

Sarah E. Godsey

Dept. of Geosciences
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Professional Experience

Assistant Professor, Dept. of Geosciences, Idaho State University, January 2012-present.

Postdoctoral Scholar, Dept. of Civil & Environmental Engineering, Pennsylvania State University, January 2010-December 2011. Advisor: Michael N. Gooseff. Research Project: Thermokarst Hydrology in Arctic Alaska.

Research Assistant, Dept. of Civil & Environmental Engineering, Pennsylvania State University, June-September 2009. Monitored the thermal and hydrological status of thermokarst features near Toolik Field Station in northern Alaska.

Graduate Student Researcher, Dept. of Earth & Planetary Science, UC-Berkeley, June 2006-December 2007, June 2008-June 2009, and September-December 2009. Conducted research on chemical weathering, geomorphology, hydrology and hydrochemistry.

Field Researcher

- Soils Research with H. Elsenbeer. Rondonia, Brazil, Summers 2000-2001.
- Andean Amazon Rivers Analysis and Management (AARAM) Project, Pachitea River Basin, Peru. August-December 2000 and April-May 2001.
- NASA's Tropical Rainfall Measuring Mission (TRMM-KWAJEX) in Kwajalein, Republic of the Marshall Islands, July-September 1999.

Education

University of California-Berkeley, Ph.D., Earth & Planetary Science, 2009. Advisor: James W. Kirchner. Thesis: Understanding Water and Solute Fluxes in Diverse Catchments

University of Cincinnati, M.S., Civil & Environmental Engineering, 2003. Advisor: Helmut Elsenbeer, Thesis: Runoff Generation on Barro Colorado Island (BCI), Panamá

University of Virginia, B.A., Echols Interdisciplinary honors degree: Environmental Science & Latin American Studies, 1999.

Research Interests

Catchment Hydrology: hydrologic response to climate, land use, and management change, storage and low flow processes, snowmelt and wind redistribution of snow in mountainous catchments, travel time distributions, fire and thermokarst disturbance, stream network identification

Hydrochemistry: concentration-discharge relationships, chemical weathering, mobilization and storage of solutes, conservative and reactive tracers, intersections with the food, energy, water nexus

Grants, Honors and Awards

- Godsey SE and others. 2016. "RII Track-2 FEC: Transdisciplinary science and high-frequency sensor applications to inform sustainable management of food, energy, and water in large semi-arid river basins" \$3,951,003. NSF. Godsey's role is PI and collaborator on water quality and evapotranspiration components. Pending.
- Hale RL, Godsey SE. 2016. "Preliminary Proposal: Vertical and lateral fluxes of water, nitrogen, and carbon across stream permanence gradients: point-scale processes to network-scale patterns" to NSF Ecosystems. Godsey's role is co-PI leading the hydrological measurements and synthesis. Full proposal not encouraged.
- Godsey SE. 2015. "Extreme Drought Mapping in California" collaborative work with ETH-Zurich, Godsey's role is directing field campaign in Fall 2015. \$9,900. Awarded.
- Delparte D, Godsey SE, and others. 2015. "Sensor systems for decision support in the food, energy, and water nexus: Testbed in Idaho's Snake River Plain." \$6,000,000. NSF. Godsey's role is PI on the water quality and modeling components. Declined.
- Delparte D and others. 2015. "MRI: Acquisition of advanced Unmanned Aircraft Systems (UAS) remote imaging sensors and ground-based spectrometry for understanding ecosystem function." \$243,624. NSF. Godsey's role is senior personnel looking at drainage network sensitivity to climate and land use change. Declined.
- Lohse KA and others. 2014. "Development of continuous soil respiration measurements in snow dominated systems for a spatially temporally extensive network at the Reynolds Creek CZO." \$49,679. ISU Office of Research. Awarded.
- Godsey SE and others. 2014-2015. "Using pharmaceuticals, water and nitrate isotopes to identify sources of contamination in the Lower Portneuf River Valley, Idaho." \$30,000. Idaho NSF EPSCoR. Awarded.
- Lohse KA, Godsey SE, Nawotniak SK, Finney BE. 2013. "Influence of climate on soil hydrology and carbon cycling in an evolving tropical landscape in Los Tuxtlas, Mexico." \$982,505. National Aeronautics and Space Administration NSPIRES Carbon Cycle Science grant. Declined.
- Lohse KA, Seyfried MS and others. 2013. Reynolds Creek Carbon Critical Zone Observatory (RCC-CZO). \$2,500,000. NSF, 2013-2018. Godsey's role is senior personnel assisting with environmental field camp and water research in project years 3-5. Awarded.
- Goodwin, PA and others. 2012. National Science Foundation EPSCoR Track 2, WC-WAVE award, 2013-2016. Godsey's role is senior personnel advising a graduate student on snow modeling as part of the watershed science team. Awarded.
- Goodwin PA and others. 2012. National Science Foundation EPSCoR Track 1, MILES award, 2013-2018. Godsey's role is senior personnel advising a graduate student on water quality responses to climate and land use change. Awarded.
- Godsey SE. 2012. Understanding plant water use across the snow-rain transition in Idaho's wilderness watersheds of the Salmon River Basin. \$40,000. DeVlieg Foundation award 2014-2015. Awarded.
- Welhan J, Godsey SE, Lohse KA, Schlegel M, Jones M. 2013. INSPIRE: Understanding the origin and spatial distribution of hydrocarbon gas and perceptions of hydraulic fracturing risk to predict and communicate potential water quality impacts of gas development in western Idaho. National Science Foundation. Full proposal not encouraged.

Grants, Honors and Awards (continued)

- EPSCoR Water Resources in a Changing Climate REU, advisor for Lakin Beal, starting Spring 2013. Water chemistry related to Los Tuxtlas, Mexico, soil chronosequence, climosequence and land use gradient pilot project. Awarded.
- DISCCRS VII Scholar, Interdisciplinary Climate Change seminar for young researchers, October 2012.
- Permafrost Young Researchers Travel Award, 10th International Conference on Permafrost, Salekhard, Russia, June 2012.
- Crosby BT, Baxter CV and Godsey SE. 2012. If Climate Change Increases the Frequency of Debris Flows, Are the Impacts on Aquatic Habitat Equal Throughout the Stream Network? NW Climate Science Center grant. \$260,000. Declined.
- PolarTREC teacher-researcher collaboration, with Melissa Barker and Tamara Harms, 2012.
- Kobs Nawotniak SE et al. (including Godsey). November 2011. PIRE: Resource resiliency, social systems, and sustainable development in a vulnerable tropical forest: Los Tuxtlas, Mexico to NSF. \$4,000,000. Declined.
- National Science Foundation Office of Polar Programs grant, Arctic Natural Sciences, “Collaborative Research: Climate-mediated coupling of hydrology and biogeochemistry in arctic hillslopes” with Tamara Harms (Lead PI, UAF), Jay Jones (co-PI, UAF), and Michael Gooseff (co-PI, PSU). Godsey (PI) portion: \$246,088. Awarded.
- US Permafrost Association Travel Award, December 2010.
- American Geophysical Union Student Paper Award, Hydrology Section, 2007 Fall Meeting.
- National Science Foundation Graduate Research Fellow, awarded 2001, fellow 2003-2006.
- Smithsonian Tropical Research Institute 10-week Graduate Fellow, 2002.
- University of Cincinnati Distinguished Graduate Fellow, 2001-2003.
- Institute for Global Studies and Affairs, Univ. of Cincinnati, Grant Recipient, 2001-2002.
- Phi Beta Kappa, Spring 1998 initiate.
- Echols Scholar, Undergraduate Honors Program, 1995-1999.

Publications

Peer-reviewed (*student)

- Whiting, JA*, Godsey SE, In press. Discontinuous headwater stream networks with stable flowheads, Salmon River Basin, Idaho. *Hydrological Processes*.
- Beal LK*, Huber DP*, Lohse KA, Godsey SE, Kobs Nawotniak, SE. In press. *Geoderma, Controls on Ecohydrologic Properties in Cold Desert Ecosystems: Differences in Soil Age and Volcanic Morphology*.
- Voytek E*, Rushlow CR*, Godsey SE, Singha K. 2016. Identifying hydrologic flowpaths on arctic hillslopes using electrical resistivity and self potential. *Geophysics*. doi:10.1190/geo2015-0172.1
- Brooks PD, Chorover JA, Godsey SE, Fan Y, Maxwell R, McNamara JM, Tague C. 2015. Hydrological partitioning in the Critical Zone: recent advances and opportunities for developing transformative and transferrable understanding of water cycle dynamics. *Water Resources Research*. 51(9), 6973-6987. doi:10.1002/2015WR017039

Publications (continued)

Peer-reviewed (*student), continued

- Abbott BW*, Jones JA, Godsey SE, Larouche JR, Bowden WB. 2015. Patterns and persistence of hydrologic carbon and nutrient export from collapsing upland permafrost. *Biogeosciences*, 2063-2100.
- Milman A, Marston JM, Bolson J, Godsey SE, Jones HP, Weiler CS. 2015. Scholarly Motivations to Conduct Interdisciplinary Climate Change Research. *Journal of Environmental Studies and Sciences*. doi: 10.1007/s13412-015-0307-z.
- Tennant CJ*, Crosby BT, Godsey SE, VanKirk RE, Derryberry DR. 2015. *A simple framework for assessing the sensitivity of mountain watersheds to warming-driven snowpack loss*. *Geophysical Research Letters*, 42, doi:10.1002/2015GL063413.
- Tennant CJ*, Crosby BT, Godsey SE. 2015. *Elevation-dependent responses of streamflow to climate warming*. *Hydrological Processes*, 29(6), 991-1001. doi: 10.1002/hyp.10203.
- Godsey SE, Kirchner JW. 2014. *Dynamic, discontinuous stream networks: hydrologically driven variations in active drainage density, network magnitude, and stream order*. *Hydrological Processes* 28: 5791-5803, 10.1002/hyp.10310.
- Godsey SE, Tague C, Kirchner JW. 2014. *The relationship between snowpack and low flow in the Sierra Nevada, California, USA*. *Hydrological Processes* 28: 5048-5064, doi: 10.1002/hyp.9943.
- Bowden WB, Larouche JR, Pearce AR, Crosby BT, Krieger K, Flinn MB, Kampman j, Gooseff MN, Godsey SE, Jones JB, Abbott BW, Jorgenson BT, Kling GW, Mack M, Schuur EAG, Baron AF, Rastetter EB. 2012. *An Integrated Assessment of the Influences of Upland Thermal-Erosional Features on Landscape Structure and Function in the Foothills of the Brooks Range, Alaska*. TICOP Paper 7516.
- Godsey SE, Aas W, Clair TA, de Wit HA, Fernandez IJ, Kahl JS, Malcolm IA, Neal C, Neal M, Nelson SJ, Norton SA, Palucis MC, Skjelkvåle BL, Soulsby C, Tetzlaff D, Kirchner JW. 2010. *Generality of Fractal 1/f Scaling in Catchment Tracer Time Series, and its Implications for Catchment Travel Time Distributions*. *Hydrological Processes* 24: 1660–1671. DOI: 10.1002/hyp.7677.
- Godsey SE, Kirchner JW, Clow DW. 2009. *Concentration-discharge relationships reflect chemostatic characteristics of catchments*. *Hydrological Processes* 23: 1844-1864.
- Godsey SE, Elsenbeer H, Stallard R. 2004. *Overland flow generation in two lithologically distinct rainforest catchments*. *Journal of Hydrology* 295: 276-290.
- Godsey S and Elsenbeer H. 2002. *The soil hydrologic response to forest regrowth: a case study from southwestern Amazonia*. *Hydrological Processes* 16: 1519-1522.

In Review

- Rushlow CR, Godsey SE. In review. *Runoff generation on Arctic hillslopes underlain by continuous permafrost*.

Publications (continued)

In Preparation or Revision

- Tennant, CJ*, Godsey, SE, Crosby, BT, and VanKirk, R., In revision. *Predicting warming-driven snowpack loss at the landscape scale using a climate and elevation-based framework.*
- Tennant CJ*, Harpold A, Lohse KA, Crosby BT, Godsey SE, Larsen LG, van Kirk R. In preparation. *LiDAR illuminates the influence of elevation, topography, and vegetation on snow depth across western US hydroclimates.*
- Enslin, C.L.*, Godsey, S.E., Marks, D, Kormos P.R., Seyfried, M.S., Link, T.E., McNamara, J.P. In revision for resubmission to Water Resources Research. *A hydrological modeling dataset for the Johnston Draw catchment, Reynolds Creek Experimental Watershed, Idaho, USA.*
- Godsey SE, Kobs Nawotniak S, Fisher MA, Kirchner JW. In preparation. *Accuracy of estimates of catchment mean residence times and travel time distributions.*
- Godsey SE, McNamara. In preparation. *The impact of storage on hydrologic response: experimental opportunities and challenges.*

Conference Proceedings and Presentations (*presenter; student)

- Voytek, EB*, Rushlow CR, Godsey SE, Singha K. Accepted. Geophysical identification of hydrologic flow paths on arctic hillslopes. 11th International Conference on Permafrost. June 2016. Potsdam, Germany.
- Rushlow CR*, Godsey SE, Voss C, Sawyer A. Accepted. Runoff generation on hillslopes underlain by continuous permafrost. 11th International Conference on Permafrost. June 2016. Potsdam, Germany.
- Abbott BW, Jones JB, Larouche JR, Bowden WB, Godsey SE, Balser AW. Accepted. Lateral and vertical fluxes of carbon and nitrogen from upland thermokarst. 11th International Conference on Permafrost. June 2016. Potsdam, Germany.
- Larson D., Godsey SE*, Lybecker D, Ohr CI, Kobs Nawotniak SE, Lohse KA. 2015. Integration of social perceptions, behaviors, and economic valuations of groundwater quality as an ecosystem service following exurban development. H43N-05. 2015 Fall Meeting, AGU, San Francisco, Calif.
- Ohr C*, Godsey SE, Welhan J, Larson D, Derryberry D, Lohse KA. 2015. Complex Controls on Groundwater Quality in Growing Mid-sized Cities: A Case Study Focused on Nitrate and Emerging Contaminants. H21J-1533. 2015 Fall Meeting, AGU, San Francisco, Calif.
- Patton N*, Lohse KA, Seyfried M, Crosby BT, Godsey SE. 2015. Determining Total Soil Carbon Storage in the Critical Zone Using Topography and Lithology. H21C-1381. 2015 Fall Meeting, AGU, San Francisco, Calif.
- Voytek E*, Rushlow C, Godsey SE, Singha K. 2015 Identifying Hydrologic Flowpaths on Arctic Hillslopes Using Electrical Resistivity and Self Potential. NS21A-1914. 2015 Fall Meeting, AGU, San Francisco, Calif.
- Enslin CE*, Godsey SE, Marks D, Seyfried, M., Kormos P, McNamara J, Link T. 2015. A hydrometeorological dataset across the rain-to-snow transition at Reynolds Creek Critical Zone Observatory, Idaho. C33D-0845. 2015 Fall Meeting, AGU, San Francisco, Calif.

Publications (continued)

Conference Proceedings and Presentations (continued)

- Tennant C*, Harpold A, Crosby BT, Godsey SE, Lohse KA. 2015. LiDAR illuminates the influence of elevation, aspect, and vegetation on seasonal snowpack: case studies from four western Critical Zone Observatories. C33C-0826. 2015 Fall Meeting, AGU, San Francisco, Calif.
- Brooks P*, Barnard H, Chorover J, Fan Y, Gallo E, Godsey S, Maxwell R, McNamara J, Swetnam T, Tague N. 2015. Scale-dependent interactions between vegetation, landscape, and climate: How critical zone structure influences ecohydrological resilience in a rapidly changing world. H23J-05. 2015 Fall Meeting, AGU, San Francisco, Calif.
- Godsey SE*, Whiting JA, Reinhardt KA. 2015. Stream network responses to evapotranspiration in mountain systems: evidence from spatially-distributed network mapping and sapflow measurements. H23J-04. 2015 Fall Meeting, AGU, San Francisco, Calif.
- Whiting JA*, Godsey SE, Reinhart K, Thackray GD. 2014. Understanding Tree Water Use Across the Snow-Rain Transition in Idaho's Mountain Watersheds: Feedbacks Between Stream Networks, Transpiration, and Basin Geomorphology. Abstract B31E-0051 presented at the 2014 Fall Meeting, AGU, San Francisco, Calif., 15-19 Dec.
- Tennant C*, Crosby BT, Godsey SE, Van Kirk R, Derryberry D. A Simple Framework for Quantifying Warming-based Snowpack Declines at the Landscape Scale. Abstract C43A-0366 presented at the 2014 Fall Meeting, AGU, San Francisco, Calif., 15-19 Dec.
- Rushlow CR*, Godsey SE. 2014. Water storage capacity exceedance controls the timing and amount of runoff generated from Arctic hillslopes in Alaska, USA. Abstract H51O-0827 presented at the 2014 Fall Meeting, AGU, San Francisco, Calif., 15-19 Dec.
- Godsey SE*, Rushlow CR, Harms TK. 2014. Hydrologic Connectivity in Headwater Catchments Underlain by Continuous Permafrost: Hydrological, Thermal and Biogeochemical Patterns. Abstract H31F-0674 presented at the 2014 Fall Meeting, AGU, San Francisco, Calif., 15-19 Dec.
- Harms TK, Godsey SE, Longano E, Ludwig S, Risser R, Rushlow C. 2014. Hydrology and biogeochemistry of zero-order channels draining arctic hillslopes. Abstract B43B-0236 presented at the 2014 Fall Meeting, AGU, San Francisco, Calif., 15-19 Dec.
- Beal LK*, Lohse KA, Godsey SE, Huber DP. 2013. Climatic controls on soil hydraulic properties along soil chronosequences on volcanic parent material. Abstract H21F-1124 presented at the 2013 Fall Meeting, AGU, San Francisco, Calif., 7-13 Dec.
- Godsey SE*, Kirchner JW, Whiting JA. 2013. Controls on scaling relationships of dynamic stream networks. Abstract H41C-1248 presented at the 2013 Fall Meeting, AGU, San Francisco, Calif., 7-13 Dec.
- Rushlow, CR*, Godsey SE. 2013. Arctic hillslope response to changing water storage conditions. Abstract C53A-0538 presented at the 2013 Fall Meeting, AGU, San Francisco, Calif., 7-13 Dec.
- Harms TK*, Godsey SE, Jones HA, Russer RR, Rushlow CR. 2013. Biogeochemical dynamics of zero-order Arctic catchments. Abstract GC53B-1061 presented at the 2013 Fall Meeting, AGU, San Francisco, Calif., 7-13 Dec.

Publications (continued)

Conference Proceedings and Presentations (continued)

- Harms TK*, Godsey SE, Jones JB, Risser RR, Rushlow CR. 2013. Seasonal and storm dynamics of solutes in flowpaths draining arctic hillslopes. Society for Freshwater Science annual meeting. Jacksonville, FL.
- Godsey SE*. 2013. Snow, wind, and fire: vulnerability and resilience of Arctic hillslopes. US-Japan Joint Seminar on Catchment Hydrology and Forest Biogeochemistry. Honolulu, HI.
- Rushlow CR*, Godsey SE. 2012. Hydrologic connectivity responses to thermally-controlled changes in hydraulic gradients on Arctic hillslopes. Abstract EP41F-0852 presented at the 2012 Fall Meeting, AGU, San Francisco, Calif., 3-7 Dec.
- Godsey SE*, Gooseff MN, Johnson CR, Kling GK, Giblin AE, Lewkowicz AG, Krieger KE, Crosby BT. 2012. Hydrological and biogeochemical responses to fire and thermokarst formation in arctic Alaska. Presented at the 10th International Conference on Permafrost, Salekhard, Russia.
- Godsey SE*, Gooseff MN, Lewkowicz AG. 2011. Controls on the Spatiotemporal Evolution of the Thawed Layer in and around Thermokarst Features. Abstract C41B-0398 presented at the 2011 Fall Meeting, AGU, San Francisco, Calif., 4-9 Dec.
- Gooseff MN*, Godsey SE, Lewkowicz AG, Lanan K. 2010. Soil responses to rapid warming events inside and outside of thermokarst features during the snow season in arctic Alaska. Abstract C31A-0504 presented at the 2010 Fall Meeting, AGU, San Francisco, Calif., 13-17 Dec.
- Godsey SE*, Gooseff MN, Johnson CR, Lewkowicz AG, Krieger KE, Crosby BT. 2010. Hydrological and biogeochemical responses to fire and thermokarst formation in arctic Alaska. Abstract GC43A-0947 presented at the 2010 Fall Meeting, AGU, San Francisco, Calif., 13-17 Dec.
- Lewkowicz AG *, Godsey SE, Gooseff MN. 2010. Use of DC resistivity tomography to investigate thermokarst features, Toolik Lake area, Alaska, USA. Abstract C31A-0489 presented at the 2010 Fall Meeting, AGU, San Francisco, Calif., 13-17 Dec.
- Godsey SE*, Gooseff MN, Tague C, Kirchner JW. 2009. Climate Change Responses of Hydrologic Flowpaths in Mountainous and Polar Regions. Eos Trans. AGU 90(52), Fall Meeting Suppl., Abstract B33A-0371.
- Krieger K*, Crosby BT, Phillips C, Godsey SE, Jerolmack DJ. 2009. *Slump Scaling: Common Geometries Observed from Retrogressive Thaw Slumps in Three Different Environments in Arctic Alaska*. Eos Trans. AGU 90(52), Fall Meeting Suppl., Abstract U41C-0044.
- Godsey SE* and Kirchner JW. 2008. *Accuracy of time-domain and frequency-domain methods used to characterize catchment transit time distributions*. Eos Trans. AGU 89(53), Fall Meeting Suppl., Abstract H24C-06.
- Godsey SE*, Palucis MP, Kirchner JW. 2007. *Generality of Fractal 1/f Scaling in Catchment Tracer Time Series: Implications for Catchment Travel Time Distributions*. Eos Trans. AGU 88(52), Fall Meeting Suppl., Abstract H13M-03.
- Godsey SE* and Kirchner JW. 2006. *Watershed mean residence times and travel time distributions: how accurately can they be characterized?* Eos Trans. AGU 87(52), Fall Meeting Suppl., Abstract H43E-0541.

Publications (continued)

Conference Proceedings and Presentations (continued)

- Godsey SE* and Kirchner JW. 2005. *Concentration-Discharge Relationships Across Temporal and Spatial Scales*. Eos Trans. AGU 86(52), Fall Meeting Suppl., Abstract H22B-04.
- Godsey SE* and Kirchner JW. 2004. *The relationship between snowpack and seasonal low flows in the Sierra Nevada: climate change and water availability in California*. Eos Trans. AGU 85(47), Fall Meeting Suppl., Abstract U53A-0704.
- Godsey S*, Elsenbeer H, Stallard R. 2003. *Overland flow generation and soil hydraulic properties in two catchments in central Panama*. Eos Trans. AGU 84(52), Fall Meeting Suppl., Abstract H51A-02.
- Elsenbeer H*, Godsey S. 2003. *Overland flow in tropical rainforests: causes and consequences*. Eos Trans. AGU 84(46), Fall Meeting Suppl., Abstract H51A-01.

Invited Talks

- Godsey SE. 2013. Impacts of changing climate on snowpack and near-surface flow in Arctic Tundra. Idaho EPSCoR Annual Meeting. McCall, Idaho, October 2013.
- Godsey SE. 2013. Snow, wind and fire: vulnerability and resilience of Arctic hillslopes. US-Japan Joint Seminar on Responses of Catchment Hydrology and Forest Biogeochemistry to Climatic and Environmental Change. 4-7 March, Honolulu, Hawaii.
- Godsey SE and Abbott BW. 2012. Arctic research: interdisciplinary style. 10th International Conference on Permafrost, Salekhard, Russia.
- Godsey SE* and Kirchner JW. 2011. Dynamic, discontinuous stream networks and their sensitivity to climate change. (invited) Abstract H53P-02 presented at the 2011 Fall Meeting, AGU, San Francisco, Calif., 4-9 Dec.
- Institute for Pacific Island Forestry (IPIF), US Forest Service, Hilo, Hawaii, August 2008.
- Xu Liang's research group, Environmental Engineering Dept., UC-Berkeley, March 2006.

Other Scientific Talks, Posters and Presentations

- Vegetation influences on concentration-discharge relationships, Penn State workshop, Fall 2015.
- Pharmaceuticals in SE Idaho Groundwater site visit talk, Fall 2014.
- Drilling, Imaging and Sampling the Deep Critical Zone poster, Fall 2013.
- ISU Engineering Colloquium, Spring 2013.
- U. Montana Geosciences Colloquium, 2013.
- Tri-state interdisciplinary working group on spring ecohydrology, New Mexico, 2012.
- ISU Geosciences Department Colloquium, Spring 2012.
- Boise State Geosciences Department Colloquium, Spring 2012.
- Uppsala University presentation in Bishop lab, Summer 2012.
- APECS/ARCSS-TK Changing Permafrost webinar, "Permafrost degradation: ground thermal and hydrological responses", September 2011.
- Toolik Field Station "Talking Shop", August 2010.
- Arctic LTER March Meeting, Woods Hole, MA, March 2010, Feb 2011, March 2012.
- Penn State Water Resources Engineering Seminar, January 2010.
- UC-Berkeley Earth and Planetary Science Seminar, March 2009.
- UC-Berkeley HydroLunch, October & December 2005, December 2006, October 2007.

Teaching

Instructor, Independent Study, Idaho State, Spring 2015.

Supervise Sira Barnes' senior capstone course developing earth systems modules related to the hydrosphere for GEOL1100 students.

Instructor, GEOL6603 Scientific Writing, Idaho State, Springs 2013-present.

Develop and co-teach a graduate seminar on scientific writing for 1st year graduate students with an emphasis on written and oral communication.

Instructor, GEOL1100 The Dynamic Earth, Idaho State, Springs 2013, 2015.

Prepare and deliver lectures, assignments and exams for a ~110 to 150-student undergraduate survey course in Earth System science for non-majors.

Curriculum development, with Melissa Barker, PolarTREC high school teacher, Spring 2013.

Helped to introduce and perform a pilot test of a high-school-level polar hydrology lesson focused on conservation of mass. Available online at <<http://www.polartrec.com/resources/lesson/water-cycling-movement-through-watersheds-and-water-tracks>>.

Facilitator, weekly "Critical Zone" reading seminar, Fall 2012-present.

Help to organize weekly seminar to discuss current and classic literature in hydrology, geomorphology, pedology, ecology, and plant physiology with students and faculty from Biological Sciences and Geosciences departments. Informal course except F14-S16.

Instructor, GEOL6648 independent study, Idaho State, Fall 2012.

Supervised Amy Cassel's high-resolution remote sensing of Arctic water tracks to identify most effective vegetation indices across seasons, develop a geodatabase for high-resolution imagery from the Polar Geospatial Data Center, and link WorldView2 to LiDAR DEMs.

Instructor, GEOL5599 Idaho Water seminar, Idaho State, Falls 2012, 2014.

Coordinate multi-campus ISU graduate seminar with University of Idaho, Boise State University, and Idaho Water Resources Institute focused on water issues relevant across the state. Recruit speakers and focus on developing student presentation skills.

Instructor, GEOL6607 Spatial Analysis, Idaho State, Falls 2012-present.

Design, prepare and deliver all lectures and labs for ~10-person graduate class in statistics, with a focus on temporal and spatial analysis. Class was taught on three ISU campuses via distance learning for two years. Developed a flipped classroom lecture with project-based learning and field trip for sampling design practice.

Instructor, GEOL4499/5599 Stream/Watershed Hydrology, Idaho State, Springs 2012, 2014.

Design, prepare and deliver all lectures, lab and field trips for 8- to 15-person upper-division undergraduate and lower-division graduate class in surface physical hydrology.

Teaching (continued)

Guest Lecturer, Environmental Geology, Dynamic Earth, Graduate Seminar and Geochemistry.
Invited to teach occasional graduate and undergraduate courses at ISU.

Facilitator, Water Resources Engineering reading seminar, PSU, Spring, Fall 2010, Fall 2011.
Organized weekly seminar to discuss current and classic literature in hydrology

Lecturer, Changing Permafrost in the Arctic Landscape webinar, September 28, 2011.
Presented 90-minute lecture and web-based discussion on permafrost degradation to participants from multiple countries.

Guest Lecturer, CE360 Fluid Mechanics and Professional Development course on interviewing, Penn State, Fall 2011.
Invited to teach two 70-person sessions of Fluid Mechanics and prepare lecture materials on academic interviewing.

Instructor, CE360 Fluid Mechanics, Penn State, Spring 2011.
Prepared and delivered all lectures and manage 85-person upper division course.

Session Facilitator, Teaching Conference for new Graduate Student Instructors, UC-Berkeley, August 2008, January 2009.
Invited to lead 40-person session on problem solving for teachers.

Co-instructor, *The Water Planet* class at UC-Berkeley with W.E. Dietrich, Spring 2008.
Prepared and delivered half the lectures for a 200-person undergraduate survey course on water resources. Updated the course reader, homework assignments and exams. Held weekly office hours with students.

Participant, Graduate Student Instructors Professional Development course, Spring 2008.
Exchanged best inter-departmental pedagogical practices in semester-long seminar.

Trainee, Graduate Student Instructors Professional Ethics and Teacher Training, January 2008.
Completed university-wide ethics in teaching course and discipline-specific pedagogical training.

Docent, Lawrence Hall of Science, Berkeley, CA, January 2008-June 2009.
Interpreted and assisted with demonstrations at science exhibitions for the regional science discovery museum.

Guest Lecturer, upper-division and graduate-level classes, UC-Berkeley, 2006-2008.
Prepared occasional lectures in Earth Science & Environmental Engineering departments.

Mentor, Society for Women in the Physical Sciences, Fall 2003-Spring 2006.
Mentored undergraduate women in Earth & Planetary Sciences.

Student Advising, Thesis and dissertation committees

Primary advisor and co-advisor

Caitlin Rushlow, Ph.D. ISU Geosciences, expected 2017 (primary advisor).
Jenna Dohman, M.Sc., ISU Geosciences, expected 2018 (co-advisor with James Stoutenborough, ISU Political Sciences)
Anna Radke, M.Sc., ISU Geosciences, expected 2018 (primary advisor).
Courtney Richards, M.Sc.-GIS, ISU Geosciences, 2016 (primary advisor).
Clarissa Enslin, M. Sc., ISU Geosciences, 2016 (primary advisor).
John Whiting, M.SC. ISU Geosciences, 2015 (primary advisor).
Chris Tennant, Ph.D. ISU Geosciences, 2015 (co-advisor with Ben Crosby).
Lakin Beal, B.Sc., Geosciences, May 2014 (co-advisor with Lohse, Distinguished Senior in Geosciences award).

Committee member

Jimmy Guilinger, M.Sc., ISU Geosciences, expected 2017.
Angela Gregory, Ph.D., New Mexico Tech, expected 2017.
Chase Cusack, M.Sc., ISU Environmental Sciences & Management, 2016.
Nicholas Patton, M.Sc., ISU Geosciences, 2016.
Bryan Nicholson, M. Sc., ISU Geosciences, 2016.
Alexandra Rozin, Ph.D., transfer pending.
Jiri Kadlec, Ph.D., transferred.
Pat Calhoun, M.Sc. ISU Geosciences, 2012.
Non-thesis GIS comprehensive exam committee for Kate Zajanc, Amberle Keith, Denise Jensen, Spring 2013.

Committee Member and Graduate Faculty Representative (GFR)

Ruth MacNeille, D.A., ISU Biological Sciences, expected 2020.
Theresa Condo, M.Sc., ISU Biological Sciences, expected 2017.
Harmandeep Sharma, Ph.D., ISU Biological Sciences, expected 2018.
Matt Schenk, M. Sc., ISU Biological Sciences, expected 2016.
Lytle Denny, M. Sc., ISU Biological Sciences, expected 2016.
David Huber, Ph.D. ISU Biological Sciences, expected 2016.
Kaleb Heinrich, Ph.D. ISU Biological Sciences, 2015.

Graduate Faculty Representative

Kelin Kozlowski, M.Acc., ISU Accounting, 2014.
Ehren Moler, M.S., ISU Biological Sciences, 2015.

Undergraduate Mentor

Lakin Beal, Oscar Ebanja, Kim Archibald, Alli Trcka, Dylan Refaey, Sarah Tetzlaff, Melissa Nikolov, Logan Chance, Cody Feldman, Kristen Webb, Bailee Nye, Nestor Madrigal.

Professional Service and Membership

Volunteer, Portneuf River Cleanup, annually, Sep 2012-present.

Professional Service and Membership (continued)

- Board Member**, Cariboo Conservancy for the Portneuf Watershed Partners, 2015-present. Serve in advisory capacity for non-profit organization that facilitates stream restoration on the Portneuf and its tributaries.
- Participant**, Portneuf Watershed Program, 2012-present. Monthly meetings for academic and agency partners working on the Portneuf Watershed. Provide updates and advice.
- Participant**, Portneuf River Masterplan committee, 2014-present. Contribute to the evolving discussion of the long-term Portneuf watershed plan with the City of Pocatello, US Army Corps of Engineers, and a variety of citizens' group in Pocatello, Idaho.
- Participant**, Lost River Field Station set-up and maintenance, 2013, 2016. Assisted in drywall prep, field camp set-up, cleaning, minor repairs.
- Panel member**, National Science Foundation, 2014. Reviewed ~24 proposals for panel, prepared written evaluations and summaries of panel discussions.
- Facilitator**, EPSCoR Tri-state snow camp, Boise, Idaho, 2014.
- Committee member**, Nawotniak 3rd year pre-tenure review. 2013-2014.
- Committee member**, AGU Surface Hydrology Technical Committee. 2013-present.
- Undergraduate Advisor**, Earth & Environmental Systems degree program, 2013-present.
Advise ~20 undergraduate majors or prospective majors each semester. Developed a new flowchart to help see dependencies through five complex multi-disciplinary tracks within the degree program. Tested and provided troubleshooting advice on the new online degree auditing system.
- Committee member**, Dept. of Geosciences Ph.D. committee, 2013-present.
Prepare and shepherd new Ph.D. program descriptions through the ISU system. Develop standards and timelines for student milestones, including qualifying exams and proposal defense.
- Committee member**, Dept. of Geosciences Earth and Environmental Systems (EES) major curriculum committee, 2012-present.
Revise curriculum requirements and scheduling for EES undergraduate curriculum. Distinguish between BA and BS. Update courses to reflect current offerings.
- Committee member**, Dept. of Geosciences Objective 8 course proposal committee. 2012.
Developed successful proposal for the General Education and University Curriculum Councils for a new large-enrollment, lower-division course to improve scientific data literacy.

Professional Service and Membership (continued)

Committee member, Dept. of Geosciences, Fall picnic committee. 2012.

Helped to organize the department fall picnic.

Session Chair, AGU Fall Meeting, 2007, 2011, 2012, 2014, 2016.

Organized oral and poster sessions with colleagues on permafrost degradation, integrated watershed processes, hydrologic connectivity, runoff generation, and overland flow.

Discussion Leader, Gordon Research Seminar on Catchment Science, July 2011, Bates College, ME.

Science Liaison, Toolik Field Station, August-September 2010 and 2011.

Served as a point-of-contact between the staff and scientists at an Arctic field station.

Facilitator, Berkeley Catchment Science Symposium, 2006-2009.

Helped to set up, organize and run annual day-long 60- to 150-person meeting at UC-Berkeley.

Reviewer, National Science Foundation Office of Polar Programs, Geosciences, Geobiology and Low Temperature Geochemistry, Geoinformatics, Arctic Natural Sciences and CAREER awards, CUAHSI Pathfinder Awards, DOE, NASA, Univ. of Alaska Fairbanks grant awards, the Swiss National Science Foundation, Geophysical Research Letters, Water Resources Research, Hydrological Processes, Journal of Hydrology, Ecohydrology, JGR-Biogeography, Biogeosciences.

Facilitator, Gilbert Club Geomorphology Meeting, 2003-2009.

Served on several organizational teams for annual 250-person day-long meeting.

Coordinator, Earth and Planetary Science Department Speaker series, Spring 2006.

Organized weekly visits and receptions for prominent speakers.

Coordinator, Brown Bag Weekly Department Seminar series, Fall 2004.

Solicited speakers, organized logistics and promoted weekly student speaker series.

Member, American Geophysical Union, 2002-present; Earth Science Women's Network, 2008-present.

Outreach

Presentations

Continuing Education presentation on water quality in the Lower Portneuf River Valley, Spring 2016.

Sensitivity of mountain snowpacks, Geologists of Jackson Hole, Jan 2016.

MILES immersion teacher training, Portneuf water flow and quality, Summers 2014, 2015.

1st year undergraduate student "Water Tour" of the Portneuf Valley, Fall 2014.

WonderVisions/FrontierScientists.com video outreach, summer 2013.

PolarTREC presentation to Dawson High School, Colorado Springs, CO. October 2012.

Outreach (continued)

Presentations (continued)

Follow-up interview Sequim, WA March 2011.
Sequim, WA environmental group, climate change in the Arctic, May 2010.
Penn State Research Expo, Arctic research, March 2010.
Caspar Creek Research Meeting, with foresters, fire managers, and scientists, 2007.
Sagehen Field Station “Meet the Researchers” event, 2005.
Cincinnati Day School, tropical research and working abroad, 2003.
Panamanian park rangers, flowpath research (in Spanish), 2002.
UC Business Spanish classes, working abroad, 2001-2003.

Interviews & press

ScienceTrek question and answer session on water, Spring 2015.
Panel on water issues in Pocatello City Hall, Spring 2015.
Idaho Public Television short on tree water use at Gibson Jack watershed, Spring 2015.
KIFI Idaho Falls interview with Spring 2012 Snow Hydrology class field trip, March 2012.
Journalists participating in the Woods Hole Arctic journalism course, June 2010.
Local NPR radio station at Sagehen Creek, near Lake Tahoe, CA, 2005.

Other Skills and Training

Fluent in Spanish.