

**STEPHANIE K. KAMPF**

Associate Professor

Department of Ecosystem Science and Sustainability

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**EDUCATION:**

*University of Washington, Ph.D., 2006*

- Department of Civil and Environmental Engineering

*University of Nevada, Reno, M.S. Hydrogeology, 2002*

- Graduate Program of Hydrologic Sciences

*Williams College, Williamstown, MA, B.A., 1998*

- Degree with Honors in Geosciences; Concentration in Environmental Studies

**PROFESSIONAL EXPERIENCE:**

*Colorado State University,*

- Associate Professor, *2013-present*
- Assistant Professor, *2007-2013*

**TEACHING:**

- **Current**

- **WR 304:** Sustainable Watersheds. Spring 2008, 2012, 2014
- **WR 416:** Land Use Hydrology. Fall 2009-2011, 2013-2015
- **WR 440:** Watershed Problem Analysis. Spring 2016
- **WR 616:** Hillslope Hydrology and Runoff Processes. Spring 2012, 2014, 2016

- **Past**

- **GR 210:** Physical Geography. Spring 2009, 2010
- **WR 420:** Watershed Practicum. Fall 2008
- **WR 440:** Watershed Problem Analysis (20%). Spring 2007, 2008
- **WR/CIVE 524:** Modeling Watershed Hydrology. Spring 2007, 2009, 2011, 2013
- **NR 540A:** Water Resources (for Conservation Leadership Through Learning, CLTL masters program). Fall 2010
- **NR 544A:** Watershed Science Methods (for CLTL). Spring 2011

**PUBLICATIONS:***\*student author*

- (30) Kampf SK, Faulconer J, Shaw JR, Sutfin NA, Cooper DJ. 2016. Rain and channel flow supplements to subsurface water beneath ephemeral stream channels. *Journal of Hydrology* 536, 524-533. DOI: 10.1016/j.jhydrol.2016.03.016.
- (29) Kampf SK, Lefsky MA. 2016. Transition of dominant peak flow source from snowmelt to rainfall along the Colorado Front Range: Historical patterns, trends, and lessons from the 2013 Colorado Front Range floods. *Water Resources Research*. doi:10.1002/2015WR017784.
- (28) Fassnacht SR, Sexstone GA, Kashipazha AH, López-Moreno JI, Jasinski MF, Kampf SK, Von Thaden BC, 2015. Deriving snow-cover depletion curves for different spatial scales from remote sensing and snow telemetry data. *Hydrological Processes*. DOI: 10.1002/hyp.10730.
- (27) Kampf S, Markus J, Heath J, Moore C. 2015. Snowmelt and soil moisture dynamics on steep subalpine hillslopes. *Hydrological Processes* 29(5), 712-723. DOI 10.1002/hyp.10179.
- \*(26) Moore C, Kampf S, Stone B, Richer E. 2015. A GIS-based method for defining snow zones: application to the western United States. *Geocarto International* 30(1), 62-81, DOI 10.1080/10106049.2014.885089.
- \*(25) Formetta G, Kampf SK, David O, Rigon R. 2014. Snow water equivalent modeling components in NewAge-JGrass. *Geoscientific Model Development* 7. 725-736, DOI 10.5194/gmd-7-725-2014.
- \*(24) Hastings B, Kampf S. 2014. Evaluation of digital channel network derivation methods in a glaciated subalpine catchment. *Earth Surface Processes and Landforms* 39(13), 1790-1802. DOI: 10.1002/esp.3566.
- (23) Lanini JS, Dozier AQ, Furey PR, Kampf SK, 2014. Stochastic method for examining vulnerability of hydropower generation and reservoir operations to climate change: Case study of Dworshak Reservoir in Idaho. *Journal of Water Resources Planning and Management* 140(9). DOI 10.1061/(ASCE)WR.1943-5452.0000426, 05014004.
- (22) Kampf S, Richer E, 2014. Estimating source regions for snowmelt runoff in a Rocky Mountain basin: Tests of a data-based conceptual modeling approach. *Hydrological Processes* 28, 2237-2250. DOI: 10.1002/hyp.9751.
- \*(21) Richer EE, Kampf SK, Fassnacht SR, Moore CC, 2013. Spatiotemporal index for analysing controls on snow climatology: Application in the Colorado Front Range. *Physical Geography*. 34(2), 85-107, DOI: 10.1080/02723646.2013.787578.
- \*(20) Cristea NC, Kampf SK, Burges SJ, 2013. Revised coefficients for Priestley-Taylor and Makkink-Hansen equations for estimating daily reference evapotranspiration. *Journal of Hydrologic Engineering*. 18, 1289-1300.
- (19) Kampf SK, Mirus B, 2013. Subsurface and surface flow leading to channel initiation. In: JF Shroder (ed.) *Treatise on Geomorphology*, Volume 9, pp. 22-42. San Diego: Academic Press.
- \*(18) Cristea N, Kampf SK, Burges SJ, 2013. Linear models for estimating annual and growing season reference evapotranspiration using averages of weather variables. *International Journal of Climatology*. 33(2), 376-387, DOI: 10.1002/joc.3430.
- (17) Furey PR, Kampf SK, Lanini J, Dozier A, 2012. A stochastic conceptual modeling approach for examining the effects of climate change on streamflows in mountain basins. *Journal of Hydrometeorology* June, pp. 837-855. DOI:10.1175/JHM-D-11-037.1.
- (16) McNeeley SM, Tessoroff SA, Lazarus H, Heikkila T, Ferguson IM, Arrigo JS, Attari SZ, Cianfrani CM, Dilling L, Gurdak JJ, Kampf SK, Kauneckis D, Kirchhoff CJ, Lee J, Lintner BR, Mahoney KM, Opitz-Stapleton S, Ray P, South AB, Stubblefield, AP, Brugger J, 2012. Catalyzing frontiers in

water-climate-society research: a view from early career scientists and junior faculty. *Bulletin of the American Meteorological Society*, DOI:10.1175/BAMS-D-11-00221.1.

- \*(15) Cadol D, Kampf S, Wohl E, 2012. Effects of evapotranspiration on baseflow in a tropical headwater catchment. *Journal of Hydrology* 462-463, 4-14. DOI:10.1016/j.jhydrol.2012.04.060.
- (14) Kampf SK, 2011. Variability and persistence of hillslope initial conditions: A continuous perspective on subsurface flow response to rain events. *Journal of Hydrology* 404, 176-185.
- (13) Mirus BB, Loague K, Cristea NC, Burges SJ, Kampf SK, 2011. A synthetic hydrologic-response dataset. *Hydrological Processes*, doi:10.1002/hyp.8185.
- (12) Kampf SK, Burges SJ, 2010. Quantifying the water balance in a planar hillslope plot: Effects of measurement errors on flow prediction. *Journal of Hydrology* 380, 191-202.
- (11) Mirus B, Loague K, VanderKwaak J, Kampf S, Burges S, 2009. A hypothetical reality of Tarrawarra-like hydrologic response. *Hydrological Processes* doi:10.1002/hyp.7241.
- (10) Kampf SK, Burges SJ, 2007a. A framework for classifying and comparing distributed hillslope and catchment hydrologic models. *Water Resources Research*. 43, W05423, doi:10.1029/2006WR005370.
- (9) Kampf SK, Burges SJ, 2007b. Parameter estimation for a physics-based distributed hydrologic model using measured outflow fluxes and internal moisture states. *Water Resources Research* 43, W12414, doi:10.1029/2006WR005605.
- (8) Dethier DP, Kampf SK, Sawyer DA, Budahn JR, 2007. Chemical zonation in the upper Bandelier Tuff: Evidence from the chemistry of distal outcrops, Puye Quadrangle. *New Mexico Geological Society Guidebook*, 58<sup>th</sup> Field Conference, Geology of the Jemez Mountain Region II, pp. 333-343.
- (7) Dethier DP, Kampf SK, 2007. Reconstructing pyroclastic flow dynamics and landscape evolution using the upper Bandelier Tuff, Puye Quadrangle, New Mexico. *New Mexico Geological Society Guidebook*, 58<sup>th</sup> Field Conference, Geology of the Jemez Mountain Region II, pp. 344-353.
- (6) Kampf SK, Tyler SW, 2006. Spatial characterization of evaporation and land surface energy fluxes at the Salar de Atacama, Northern Chile using ASTER image classification. *Advances in Water Resources* 29: 336-354.
- (5) Hancock RN, Gillespie A, Cherkauer KA, Kay JE, Burges SJ, Kampf SK, 2006. Accuracy and uncertainty of TIR remote sensing of stream temperatures at multiple spatial scales. *Remote Sensing of Environment*. 100, pp. 427-440.
- (4) Kampf SK, Tyler SW, Ortiz C, Muñoz JF, Adkins P, 2005. Evaporation and land surface energy budget at the Salar de Atacama, Northern Chile. *Journal of Hydrology* 310, pp. 236-252.
- (3) Kay JE, Kampf SK, Hancock RN, Cherkauer KA, Gillespie AR, Burges SJ, 2005. Accuracy of lake and stream temperatures determined from thermal-infrared imagery. *Journal of the American Water Resources Association*, October, pp. 1161-1175.
- (2) Cherkauer KA, Burges SJ, Hancock RN, Kay JE, Kampf SK, Gillespie AR, 2005. Assessing satellite-based and aircraft-based thermal infrared remote sensing for monitoring Pacific Northwest river temperature. *Journal of the American Water Resources Association*, 41(5), October, pp. 1149-1159.
- (1) Kampf SK, Salazar M, Tyler SW, 2002. Preliminary investigations of effluent drainage from mining heap leach facilities. *Vadose Zone Journal* 1:186-196.

## **GRANTS RECEIVED:**

- (2015-2018) Threshold hydrologic change across the intermittent-persistent snow transition. PI: Kampf S. National Science Foundation.
- (2015-2016) Does wildfire risk reduction lead to downstream watershed service outcomes? An integrated wildfire-erosion-economic analysis of return on investment from fuel treatments in Colorado. PI Jones K, Co-PIs Kampf S, Cheng T, Wolk B, Pelz K, Wilson C. McIntire-Stennis, USDA.
- (2014-2015) Effects of mulch treatments on peak flows, sediment delivery, and water quality in the High Park Fire. PI: Kampf S, Co-PIs: Ryan-Burkett S, Rhoades C, MacDonald L, Nelson P, Covino T, Hall E. City of Greeley, CO.
- (2014-2017) Wildfire impacts on peak flows and sediment delivery: implications for irrigation infrastructure and management. Agricultural Experiment Station. PI: Nelson P, Co-Pis: Kampf S, MacDonald L.
- (2014-2018) Pathways to Environmental Science and Sustainability. PI: Moore J, Co-PIs: Felix O, Kampf S, Boone R, Conant R. National Science Foundation.
- (2013-2016) Northern Colorado WAMS Initiative. PI: Moore J, Co-Pis/Collaborators: Boone R, Bowser G, Conant R, Felix O, Kampf S, Rangel M, Tschillard R, Wallenstein M. USDA Women and Minorities in Science, Technology, Engineering and Mathematics Fields Programs (WAMS).
- (2013-2016) Collaborative Research: Spatial dynamics of burn severity and post-fire recovery in the High Park Fire burn area. PI: Lefsky M, Co-PIs: Kampf S, MacDonald L, Rocca M, Romme W, Kampe T. National Science Foundation.
- (2013) State of the Cache la Poudre: A watershed monitoring network. PI: Kampf S, CoPIs: Laituri M, Rathburn S, Fassnacht S, Evangelista, P. Warner College of Natural Resources Teaching, Research, and Outreach Grant.
- (2012-2013) RAPID response to the High Park Fire, Larimer County, CO. PI: Lefsky M, CoPIs: Kampf S, Romme W. National Science Foundation.
- (2010-2013) Watershed to local scale characterization and functioning of intermittent and ephemeral streams on military lands, PI: Cooper D, CoPIs: Wohl E, Kampf S, Poff L, Harry D. SERDP, DOD Army Research Office.
- (2009-2012) Precision irrigation and nutrient management for production nursery, greenhouse and green roof systems using wireless sensor networks. PI: Lea-Cox JD, CoPIs: Kantor GA, Bauerle WL, van Iersel M, Campbell C, Bauerle T, Ross DS, Ristvey AG, Parker D, King D, Bauer R, Cohan SM, Thomas P, Ruter J, Chappell M, Lefsky MA, Kampf SK, Bissey L. USDA Specialty Crop Research Initiative.
- (2008-2012) Climate change impacts to hydropower generation in Pacific Northwest river basins. PI Kampf S; Collaborator Lanini J. Office of Science (BER), U.S. Department of Energy.
- (2012) Course redesign for GR/WR304, Sustainable Watersheds. CoPIs: Laituri M, Kampf S, Colorado State University Provost Course Redesign Competition.
- (2012) Fostering Learning of Water (FLOW) in WCNR students. PI: Rathburn S, CoPIs: Ronayne M, Sanford W, Wohl E, Fassnacht S, Kampf S, Colorado State University Warner College of Natural Resources Mini-Grant.
- (2008-2010) Hydrologic analysis and process-based modeling for the Upper Cache la Poudre Basin. Colorado Water Institute and Cache la Poudre Water Users Association. PI: Kampf S.
- (2009) Spatial sensor network for monitoring snowmelt, vegetation, and soil moisture dynamics, Loch Vale Watershed, Rocky Mountain National Park. PI: Kampf S, CoPIs: Klein J, Baron J. Colorado State University Warner College of Natural Resources Mini-Grant.

**ADVISING:*****Graduate student advisees:***

- Eric Richer, Pedro Lopez, Cara Moore, Blaine Hastings, Sarah Schmeer, Joshua Faulconer, Adam Johnson, Codie Wilson, Freddy Saavedra, John Hammond, Chenchen Ma (co-advisor)

***Post-doc advisees:***

- Peter Furey, Benjamin Conrad

***Graduate Committees:***

- Service on over 50 Masters and PhD committees at Colorado State University in Watershed Science, Graduate Degree Program in Ecology, Civil and Environmental Engineering, Geosciences, and Human Dimensions of Natural Resources. Faculty member in the Colorado Alliance for Graduate Education and the Professoriate.

***Undergraduates:***

- Active advising of undergraduate students in the Watershed Science major. Faculty advisor for the Watershed Club and Alpha Sigma Kappa organization for women in technical studies.

**PROFESSIONAL SERVICE:*****Committees***

- Watershed Science undergraduate coordinator, CSU Water Center Executive Committee, Natural Resources Ecology Laboratory Executive Committee

***Reviewing***

- Books: Cambridge University Press
- Proposals: National Science Foundation, US Department of Energy, French National Research Agency, CONICYT Chile
- Journals: Advances in Water Resources, Atmosphere, Climatic Change, Earth Surface Processes and Landforms, Ecohydrology, Geological Society of America Bulletin, Geophysical Research Letters, Hydrological Processes, Hydrology and Earth System Sciences, Journal of the American Water Resources Association, Journal of Hydrologic Engineering, Journal of Hydrology, Journal of Hydrology Regional Studies, Journal of Hydrometeorology, Journal of Water Resources Planning and Management, Meteorology and Atmospheric Physics, Nature Communications, Pedosphere, Physical Geography, Restoration Ecology, Vadose Zone Journal, Water Resources Research

***Affiliations***

- American Geophysical Union

**FELLOWSHIPS, HONORS:*****Professional***

- Best advisor, Natural Resources Ecology Laboratory, Colorado State University, 2014
- Nominee, Monfort Professor, Colorado State University, 2012
- Faculty leadership award, Warner College of Natural Resources, 2010

***Student***

- Fulbright Student Fellowship, 1998-1999; NASA Earth System Science Fellowship, 2001-2004; P.E.O. Scholar Award, 2005-2006 academic year; AGU Hydrology Section, outstanding student paper, Fall 2006; College of Engineering Outstanding Teaching Assistant, 2005; College of Engineering Osberg Family Trust Fellowship, Spring 2005; Society of Women Engineers Outstanding Female in Civil and Environ. Engineering, 2005; Outstanding M.S. Student, Graduate Program for Hydrologic Sciences, 2002