Curriculum Vitae

Beverley C. Wemple

Professor of Geography, College of Arts & Sciences
Professor of Forestry, Rubenstein School of Environment and Natural Resources
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EDUCATION:

Institution	Major, Minor	Degree
Oregon State University	Forest Science, Bioresource Engineering	Ph.D., 1998
Oregon State University	Physical Geography, Geographic Techniques	M.S., 1994
University of Richmond	Economics and German	B.A., 1986

ACADEMIC APPOINTMENTS:

Chairperson, Department of Geography. University of Vermont, Burlington, VT. 2018-present.

Professor, Department of Geography. Secondary faculty appointment, Forestry, Rubenstein School of Environment and Natural Resources, University of Vermont, Burlington, VT. 2018-present.

Visiting Fulbright Scholar, Universidad Politécnica Salesiana and Fundación Cordillera Tropical, Cuenca, Ecuador. January – June 2017.

Associate Professor, Department of Geography. Secondary faculty appointment in the Rubenstein School of Environment and Natural Resources, University of Vermont, Burlington, VT. 2005-2018. Acting Chair of Geography, AY 2008-09.

Assistant Professor. Department of Geography, University of Vermont, Burlington, VT. 1999-2005.

Postdoctoral Research Associate. U.S.D.A. Forest Service, PNW Research Station, Corvallis, OR. 1999.

EDITORIAL APPOINTMENTS:

Associate Editor, Water Resources Research, since July 2017

Guest Editor (with Charles Luce), Earth Surface Processes and Landforms, 2001.

PUBLICATIONS:

Superscript symbols indicate student† or post-doctoral scholar‡ as co-authors

Ogasawara, M.E.K.†, G.R. Santos, C.C. Cassiano, **B.C. Wemple**, S. F. B. Ferraz. 2020. Runoff and Sediment yield from forested catchments under varying management intensities: Insights from a subtropical region of Brazil. Land Degradation and Development, 61: 1-12, DOI: 10.1002/ldr.3753.

Gourevitch, J.D. †, N.K. Singh‡, J. Minot, K. Raub, D. Rizzo, **B. Wemple**, T. Ricketts. 2020. Spatial targeting of floodplain restoration to equitably mitigate flood risk. *Global Environmental Change*, 61, DOI: 10.1016/j.gloenvcha.2020.102050.

Seybold, E. ‡, A.J. Gold, S.P. Inamdar, C. Adair, W.B. Bowden, M.C.H. Vaughan, S.M. Pradhanang, K. Addy, J.B. Shanley, A. Vermilyea, D.F. Levia, **B.C. Wemple**, A.W. Schroth. 2019. Influence of land use and hydrologic variability on seasonal dissolved organic carbon and nitrate export: insights from a multi-year regional analysis for the northeastern USA. *Biogeochemistry*, 146: 31–49. DOI: 10.1007/s10533-019-00609-x

Singh, N.K. ‡, J.D. Gourevitch†, **B.C. Wemple**, K.B. Watson, D.M. Rizzo, S. Polasky, T.H. Ricketts. 2019. Optimizing wetland restoration to improve water quality at a regional scale. *Environmental Research Letters*, 14: 064006, DOI: 10.1088/1748-9326/ab1827.

Duque-Sarango, P, R. Cajamarca-Rivadeneira, **B.C. Wemple**, M.E. Delgado-Fernández. Estimation of the water balance of for a small tropical Andean catchment. 2019. *La Granja: Revista de Ciencias de la Vida*, 29(1): 56-69, DOI: 10.17163/lgr.n29.2019.05.

Martin, D. J., C. Ely, **B.C. Wemple**. 2019. Stream bank erosion in an Andean páramo river system: Implications for hydro-development and carbon dynamics in the neotropical Andes. *Journal of Mountain Science,* 16(2): 243-255, DOI: 10.1007/s11629-018-5110-3.

Hoyos, N., A. Correa-Metrio, S. M. Jepsen, **B. Wemple**, S. Valencia, M. Marsik, R. Doria, J. Escobar, J. C. Restrepo, and M. I. Velez. 2018. Modeling Streamflow Response to Persistent Drought in a Coastal Tropical Mountainous Watershed, Sierra Nevada De Santa Marta, Colombia. *Water*, 11, 94, DOI:10.3390/w11010094.

Harmon, T.C., R.L. Smyth, S. Chandra, D. Conde, R. Dhungel, J. Escobar, N. Hoyos, J.P. Lozoya, M. Nin, G.M.E. Perillo, S. Pincetl, M.C. Piccolo, B. Reid, J.A. Rusak, F. Scordo, M.I. Velez, S.R. Villamizar, **B. Wemple** and M. Zilio. 2018. Socioeconomic and Environmental Proxies for Comparing Freshwater Ecosystem Service Threats across International Sites: A Diagnostic Approach. *Water*, 7, 1578, DOI:10.3390/w10111578.

Perillo, V.L.‡, D. S. Ross, **B.C. Wemple**, C. Ballling†, and L.E. Lemieux†. 2018. Stream Corridor Soil Phosphorus Availability in a Forested–Agricultural Mixed Land Use Watershed. *Journal of Environmental Quality*, DOI:10.2134/jeq2018.05.0186.

Ross, D.S., **B.C. Wemple**, L.J. Willson†, C. Balling†, K.L. Underwood†, and S.D. Hamshaw†. 2018. Impact of an Extreme Storm Event on River Corridor Bank Erosion and Phosphorus Mobilization in a Mountainous Watershed in the Northeastern USA. *Journal of Geophysical Research Biogeosciences*, DOI: 10.1029/2018JG004497.

Vaughan, M.C.H†, W. B. Bowden, J.B. Shanley, A. Vermilyea, **B. Wemple**, and A. W. Schroth. 2018. Using in situ UV-Visible spectrophotometer sensors to quantify riverine phosphorus partitioning and concentration at a high frequency. *Limnology and Oceanography Methods*, DOI: 10.1002/lom3.10287.

Hamshaw, S. D.†, M.M. Dewoolkar, A. W. Schroth, **B.C. Wemple,** and D. M. Rizzo. 2018. A new machine-learning approach for classifying hysteresis in suspended-sediment discharge

relationships using high-frequency monitoring data. *Water Resources Research*, DOI: 10.1029/2017WR022238.

Stryker, J.†, **B. Wemple** and A. Bomblies. 2018. The impacts of climate change on sediment mobilization and transport. *Journal of Hydrology Regional Studies*, 17: 83-94, DOI: 10.1016/j.ejrh.2018.04.003.

Singh, N. ‡, **B.C. Wemple**, A. Bomblies, T.H. Ricketts. 2018. Simulating stream response to floodplain connectivity and revegetation from reach to watershed scales: Implications for stream management. *Science of the Total Environment*, DOI:10.1016/j.scitotenv.2018.03.198.

Shrestha, P.†, S. Hurley, and **B.C. Wemple**. 2018. Effects of different soil media, vegetation, and hydrologic treatments on nutrient and sediment removal in roadside bioretention systems. *Ecological Engineering*. DOI: 10.1016/j.ecoleng.2017.12.004

Wemple, B.C., T. Browning, A.D. Ziegler, J. Celi, K.P. Chun, F. Jaramillo, N. Leite, S.J. Ramchunder, J.N. Negishi, X. Palomeque, D. Sawyer. 2017. Ecohydrological disturbances associated with roads: Current knowledge, research needs, and management concerns with reference to the Tropics. *Ecohydrology*. DOI: 10.1002/eco.1881.

Wemple, B.C., G.E. Clark**†**, D.S. Ross and D.M. Rizzo. 2017. Identifying the spatial pattern and importance of hydro-geomorphic drainage impairments on unpaved roads in the northeastern USA. *Earth Surface Processes and Landforms*. DOI: 10.1002/esp.4113.

Stryker, J.†, **B. Wemple** and A. Bomblies. 2017. Modeling sediment mobilization using a distributed hydrological model coupled with a bank stability model. *Water Resources Research*. DOI: 10.1002/2016WR019143.

Wemple, B.C. 2016. Controlling polluted stormwater runoff from roads. *Vermont Journal of Environmental Law*, 17: 785-810.

Mohammed, I. N.‡, A. Bomblies, and **B. C. Wemple**, 2015. The use of CMIP5 data to simulate climate change impacts on flow regime within the Lake Champlain Basin, *Journal of Hydrology Regional Studies*, 3, 160-186, DOI:10.1016/j.ejrh.2015.01.002.

Pechenick, A.†, D. M. Rizzo, L. A. Morrissey, K. Garvey†, K. Underwood† and **B. C. Wemple**, 2014. A multi-scale statistical approach to assess the effects of hydrological connectivity of road and stream networks on geomorphic channel condition. *Earth Surface Processes and Landforms*. DOI: 10.1002/esp.3611

Penn, C. A.†, **B. C. Wemple**, and J. L. Campbell, 2012. Forest influences on snow accumulation and snowmelt at the Hubbard Brook Experimental Forest, New Hampshire, USA. *Hydrological Processes*, 26, 2524–2534, DOI: 10.1002/hyp.9450.

Ross, D. S., J. B. Shanley, J. L. Campbell, G. B. Lawrence, S. W. Bailey, G. E. Likens, **B. Wemple**, G. Fredriksen†, and A. E. Jamison†, 2011. Spatial patterns of soil nitrification and nitrate export from forested headwaters in the northeastern USA. *Journal of Geophysical Research*, DOI: 10.1029/2011JG001740.

Ross, D. S. and **B. C. Wemple**, 2011. Soil nitrification in a large forested watershed, Ranch Brook (Vermont) mirrors patterns in smaller northeastern USA catchments. *Forest Ecology and Management*, 262: 1084-1093.

Pearce, A. R. †, P.R. Bierman, G.K. Druschel, C. Massey, D.M. Rizzo, M.C. Watzin, and **B.C. Wemple**, 2010. Pitfalls and successes of developing an interdisciplinary watershed field camp. *Journal of Geoscience Education,* 58(3): 213-220.

Jones, J.A., G.L. Achterman, L.A. Augustine, I.F. Creed, P.F. Ffolliott, L. MacDonald, **B.C. Wemple**, 2009. Hydrologic effects of a changing forested landscape –challenges for the hydrological sciences. *Hydrological Processes*, 23: 2699-2704. DOI: 10.1002/hyp.7404.

Ross, D. S., **B. C. Wemple**, A E. Jamison†, G. Fredriksen†, J. B. Shanley, G. B. Lawrence, S. W. Bailey, J. L. Campbell, 2009. A Cross-Site Comparison of Factors Influencing Soil Nitrification Rates in Northeastern USA Forested Watersheds. *Ecosystems*, 12(1): 158-178.

Ambers, R. K. R., and **B. C. Wemple**, 2008. Reservoir Sedimentation Dynamics: Interplay and Implications of Human and Geologic Processes. *Northeastern Geology and Environmental Science*, 30(1):49-60.

Wemple, B. C., J. Shanley, J. Denner, D. Ross, and K. Mills†. 2007. Hydrology and water quality in two mountain basins of the northeastern US: assessing baseline conditions and effects of ski area development. *Hydrological Processes,* DOI: 10.1002/hyp.6700.

Mirus, B. B.†, B. A. Ebel, †, K. Loague, and **B. C. Wemple**, 2007. Simulated effect of a forest road on near- surface hydrologic response: redux. *Earth Surface Processes and Landforms*, 32: 126-142. DOI 10.1002/esp1387.

Ross, D. S., G. Fredriksen†, A.E. Jamison†, **B.C. Wemple**, S.W. Bailey, J. B. Shanley, and G. B. Lawrence, 2006. One-day rate measurements for estimating net nitrification potential in humid forest soils. *Forest Ecology and Management*, 230:91-95.

Waichler, S. R., **B. C. Wemple**, and M. S. Wigmosta, 2005. Simulation of water balance and forest treatment effects at the H. J. Andrews Experimental Forest. *Hydrological Processes.* DOI:10.1002/hyp.5841.

Dutton, A. L.†, K. Loague, and **B.C. Wemple**, 2005. Simulated effect of a forest road on near-surface hydrologic response and slope stability, *Earth Surface Processes and Landforms*, 30: 325-338. DOI: 10.1002/esp.1144.

Wemple, B. C. and J. A. Jones, 2003. Runoff production on forest roads in a steep, mountain catchment, *Water Resources Research*, 39(8), 1220, DOI:10.1029/2002WR001744.

Shanley, J. B. and **B. C. Wemple**, 2002. Water Quantity and Quality in the Mountain Environment in J. Milne and E. Miller (eds.) *Mountain Resorts: Ecology and the Law* special issue of the *Vermont Law Review,* 26(3): 717-751.

Wemple, B. C., F. J. Swanson, and J. A. Jones, 2001. Forest roads and geomorphic process interactions, Cascade Range, Oregon, *Earth Surface Processes and Landforms,* 26: 191-204.

Jones, J. A., F. J. Swanson, **B. C. Wemple**, and K. U. Snyder, 2000. Effects of roads on hydrology, geomorphology, and disturbances patches in stream networks, *Conservation Biology,* 14(1): 76-85.

Wemple, B. C., J. A. Jones and G. E. Grant, 1996. Channel network extension by logging roads in two basins, Western Cascades, Oregon, *Water Resources Bulletin*, 32(6): 1195-1207.

Peer-reviewed books and book chapters:

Committee on Hydrologic Impacts of Forest Management (**B. Wemple**, committee member and co-author), 2008. *Hydrologic Effects of a Changing Forest Landscape*. National Research Council Water Science and Technology Board, Division on Earth and Life Studies, 168 pp.; ISBN 0-309-12108-6.

Shanley, J. B. and **B. Wemple**, 2009. Water Quality and Quantity in the Mountain Environment, *in* J. E. Milne, J. LeMense, and R. A. Virginia (eds.), *Mountain Resorts: Ecology and the Law*, Surrey, U.K., Ashgate Publishing Ltd.

Spies, T. A., D. E. Hibbs, J. L. Ohmann, G. H. Reeves, R. J. Pabst, F. J. Swanson, C. Whitlock, J. Jones, **B. C. Wemple**, L. A. Parendes, and B. A. Schrader, 2002. The ecological basis of forest ecosystem management in the Oregon Coast Range, *in*: S. D. Hobbs, J. P. Hayes, R. L. Johnson, G. H. Reeves, T. A Spies, J. C. Tappeiner II, and G. E. Wells, eds., *Forest and Stream Management in the Oregon Coast Range*. Oregon State University Press, Corvallis, OR.

Conference proceedings, technical reports and commentaries (peer reviewed):

Wemple, B. C., 2013. Assessing the Effects of Unpaved Roads on Lake Champlain Water Quality. Technical Report No. 74. Lake Champlain Basin Program. 69 pages + Appendices. Available at http://www.lcbp.org/wp-content/uploads/2013/07/74_Road-Study_revised_June2013.pdf

Luce, C. H. and **B. C. Wemple**, 2001. Introduction to the special issue on hydrologic and geomorphic effects of forest roads, *Earth Surface Processes and Landforms*, 26: 111-113.

Skaugset, A. and **B. C. Wemple**, 1999. The response of forest roads on steep, landslide-prone terrain in Western Oregon to the February 1996 storm. In: J. Sessions and W. Chung, eds., *Proceedings of the International Mountain Logging and 10th Northwest Skyline Symposium*, Corvallis, OR.

Johnson, S. L., G. E. Grant, F. J. Swanson, and **B. C. Wemple**, 1997. Lessons from a flood: an integrated view of the 1996 flood in the McKenzie River basin. In: A. Laenen, ed., The Pacific-Northwest Flood of February 1996: Causes, Effects and Consequences, *Proceedings of the October 1996 Water Issues Conference* of the Oregon Water Resources Research Institute and the American Institute of Hydrology, Portland, OR.

INVITED PRESENTATIONS:

Interactions between Human and Natural Systems along Rural Road Networks: the case of the Lake Champlain basin. Catskills Environmental Research and Monitoring Conference, Highmount, NY. October 25, 2018.

A Two-way Road: Integrating Science & Community Engagement to Protect Water Quality & Build Resiliency in a Rural Mountain Environment. National Social-Environmental Synthesis Center, Annapolis, Maryland. October 20, 2015.

Understanding the role of rural transportation networks on runoff production and erosion: implications for adaptive design and community resilience. Catchment Science: Interactions of Hydrology, Biology, and Geochemistry. Gordon Research Conference, Andover, New Hampshire. June 14-19, 2015.

Understanding the Effects of Rural Roads on Water Quality and Channel Morphology. Norwich University Larsen Lecture Series, Northfield, Vermont. February 19, 2015.

Understanding the Effects of Roads in Upland Settings on Hydrology, Geomorphology and Water Quality. Chesapeake Bay Foundation's Replumbing the Chesapeake Bay Watershed conference, Easton, Maryland. October 9-10, 2014.

Evaluating the Effects of Unpaved Roads on Water Quality and Channel Morphology in Northern New England: Implications for Policy and Management. University of Massachusetts Geosciences Seminar Series, Amherst, Massachusetts. February 14, 2014.

Assessing the Effects of Unpaved Roads on Water Quality and Channel Morphology in the Lake Champlain Basin. Cary Institute of Ecosystem Studies, Millbrook, New York. February 14, 2013.

Modeling the Effects of Forest Roads on Hillslope Hydrology in a Steep Mountain Catchment of the Pacific Northwest U.S.A. 3rd Forest Management Workshop, Canberra, Australia. March 23-25, 2004.

Runoff Production on Forest Roads in a Steep Mountain Landscape. American Geophysical Union Chapman Conference on State-of-the-Art in Hillslope Hydrology, Sunriver, Oregon. October 2001.

Watershed Processes, Roads, and Ecosystem Management. Ninth Annual Eastern National Forests Watersheds and Aquatic Ecology Workshop. Rutland, Vermont. June 2000.

Hydrologic role of forest roads in two large basins, Western Cascades, Oregon. American Institute of Hydrology, Pacific Northwest regional meeting. Corvallis, Oregon. October 1993.

CONTRIBUTED PRESENTATIONS AT PROFESSIONAL MEETINGS:

Superscript symbols indicate student† or post-doctoral scholar‡ as co-authors

Diehl, R. M., K. L. Underwood, B. C. Wemple, D. S. Ross. Building a mechanistic understanding of phosphorus retention on floodplains to inform restoration prioritization in the Lake Champlain Basin. American Geophysical Union Annual Meeting, Virtual format, December 7-11, 2020.

Matt, J. E. †, K. L. Underwood, J. Gourevitch†, R. M. Diehl, R. M. Seigel†, L. C. Worley†, B. C. Wemple, D. M. Rizzo. An enhanced low-complexity hydraulic model for assessment of

floodplain rehabilitation alternatives. American Geophysical Union Annual Meeting, Virtual format, December 7-11, 2020.

Underwood, K.L., R. Schiff, E. Fitzgerald, J. Stryker, R. Diehl, E. Roy, B. C. Wemple, D. M. Rizzo, M. Kline. Functioning Floodplain Initiative for Improved Flood Resiliency, Restored Water Quality and Enhanced Habitat in Vermont USA. American Geophysical Union Annual Meeting, Virtual format, December 7-11, 2020.

Wemple, B. C., J. B. Shanley, D. S. Ross, J. Duncan. The Mt. Mansfield Paired-Watershed Study: (Nearly) 20 years of monitoring to track high elevation hydrology and development impacts in Vermont and northeastern USA. PA11C-0982. American Geophysical Union Annual Meeting, San Francisco, CA. December 9, 2019.

Drago, S.[†], R. M. Diehl, K. Underwood, J. Gourevitch, B. C. Wemple. Quantifying floodplain water storage and benefits of floodplain restoration for the Lake Champlain Basin in Vermont H53L-1949. American Geophysical Union Annual Meeting, San Francisco, CA. December 13, 2019.

R. M. Diehl, B. C. Wemple, S. Drago[†], D. S. Ross. Building an Understanding of Floodplain Functioning to Inform Effective Management in the Lake Champlain Basin. H53L-1939. American Geophysical Union Annual Meeting, San Francisco, CA. December 13, 2019.

Wemple, B. C., N. K. Singh [‡], J. D. Gourevitch[†], K. B. Watson, D. M. Rizzo, T. H. Ricketts. A framework for spatial optimization of watershed restoration to improve water quality. Association of American Geographers annual meeting, Washington D.C., April 5, 2019.

Seybold, E.C. [‡], B. Lancellotti[†], A. Schroth, C. Adair, J. N. Perdrial, B.C. Wemple, K. Coates, A. Jackson-Mojica. Effects of changing winter snowmelt on watershed nutrient export from forested and agricultural catchments in northern Vermont. B32A-07. American Geophysical Union Annual Meeting, San Francisco, CA. December 12, 2018.

Singh, N.[‡], J., Gourevitch[†], B.C. Wemple, K. Watson, D.M. Rizzo, T. Ricketts. Optimizing wetland restoration to minimize phosphorus loading at a regional scale. H54G-01. American Geophysical Union Annual Meeting, San Francisco, CA. December 14, 2018.

Wemple, B.C., M. Roske, D. Martin, C. Schloegel, P. Arévalo Moscoso. Building partnerships for long-term water monitoring in the southern Ecuadorian Andes. Joint Conference on Forests and Water, International Union of Forest Research Organizations and Latin American Congress on Forests and Water, Valdivia, Chile. November 6, 2018.

Seybold, E. C. [‡], A. Gold, S. P. Inamdar, S. M. Pradhanang, W. B. Bowden, M. Vaughan, K. Addy, J. B. Shanley, A. Vermilyea, R. Sleeper, D. F. Levia, C. Adair, B. C. Wemple, A. W. Schroth. Effects of land use on the timing and magnitude of dissolved organic carbon and nitrate fluxes: a regional analysis of high-frequency sensor measurements from forested, agricultural, and urban watersheds. H53G-1561. American Geophysical Union Annual Meeting, San Francisco, CA. December 15, 2017.

Ryan, S.[†], B. C. Wemple, D. S. Ross. Quantifying stream phosphorus dynamics and total suspended sediment export in forested watersheds in Vermont. Geological Society of America Northeast section meeting, Burlington, VT. March 19, 2018.

Singh, N. ‡, A. Bomblies, Wemple, B.C. Wemple and T. Ricketts. Simulating stream response to floodplain connectivity, reforestation and wetland restoration from reach to catchment scales. EP43A-1871. American Geophysical Union Annual Meeting, San Francisco, CA. December 14, 2017.

Wemple, B. C., D. Curillo†, V. Arevalo†, J. Maza†, I. Malo, P. Arevalo. Spatial and Temporal Variability of Water Quality in Mixed Páramo, Forest and Agricultural Catchments of the Southern Ecuadorian Andes. American Geophysical Union Annual Meeting, San Francisco, CA. December 13, 2017.

Wemple, B. C. and C. Schloegel. Evaluating Water and Suspended Sediment Fluxes from a Headwater River in the Tropical Andes: Insights for evaluating ecosystem condition and degradation. American Geophysical Union Chapman Conference on Tropical Ecohydrology, Cuenca, Ecuador. June 5-9, 2016.

Wemple, B. C. and C. Schloegel. A First Estimate of River Discharge and Sediment Flux from a high Andean Watershed of Southern Ecuador. Regolith, River and Estuary Erosion and Deposition Conference, U.S. Geological Survey Headquarters, Reston, VA. May 12-13, 2016.

Wemple, B. C. and C. Schloegel. Temporal variability and Annual Fluxes of Water, Sediment and Particulate Phosphorus from a Headwater River in the Tropical Andes: Results from a high-frequency monitoring program. H41H-05. American Geophysical Union Annual Meeting, San Francisco, CA. December 17, 2015.

Hamel, P., A. J. Guswa, B. C. Wemple and I. N. Mohammed‡. The Value of Simple Models: Performance of a Spatially-explicit Seasonal Model for Valuing Water Provisioning (InVEST). H41G-1409. American Geophysical Union Annual Meeting, San Francisco, CA. December 17, 2015.

Wemple, B. C. Reconsidering Linkages Between Pollutant Production and Management Alternatives within Upland Forested Landscapes: an example from the Lake Champlain Basin. Association of American Geographers Annual Meeting, Chicago, IL. April 21, 2015.

Hamshaw, S. D.†, K. Underwood†, D. M. Rizzo, B. C. Wemple, and M. Dewoolkar. Using Distributed Continuous Turbidity Monitoring to Inform Sediment and Sediment-bound Nutrient Budgets in a Small Watershed. American Geophysical Union Annual Meeting, San Francisco, CA. December 2014.

Wemple, B. C. Investigating the effects of gravel roads on water quality and channel morphology in the Lake Champlain basin. Association of American Geographers Annual Meeting, Tampa, FL, March 2014.

Mohammed, I. N.‡, B. C. Wemple, and A. Bomblies. Streamflow Regime Sensitivity to Climate Change Impacts within the Lake Champlain Basin. American Geophysical Union Annual Meeting, San Francisco, CA. December 2013.

Hamshaw, S. D.†, K. Underwood†, D. Rizzo, B. C. Wemple and M. Dewoolkar. Prediction of Suspended Sediment in Rivers Using Artificial Neural Networks: Implications for Development of Sediment Budgets. American Geophysical Union Annual Meeting, San Francisco, CA. December 2013.

Wemple, B. C. and D. S. Ross. Assessing the Effects of Unpaved Roads on Lake Champlain Water Quality. 15th meeting of the Global Lake Ecological Observatory Network (GLEON), Bahia Blanca, Argentina. November 2013.

Wemple, B. C., G. E. Clark†, S. Hamshaw†, D. Ross, D. Rizzo, and L. Morrissey. Assessing the Effects of Unpaved Road Networks on Downstream Water Quality in a Forested, Upland Landscape: A multi-scale approach. American Geophysical Union Annual Meeting, San Francisco, CA. December 2012.

Pechenick, A.†, D. Rizzo, L. A. Morrissey, K. Garvey†, K. Underwood†, and B. C. Wemple. Hydrological Connectivity of Road and Stream Networks: Implications for Channel Morphology. American Geophysical Union Annual Meeting, San Francisco, CA. December 2012.

del Peral, A.† and B. C. Wemple. Application of the Distributed Hydrology Soil Vegetation Model (DHSVM) to the Case of Forest Landcover Change and Alpine Development. American Geophysical Union Annual Meeting, San Francisco, CA. December 2012.

Garvey, K.†, L. Morrissey, D. Rizzo, and B. Wemple. Estimating Channel Erosion and Deposition Using Multi-date LiDAR and orthophotography: A case study in the Browns River, Chittenden County, VT. American Geophysical Union Annual Meeting, San Francisco, CA. December 2012.

Wemple, B. C., L. Morrissey, D. Rizzo, D. Ross, K. Garvey†, A. Pechenick†, and G. Clark†. Hydrological Connectivity of Road and Stream Networks: Implications for Material Transfer and Channel Morphology. European Geosciences Union Annual Meeting, Vienna, Austria. April 2012.

del Peral, A.†, B. C. Wemple, and J. B. Shanley. Evaluating the effects of mountain resort development on snowmelt and runoff production: a case study from northern New England, USA. European Geosciences Union Annual Meeting, Vienna, Austria. April 2012.

del Peral, A.† and B. C. Wemple, 2011. Using Distributed Snow Data to Evaluate and Improve the Performance of the Distributed Soil Hydrology Vegetation Model (DHSVM): a test case from the northeastern U.S. American Geophysical Union Fall Meeting. December 2011.

Penn, C.†, B. C. Wemple and J. L. Campbell, 2011. Snow accumulation and melt in a mixed northern hardwood-conifer forest of the northeastern U.S. 68th Annual Eastern Snow Conference, Montreal, Quebec, Canada. June 2011.

Wemple, B. C. and J. B. Shanley, 2010. Assessing the implications of ski area development for snow distribution and runoff production during snowmelt in northern New England, USA. 67th Annual Eastern Snow Conference, Hancock, MA. June 2010.

Penn, C. A.†, B. C. Wemple; J. L. Campbell, 2009. Forest influence on peak snow accumulation and snowmelt in a mixed northern hardwood-conifer forest of the northeastern U.S. American Geophysical Union Fall Meeting. December 2010.

Frolik, J. , C. Skalka, and B. Wemple, 2008. An Investigation of New Snow Water Equivalence Sensing Modalities. American Geophysical Union Annual Meeting, San Francisco, CA. December 2008.

Larsen, T.†, B. Wemple, J. Shanley and S. Arcone, 2008. Forest Cover and Topographic Influences on Snow Distribution in a High-elevation Landscape Managed for Recreation Uses in Vermont. 65th Annual Eastern Snow Conference, Fairlee, VT. May 2008.

Wemple, B. and T. Larsen†, 2008. Spatial patterns of snow distribution in a northern New England mountain landscape and implications for runoff production Association of American Geographers Annual Meeting, Boston, MA. March 2008.

Larsen, T.†, B. Wemple, and W. Keeton. 2007. Forest Cover and Topographic Influences on Snow Distribution in a Mixed Hardwood-Conifer Forest of the Northeastern U.S. American Geophysical Union Annual Meeting, San Francisco, CA. December 2007.

Wemple, B., P. Thomas and J. Shanley. 2006. Geomorphology and Ecology of Mountain Landscapes: an interdisciplinary approach to problem-based learning in a particular geographical setting. American Geophysical Union Annual Meeting, San Francisco, CA. December 2006.

Wemple, B. and R. Ambers, 2004. Multi-scale Analysis of Sediment Yield in a Glaciated Environment. American Geophysical Union Fall Meeting, San Francisco, CA. December 2004.

Zinni, B.†, B. Wemple, A. Lini, and J. Shanley. 2004. Analysis of Hydrologic Flowpaths in two Meso-scale Watersheds, Mt. Mansfield, Vermont. American Geophysical Union Fall Meeting, San Francisco, CA. December 2004.

Wemple, B., J. Shanley, and S. Waichler, 2003. Forest Disturbance through Alpine Ski Area Development: Results of a Paired-Watershed Study in the Northeastern U.S. American Geophysical Union Fall Meeting, San Francisco, CA. December 2003.

Mussleman, K.†, J. Shanley, B. Wemple, P. Bierman, and J. Denner, 2003. Analysis of Spatial Variability of Precipitation and Snow Accumulation on Mount Mansfield, Stowe, Vermont, Geologic Society of America Annual Meeting, Seattle, WA. October 2003.

Wemple, B., J. Shanley, and J. Denner, 2002. Effects of an Alpine Ski Resort on Hydrology and Water Quality in the Northeastern U.S.: Preliminary Findings from a Field Study, American Geophysical Union Fall Meeting, San Francisco, CA. December 2002.

Donna, K.† and B. Wemple, 2002. Channel Adjustment Following Flooding and Land-cover Change on the Upper White River, Vermont, American Geophysical Union Spring Meeting, Washington, D.C. May 2002.

Wemple, B. C., 2002. Forest Roads and Geomorphic Process Interactions: Lessons from an Extreme Flood, Association of American Geographers Annual Meeting, Los Angeles, CA. March 2002.

Waichler, S. R., M. S. Wigmosta, and B. C. Wemple, 2001. Application of DHSVM to Simulate Forest Treatment Effects at the H. J. Andrews Experimental Forest, Chapman Conference on

State-of-the-Art in Hillslope Hydrology, American Geophysical Union, Sunriver, OR. October 2001.

Wemple, B. C. and J. A. Jones, 1998. Road influences on hydrology: investigations from hillslope to watershed scales. American Geophysical Union Fall Meeting, San Francisco, CA. December 1998.

Wemple, B. C., J. A. Jones, G. E. Grant, and J. S. Selker, 1996. Runoff generation mechanisms in a steep, forested catchment: controls on flow contributions to a road network. American Geophysical Union Fall Meeting, San Francisco, CA. December 1996.

Grant, G. E., F. J. Swanson, S. L. Johnson and B. C. Wemple, 1996. A wild flood in a managed landscape: lessons from the February 1996 flood in the Pacific Northwest. *Invited Paper*. American Geophysical Union Fall Meeting, San Francisco, CA. December 1996.

Donald, J. A. †, B. C. Wemple, G. E. Grant, 1996. Interactions of channel and hillslope processes with road networks during the February 1996 flood. American Geophysical Union Fall Meeting, San Francisco, CA. December 1996.

Wemple, B. C., J. A. Jones, and G. E. Grant, 1995. Runoff generation on forest roads: preliminary results of a small basin monitoring study. American Geophysical Union Fall Meeting. San Francisco, CA. December 1995.

Jones, J. A., G. E. Grant, B. C. Wemple, and R. M. Perkins, 1995. Peak flow response to clearcutting and roads in the Western Cascades, Oregon. American Geophysical Union Spring Meeting, Baltimore, MD. May 1995.

Jones, J. A., G. E. Grant and B. C. Wemple, 1994. Peak flow response to clearcutting and roads in the Western Cascades, Oregon. Geological Society of America Annual Meeting, Seattle, WA. October 1994.

Wemple, B. C., G. E. Grant, J. A. Jones, F. J. Swanson, 1993. Hydrologic integration of forest roads with stream networks in two basins, Western Cascades, Oregon. American Geophysical Union Annual Meeting. San Francisco, CA. December 1993.

GRANTS AND AWARDS:

Extramural:

Vermont Agency of Transportation. Quantifying Nutrient Pollution Reductions Achieved by Erosion Remediation Projects on Vermont's Roads. B. Wemple (PI), M. Dewoolkar and D. Ross (co-PIs). July 2019-June 2021. $151,444.

U.S. Environmental Protection Agency and New England Interstate Water Pollution Control Commission. Evaluating floodplain potential for sediment and nutrient retention: Development of a framework to assist in Lake Champlain Basin planning. B. Wemple (PI), R. Diehl (co-PI). January 2019-December 2020. $168,075.

Fulbright Scholar Program. Landscape Controls on River Morphology in the Ecuadorian Andes. Wemple, B. C. (PI). Funded January 2016 for academic exchange January – June 2017.

U. S. Geological Survey National Institutes of Water Resources (to Vermont Lake Studies and Water Resources Center). Organic phosphorus forms and transformations in Lake Champlain stream corridor soils. D. Ross (PI), B. Wemple (co-PI). March 1, 2014-February 28, 2016. $120,384.

U. S. Geological Survey National Institutes of Water Resources (to Vermont Lake Studies and Water Resources Center). Automated Mapping of Effective Impervious Areas (EIA) to Assess Stream Health. B. Wemple (PI). March 1, 2013-February 28, 2014. $102,454.

U. S. Geological Survey National Institutes of Water Resources (to Vermont Lake Studies and Water Resources Center). Evaluating effectiveness of BMP implementation on gravel roads to reduce sediment and phosphorus runoff. B. Wemple (PI) and D. Ross (co-PI). March 2012-February 2014. $158,105.

U.S. Geological Survey National Institutes of Water Resources (to Vermont Lake Studies and Water Resources Center). Determining phosphorus release potential from eroding streambank sediments in the Lake Champlain Basin of Vermont. D. Ross (PI), L. Morrissey and B. Wemple (co-Is). March 01, 2011-February 29, 2012. $61,145.

U.S. Environmental Protection Agency and New England Interstate Water Pollution Control Commission. Assessing Road Drainage Impacts to Lake Champlain Water Quality. B. Wemple (PI), L. Morrissey, D. Rizzo, and D. Ross (co-Is). October 2010-September 2012. $100,000.

National Aeronautics and Space Administration. The Vermont Frozen Landscapes Monitoring Project. W. Lakin (PI), J. Frolik, J. Pontius, C. Skalka, and B. Wemple (co-Is). July 2010-December 2011. $185,000.

Northeastern States Research Cooperative. Linking Roads in Forested Watersheds to Stream Stability and Stream Health: Tools for Assessing Road Impacts and Restoration Options. L. Morrissey (PI), B. Wemple and D. Rizzo (co-Is). September 2009-August 2012. $186,837.

National Science Foundation. Water Dynamics Workshop for EPSCoR Jurisdictions. J. Van Houten (PI), B. Wemple (co-PI). October 1, 2008-September 30, 2009. $99,966.

National Science Foundation. Piloting an interdisciplinary watershed field camp. P Bierman (PI), G. Dreuschl, D. Rizzo, M. Watzin, B. Wemple (co-Is). September 2006-August 2010. $151,522.

The Lintilhac Foundation. Enhancing the Mt. Mansfield paired-watershed study through detailed field measurements and infrastructure development. B. Wemple (PI). September 2006-August 2008. $20,000.

National Science Foundation. Collaborative Research: Laboratory Studies of Isotopic Exchange in Snow and Firn. T. Neuman (PI), B. Wemple (co-I). July 2004-September 2009. $248,702.

Intramural:

University of Vermont, Engaged Practices Innovation (EPI) grant. Collaborative and Community-based Learning in the Age of Technology and Big Data: a pilot project bridging spatial sciences and land management. B. Wemple (PI). S. Rayback and L. Dimov (co-Is). Awarded May 2019. $14,000.

University of Vermont Gund Institute of Environment Catalyst grant. Catalyzing research, scholarship and teaching in montane systems. N. Sanders (PI) and B. Wemple (coPI). , Awarded December 2017. $46,538.

University of Vermont, College of Arts & Sciences, Faculty Seed Grant Award. Taking the pulse of a high-elevation Andean River: enabling insights into mountain stream ecosystem processes and material export. Awarded March 2016. $10,000.

University of Vermont, College of Arts & Sciences, Enhancing Excellence through Interdisciplinary Experiential Engagement. Mapping Worlds: Geo-visualization and Spatial Thinking Across the Disciplines. M. Cope (lead). A. McGowan and B. Wemple (collaborators). July 2013-June 2014. $20,000.

Vermont EPSCoR Pilot Award. Tracking Endogenous and Exogenous Sources of Phosphorus to Lake Champlain Using Oxygen Isotopes of Phosphate. B. Wemple (PI), C. Giles, D. Ross, A. Schroth (coIs). May 1, 2013-April 30, 2014. $10,000.

Vermont EPSCoR Pilot Award. Modeling the effects of changing precipitation and temperature on streamflow in upland forested watersheds. B. Wemple (PI), A. Bomblies and J. Shanley (coIs). May 1, 2012-April 30, 2013. $10,000.

Vermont NSF-EPSCOR Pilot Award. Developing capacity in the application of complex systems modeling for watershed science and management: a test case. B. Wemple (PI), D Rizzo (coPI). January-June 2008. $25,000.

Vermont NASA-EPSCOR. Understanding Spatial and Temporal Distribution of Snow in Mixed Hardwood-Conifer Forests. B. Wemple (PI). J. Frolick, C. Skalka, T. Neumann, co-investigators. September 2007-August 2008. $25,000.

PRESS REPORTS AND MEDIA COVERAGE:

After Irene: Rebuilding it Right. Vermont Edition with Jane Lindholm, produced by Vermont Public Radio. September 21, 2011. Available at http://www.vpr.net/episode/52066/after-irene-rebuilding-right/

Country Roads Reconsidered, Burlington Free Press, September 1, 2013, page C4. Available by subscription to Burlington Free Press digital archive.

Watershed Moments: *Assessing the Effects of Unpaved Roads on Lake Champlain Water Quality*, produced by Vermont EPSCoR communications highlighting the connections we

have with many area stakeholders and to broader questions of relevance and the use-based science underway. Available at http://epscor.w3.uvm.edu/2/node/2202?URL=http://www.uvm.edu/~epscor/jwplayer.php?video=video/wm_BevWemple.mp4

Emerging Science: *Water and the Landscape*, produced by Vermont Public Television. Available at http://www.vermontpbs.org/show/16403/103

TEACHING AND MENTORING:

Courses Developed and Taught at UVM

Geog 002: World Natural Environments

Geog 040: Weather, Climate & Landscapes

Geog 081: Geospatial Concepts & Visualization

Geog 095: Water Resources Management in a Changing World

Geog 095: Watershed Processes

Geog 144: Geomorphology (cross listed as Geol 151)

Geog 145: Geography of Water (cross listed as NR102)

Geog 175: Urban Geography (co-instructed with Glen Elder)

Geog 184: Geographic Information: Concepts & Applications

Geog 195: Watershed Field Science

Geog 245: Ecology of Urbanization

Geog 246: Special Topics in Climate & Water Resources – Snow Hydrology

Geog 287: Spatial Analysis

Geog 295: Geomorphology and Ecology of Mountain Landscapes

Geog 296: Environmental Hydrology (cross listed as NR 285 with Breck Bowden)

HCOL 185: Geospatial Technologies (Honors College sophomore course)

Undergraduate Student Research Mentored at UVM

(Year indicates thesis completion date)

Year	Student	Major	Role
2021	Shayla Triantafillou	Environmental Sciences & Geography	advisor
2020	Juliana Landis	Environmental Sciences	advisor
2020	Frank Piasecki	Environmental Sciences	advisor

2020	Meryl Braconnier	Environmental Sciences	reader
2020	Kailey Loughran	Anthropology	reader and chair
2019	Jill Brooks	Geography	reader
2019	Ethan Shafron	Environmental Studies	co-advisor with B Fisher
2018	Sophie Ryan	Geography	advisor
2016	Genevieve Meller	Economics	reader
2016	Nathaniel Fuchs	Individually Designed Major	co-advisor with J Shea
2013	Lindsay Jordan (Willson)	Geography	advisor
2012	Anna Yatzor	Environmental Science	reader
2012	Meghan Thompson	Civil & Environmental Engineering	reader
2012	Katherine Devine	Environmental Studies	advisor
2012	Nash Hall	Geography	advisor
2012	Gordon Clark	Environmental Studies	advisor
2011	Dylan Henry	Environmental Science	advisor
2009	Colin Penn	Environmental Science	advisor
2001	Brad Weafer	Economics	reader
2001	Jess Giglio	Environmental Studies	reader
2001	Jen Bragel	Environmental Studies	reader

Graduate Student Research Mentored at UVM

Year	Student	Degree	Degree Program	Role
IP	Emma Estabrook	MS	Natural Resources	advisor
IP	Rachel Siegel	MS	Civil & Environmental Engineering	reader and chair
IP	Adrian Wiegman	PhD	Natural Resources	reader
IP	Jesse Gourevitch	PhD	Natural Resources	reader
IP	Lindsay Worley	PhD	Civil & Environmental Engineering	reader and chair
2021	Stephanie Drago	MS	Natural Resources	advisor
2019	Emily Piche	MS	Natural Resources	reader
2018	Scott Hamshaw	PhD	Civil & Environmental Engineering	reader
2018	Paliza Shrestha	PhD	Plant & Soil Science	reader and chair
2016	Alison Denn	MS	Geology	reader
2016	Jody Stryker	PhD	Civil & Environmental Engineering	co-advisor with A. Bomblies
2016	Justin Guilbert	PhD	Civil & Environmental Engineering	reader and chair
2015	Catherine Webster	MS	Natural Resources	advisor
2015	Laura Klaiber	MS	Plant & Soil Science	reader and chair
2015	Julia Laroche	PhD	Natural Resources	reader
2015	Joel Nipper	PhD	Natural Resources	reader
2014	Joanne Garton	MS	Natural Resources, Ecological Planning	advisor
2013	Luke Reusser	PhD	Natural Resources	reader

2013	Josh Tyler	MS	Civil & Environmental Engineering	reader
2013	Alejandro del Peral	MS	Natura Resources (did not complete)	advisor
2013	Alison Pechenick	MS	Civil & Environmental Engineering	reader and chair
2012	Kerrie Garvey	MS	Natural Resources	reader
2011	Jody Stryker	MS	Civil & Environmental Engineering	reader and chair
2011	Autumn Fouchee	MS	Natural Resources	reader
2010	Treg Christopher	MS	Natural Resources	reader
2010	Keith Pelletier	MS	Natural Resources	reader
2009	Phil Halteman	MS	Botany, Field Naturalist	advisor
2009	Tiffany Larsen	MS	Geology	advisor
2009	Ryan Butryn	MS	Natural Resources	reader and chair
2009	Aman Kuar	PhD	Plant & Soil Science	reader
2007	Julie Foley	MS	Natural Resources	reader
2006	Bethany Zinni	MS	Geology	advisor
2006	Erin Copeland	MS	Natural Resources	reader
2006	Katie Manaras	MS	Natural Resources	reader
2005	Joanna Reuter	MS	Geology	reader
2005	Guin Fredriksen	MS	Plant & Soil Science	reader and chair
2004	Austin Jamison	MS	Plant & Soil Science	reader and chair
2004	Jarlath Oneil-Dunne	MS	Natural Resources	reader and chair
2004	Tim Kirchoff	MA	Geography	reader
2002	Leslie Wood	MS	Botany, Field Naturalist	reader and chair
2002	Kevin Halverson	MA	Geography	reader
2002	Kathy Donna	MA	Geography	advisor
2002	Rachael Howse	MS	Geology	reader and chair
2001	Elissa Arnheim	MS	Natural Resources, Ecological Planning	reader and chair
2001	David Hershey	MS	Geography	advisor
2001	Jenny Tollefson	MS	Botany, Field Naturalist	reader and chair
2001	Mike Winslow	MS	Botany	reader and chair
2001	Karen Jennings	MS	Geology	reader and chair
2000	Carey Hengstenberg	MS	Geology	reader and chair

Post-doctoral Scholars Mentored at UVM

term	**Name**	**role**
2018	Rebecca Diehl	supervisor
2017-present	Erin Seybold	co-supervisor with A.Schroth and C.Adair
2016-2018	Nitin Singh	co-supervisor with T. Ricketts
2014-2017	Vanesa Perillo	co-supervisor with D. Ross
2011-2016	Ibrahim Mohammed	co-supervisor with A. Bomblies

PROFESSIONAL SERVICE:

Journal Reviews

Aqueous Geochemistry
Conservation Biology
Earth Surface Processes and Landforms
Environmental Monitoring and Assessment
Forest Ecology and Management
Geografiska Annaler A: Physical Geography
Hydrological Processes
International Journal of Sediment Research
Journal of the American Water Resources Association
Journal of Hydrology
Physical Geography
Physics and Chemistry of the Earth
PLOS One
Water Resources Research

Textbook Reviews

Routledge
John Wiley & Sons

Proposal Reviews

Belmont Forum
National Fish and Wildlife Foundation
National Science Foundation
U.S.D.A. C.S.R.E.E.S. National Research Initiative
U.S. Geological Survey and the National Institutes for Water Resources

Society and Discipline Service

Associate Editor, Water Resources Research, 2017-present.
Panelist, Hydrologic Sciences Program, National Science Foundation, 2018.
Member, Education and Outreach Committee, Consortium of Universities for the Advancement of Hydrologic Sciences, 2011 – present.
Member, National Research Council Committee on the Hydrologic Impacts of Forest Management, National Academy of Sciences, 2006-2008.
Guest Editor (with Charles Luce), Special issue on Hydrologic and Geomorphic Effects of Forest Roads, *Earth Surface Processes and Landforms*, vol. 26 (2001).
Instructor for Vermont Spatial Data Partnership's annual roundtable meeting. (July 2001, March 2013).
Session Convener, American Geophysical Union, Fall Meeting (1998, 2014, 2017), Spring Meeting (2002, 2004), Association of American Geographers Annual Meeting (2015)

University, College, and Department Service (at University of Vermont)

Member, Navigate advisory committee (Fall 2019 – present)

Member, University assessment committee for Sustainability general education requirement (2017-2020)

Member, Gund Institute for Environment, Steering Committee (Fall 2020 to present)

Member, Consortium of Universities for the Advancement of Hydrologic Sciences, Ad-hoc committee to examine organization's by-laws and inclusion of primarily undergraduate institutions (summer 2020).

Member, Gund Institute for Environment, Fellows Selection Committee (2018 to 2020)

Member, College of Arts and Sciences, First-Year Experience Committee (2015 – 2016)

Member, Sustainability Curriculum Review Committee (2014 – 2016)

Member, Search Committee for Assistant Professor of Natural Resources (2014)

Faculty reviewer, Fulbright student applications, UVM Honors College (2012, 2014, 2015, 2016, 2018, 2019)

Co-chair, Envisioning Environment Work Group (2012-2013)

Member, Search Committee for Assistant Professor of Anthropology (2012)

Faculty Senate Review Committee, Academic Program Review for Environmental Sciences (2011-2012)

Member, Search Committee for Assistant Professor of Natural Resources (2011)

College of Arts & Sciences Academic Planning and Budget Committee (2009-2010)

Working Group on Environment, Transdiciplinary Research Initiative (Fall 2009)

Member, Search Committee for Assistant Professor of Natural Resources (2009)

Member, Search committee for Chair, Department of Geography (2009)

College of Arts & Sciences Admissions Committee (2008)

University Planning Council, Institutional Efficacy Working Group (2008)

Departmental Representative to United Academics (2007-2008)

Member, Search committee for Chair, Department of Music (2007)

Faculty Advisor, American Water Resources Association UVM Student Chapter (2004-2008)

Member, Search committee Assistant Professor of Geography (2004)

Member, University of Vermont Environmental Council (Fall 2003-May 2008)

Member, Search committee for Chair, Department of Sociology (2003)

Host and departmental representative, College of Arts and Sciences Admitted Student Visitation Days (2002-present).

Member, Search Committee for Lecturer in Geography (2002)

Orientation advisor for College of Arts and Sciences (2000-present)

Member, Search committee for Chair, Department of Geology (2000)

Member, Search Committee for Lecturer in Geography (2000)

Member, Search committee Assistant Professor of Geography (2002)

Member, Search committee Assistant Professor of Geography (2001)

Department of Geography Transfer Affairs Coordinator (2001-present).

Department of Geography Undergraduate Program Coordinator (2001 to 2005).

Department of Geography Faculty advisor, Gamma Theta Upsilon (2001 to 2005).

Instructor to University Seminar program for first year students (2000, 2001).

Senator representing Department of Geography, Faculty Senate (1999-2001, 2010-2016)

Outreach and Community Service

Board of Trustees, The Nature Conservancy, Vermont Chapter (2020 to present).

Burlington School District, member Sustainable Mobility Working group (since Fall 2019); host for visiting students, Burlington City & Lake Semester (January, 2020).

Presentation to Vermont USDA State Technical Committee, Colchester, VT. (May 2019).

Legislative testimony, Vermont House Committee on Fish, Wildlife and Water Resources (Feb. 2016)

Legislative testimony, Vermont House Transportation Committee and Vermont House Agriculture and Forest Products Committee (Jan. 2015)

Scientific presentation to Vermont Citizens Advisory Committee for Lake Champlain (Sept. 2015)

Scientific Presentation to Lamoille Co. (Vermont) Planning Commission (Sept. 2014)

Faculty Advisory Committee member, Vermont Monitoring Cooperative; since 2016 Forest Ecosystem Management Cooperative (2005 – present).

Board of Directors, Vermont Center for Geographic Information (2011-2015).

Faculty Advisory Committee Member, University Transportation Center (2013-2015).

Technical advising to U.S. Forest Service (2000, 2002), Vermont Department of Forest, Parks & Recreation (2001-present), Vermont Agency of Natural Resources and Vermont Agency of Transportation (2010-present), and Lake Champlain Basin Program (2004-present).

Technical advising to Oregon Natural Resources Council on status of road surface erosion and hydrology studies (April 2003).

Provided written comments on developing standards and guidelines for prioritizing logging road removal on federally-owned lands to Wildlands CPR, a non-profit environmental advocacy group based in Missoula, MT (July 2001).

Site visits and technical advising to Soil Scientist, Green Mountain National Forest, Rutland, Vermont (summer 2000, 2002).

PROFESSIONAL AFFILIATIONS:

American Geophysical Union

Association of American Geographers

SYNERGISTIC ACTIVITIES:

Outreach and consultation – provide outreach and consultation to soil scientists, hydrologists, technicians, and other professionals of the U.S. Forest Service, Bureau of Land Management, state (Vermont, Oregon, Washington) natural resource agencies, and non-governmental organizations (Nature Conservancy, Oregon Natural Resources Council, National Fish and Wildlife Foundation). Member of a National Research Council panel of experts assembled to assess the effects of forest management on the nation's water resources (March 2006-April 2008). Serve on Education & Outreach Committee of Consortium of Universities for the Advancement of Hydrologic Sciences (CUAHSI) (2011-present). Provide technical support and consultation to Fundación Cordillera Tropical

(Cuenca, Ecuador) on development of hydrologic monitoring program for northern tropical Andes (2013-present).

Modeling applications for hydrological problems – collaborate with hydrologic modelers at Stanford University, Pacific Northwest National Lab, and University of North Carolina at Chapel Hill to develop and test rainfall-runoff models to improve understanding of hydrologic processes and effects of forest management and climate change on runoff dynamics.

Innovations in teaching and training – Co-developed field-based interdisciplinary undergraduate Wateshed Field Camp funded by National Science Foundation (2007-2009); developed five day *Hydrologic Modeling* workshop for graduate students with NSF EPSCoR support (2008); developed *Geospatial Analysis and Hydrologic Modeling* workshop for Chilean and Argentinian graduate students as part of Interamerican Institute for Global Change research project *Sensing Americas Freshwater Ecosystem Risk* (*SAFER*) to Climate Change and NSF-funded *Science Across Virtual Institutes (SAVI) grant* to Dr. T. Harmon (UC Merced), delivered in Coyhaique, Chile (April 2014). Taught intensive geospatial technologies course to 17 Ecuadorian students and 4 faculty during Fulbright scholar exchange at Universidad Politécnica Salesiana in Cuenca, Ecuador (2017).