-streambed interactions over and under ice. AGU Fall Meeting. San Francisco, CA.
21. Brosten TR, Bradford JH, McNamara JP, **Zarnetske JP**, Gooseff MG, Bowden WB, ME Johnston. (2007). Estimating 3D variation in active-layer thickness beneath arctic streams using ground-penetrating radar. Eos Trans. AGU, Fall Meet. Suppl. San Francisco, CA.
22. Bowden, WB, Greenwald MJ, Gooseff MN, McNamara JP, Bradford JH, **Zarnetske JP**, TR Brosten. (2007) Stoichiometry of carbon, nitrogen, and phosphorus regeneration interactions in the hyporheic zones of arctic streams draining areas of continuous permafrost. AGU Fall Meeting. San Francisco, CA.
23. Payn, RA, Gooseff MN, Benson DA, Cirpka OA, Zarnetske JP, Bowden WB, McNamara JP, Bradford JH. (2007). Non-parametric comparison of residence time distributions derived from constant-rate and instantaneous stream tracer experiments. GSA Fall Meet. Suppl., Denver, CO.
24. **Zarnetske, JP**, Haggerty R, Crook N, D Robinson. (2006) Hyporheic geophysics: D.C. resistivity imaging of valley-bottom alluvium in a 3rd-order mountain stream, HJ Andrews Experimental Forest, Oregon, USA. AGU Fall Meeting. San Francisco, CA.
25. **Zarnetske, JP**, Gooseff MN, Greenwald MJ, Bowden WB, McNamara JP, Bradford JH, TR Brosten. (2006) Transient storage dynamics in Arctic tundra streams: A comparison of two geomorphically distinct streams. NABS Annual Meeting. Anchorage, AK.
26. Johnston-Greenwald, ME, Bowden WB, **Zarnetske JP**, Gooseff MN, McNamara JP, Bradford JH, TR Brosten. (2006). Hyporheic exchange and biogeochemical processes in arctic tundra streams: a comparison of two geomorphically distinct streams. LTER All Scientists Meet., Estes Park, CO.
27. Gooseff MN, **Zarnetske JP**, Haggerty R, LaNier J, SM Wondzell. (2006). Challenges in Groundwater Flow Modeling to Characterize Hyporheic Exchange. MODFLOW and More: Managing Ground Water Systems, Golden, CO, USA.
28. Johnston-Greenwald, MJ, Bowden WB, **Zarnetske JP**, Gooseff MN, McNamara JP, Bradford JH, TR Brosten. (2006) Hyporheic biogeochemical processes in arctic tundra streams: A comparison of two geomorphically distinct streams. NABS Annual Meeting. Anchorage, AK.
29. **Zarnetske, JP**, Gooseff MN, Bowden WB, Johnston M, McNamara JP, Bradford JH, TR Brosten. (2005) Effect of Morphology and permafrost on hyporheic dynamics in two tundra streams on the North Slope of Alaska. AGU Fall Meeting. San Francisco, CA.

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30. **Zarnetske, JP**, Gooseff MN, Bowden WB, Brosten T, Bradford JH, JP McNamara. (2005) Relating transient Storage to varied geomorphic, discharge, and hyporheic conditions in arctic tundra streams. GSA Fall Meeting. Salt Lake City, UT.
31. Payn, RA, **Zarnetske JP**, Gooseff MN, WB Bowden. (2005) Comparison of transient storage analyses using slug and constant rate tracer methods in two arctic tundra streams. NABS Spring Meeting. New Orleans, LA.
32. Gooseff, MN, Bowden WB, McNamara JP, Bradford JH, **Zarnetske JP**, TR Brosten. (2005) Will climate change affect hyporheic processes in Arctic stream networks? An assessment of interactions among geomorphology, hydrology, and biogeochemistry. ASLO Aquatic Sciences Meeting. New Orleans, LA.
33. Brosten, TR, JH Bradford, JP McNamara, WB Bowden, MG Gooseff, **JP Zarnetske**. (2005). Characterizing subsurface active-layer permafrost beneath arctic streams using 3D ground-penetrating radar. Eos Trans. AGU, Fall Meet. Suppl. San Francisco, CA.
34. **Zarnetske, JP**, Gooseff MN, Bowden WB, Bradford JH, McNamara JP, Bradford T, °K Hill. (2004) Seasonal evolution of hyporheic zones in arctic tundra streams, North Slope, Alaska. AGU Fall Meeting. San Francisco, CA.
35. **Zarnetske, JP**, Gooseff MN, Bradford JH, McNamara JP, Bradford T, WB Bowden. (2004) Will climate change affect Hyporheic Processes in Arctic Streams? Spring Runoff Meeting, USU. Logan, UT.
36. **Zarnetske, JP**. (2000) Sound attenuation in an artificial rock fracture: A study of *in situ* remediation technology enhancement. Maine Geological Society Meeting, Bowdoin College, Brunswick, ME.
37. **Zarnetske, JP**. (1999) The success of a CRRP mixed-species tree plantation in North Queensland, Australia. Community Rainforest Restoration Program (CRRP) Semi-annual Meeting, Atherton, Queensland, Australia.

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REFERENCES

Dr. Roy Haggerty, PhD Advisor, Committee Chair, & Colleague
Professor, Department of Geosciences
Oregon State University
haggertr@geo.oregonstate.edu

Dr. Steven Wondzell, PhD Committee Member, & Colleague
Research Aquatic Ecologist, Pacific Northwest Research Station
Olympia Forestry Sciences Lab, U.S. Forest Service
swondzell@fs.fed.us

Dr. Julia Jones, Director of NSF IGERT Ecosystem Informatics Program
Professor, Department of Geosciences
Oregon State University
jonesj@geo.oregonstate.edu

Dr. Michael Gooseff, Masters Advisor, Committee Chair, & Colleague
Associate Professor, Department of Civil & Environmental Engineering
Pennsylvania State University
mgooseff@engr.psu.edu

Dr. Michelle Baker, MS Committee Member & Colleague
Associate Professor, Department of Biology & The Ecology Center
Utah State University
mbaker@biology.usu.edu

Dr. William “Breck” Bowden, PI for MS Research Project & Colleague
Professor, Rubenstein School of Environmental & Natural Resources
University of Vermont
breck.bowden@uvm.edu