

CURRICULUM VITAE, CHRISTOPHER JAN WOLTEMADE, Ph.D.

EDUCATION

- 1987-1993 University of Wisconsin, Madison
Doctor of Philosophy in Geography, Water Resources Management minor, 1993.
Master of Science in Geography, 1989.
Master of Science in Water Resources Management, 1989.
G.P.A. 3.95 / 4.00
- 1990 University of Colorado, Boulder
One semester research on western U.S. water resources, Department of
Geography.
G.P.A. 4.00 / 4.00
- 1983-1987 Ohio Wesleyan University, Delaware, Ohio
Bachelor of Arts with honors in Geography, 1987.
Graduated valedictorian and Phi Beta Kappa, G.P.A. 3.97 / 4.00

EMPLOYMENT

- 1994-present Assistant Professor / Associate Professor / Professor, Department of
Geography-Earth Science, Shippensburg University of Pennsylvania.
- 1994-2003 Consulting Hydrologist, Environmental Defense Fund, Washington, DC.
Conducted research and wrote seven reports to support policy initiatives
related to hydrology, flooding, wetlands, water quality, and watershed
management.
- 1993-1994 Assistant Professor, Department of Geography, Keene State College, New
Hampshire.
- 1991- 1993 Research Assistant, Department of Civil and Environmental Engineering,
University of Wisconsin, Madison.
Combined field research and computer modeling to study the influence of
valley bottom geomorphology, hydrology, and hydraulics on flood processes.
- 1992 Instructor, Department of Geography, University of Wisconsin-Madison
- 1990 Project Assistant, Department of Geography, University of Wisconsin-Madison.
Compiled, mapped, and interpreted climate and hydrology data to assess
hydrologic and geomorphic impacts of climate change.
- 1986 Cartography Intern, National Geographic Society, Washington, DC.
Researched and designed four-color maps for *Traveler Magazine*.

COURSES TAUGHT

1994-present	Shippensburg University
	ESS 110 Introduction to Geology
	GEO 224 Soils
	GEO 226 Hydrology
	GEO 440 Field Techniques
	GEO 445 Remote Sensing
	GEO 446 Water Resources Management
	GEO 450 Geography-Geology Field Studies: British Columbia
	GEO 503 Fundamentals of Geoenvironmental Research (Graduate)
	GEO 522 Geoenvironmental Hydrology (Graduate)
1993-1994	Keene State College
	GEO 100 Introduction to Geography
	GEO 341 Geography of the United States
	GEO 399 Environmental Change and Watershed Management
1992	University of Wisconsin-Madison
	GEO 120 Global Physical Environments

PUBLICATIONS

Peer-reviewed journal articles

- Woltemade, CJ. In review. Impacts of Small-Scale Water Conservation Practices on Summer Streamflow in the Navarro River Watershed, California. *Association of Pacific Coast Geographers Yearbook*, submitted 2019.
- Woltemade CJ, TW Hawkins, C Jantz, and S Drzyzga. In review. Impact of Changing Climate and Land Cover on Flood Magnitudes in the Delaware River Basin, USA. *Journal of the American Water Resources Association*, submitted 2019.
- Hawkins TW and CJ Woltemade. In review. Impact of projected 21st century climate change on basin hydrology and runoff in the Delaware River Basin, USA. *Journal of Water and Climate Change*, submitted 2019.
- Woltemade, CJ. 2017. Stream temperature spatial variability reflects geomorphology, hydrology, and microclimate: Navarro River watershed, California. *The Professional Geographer*. 69(2): 177-190.
- Woltemade, CJ and TW Hawkins. 2016. Stream temperature impacts due to changes in air temperature, land cover, and stream discharge: Navarro River watershed, California, USA. *River Research and Applications*. 32(10): 2020-2031.
- Woltemade, CJ. 2016. Meteorologic, hydrologic, and geographic characterization of historic floods in the Delaware River Basin. *Middle States Geographer*, 49: 63-73.

- Benham, M and CJ Woltemade. 2016. Elevated lead levels in public drinking water systems despite governmental policies: Flint, Michigan case study. *Middle States Geographer*, 49: 9-20.
- Fuellhart, K, K O'Connor, and CJ Woltemade. 2013. Route-level passenger variation within three multi-airport regions in the USA. *Journal of Transport Geography*, 31: 171-180.
- Woltemade, CJ and K Fuellhart. 2013. Economic efficiency of residential water conservation programs in a Pennsylvania public water utility. *The Professional Geographer*, 65(1): 116-129.
- Woltemade, CJ. 2010. Impact of residential soil disturbance on infiltration rate and stormwater runoff. *Journal of the American Water Resources Association*, 46(4): 700-711.
- Woltemade, CJ and J Woodward. 2008. Nitrate removal in a restored spring-fed wetland, Pennsylvania, USA. *Journal of the American Water Resources Association*, 44(1): 222-234.
- Woltemade, CJ and D Stanitski-Martin. 2002. Comparison of NEXRAD and rain gauge estimates of storm total precipitation in a mountainous south central Pennsylvania watershed. *The Pennsylvania Geographer*, XL (2): 176-186.
- Grote, T and CJ Woltemade. 2002. Bedrock and surficial geologic controls on baseflow chemistry in the Burd Run Watershed, south-central Pennsylvania. *The Pennsylvania Geographer*, XL (2): 101-112.
- Woltemade, CJ and WL Blewett. 2002. Design, implementation, and assessment of an undergraduate interdisciplinary watershed research laboratory. *Journal of Geoscience Education*, 50(4): 372-379.
- Woltemade, CJ and D Stanitski-Martin. 2002. A student-centered field project comparing NEXRAD and rain gauge precipitation values in mountainous terrain. *Journal of Geoscience Education*, 50(3): 296-302.
- Woltemade, CJ and A Wood. 2002. Comprehensive riparian restoration along Burd Run. *Land and Water*, 46(2): 27-32.
- Woltemade, CJ. 2000. Ability of restored wetlands to reduce nitrogen and phosphorus concentrations in agricultural drainage water. *Journal of Soil and Water Conservation*, 55(3): 303-309.
- Starner, KJ, CJ Woltemade, and WL Blewett. 1998. Soil variability across a topographic gradient in colluvial soil of south-central Pennsylvania. *The Pennsylvania Geographer*, 36(1): 61-78.
- Woltemade, CJ. 1997. Water level management opportunities for ecological benefit, Pool 5 Mississippi River. *Journal of the American Water Resources Association*, 33(2): 443-454.

- Woltemade, CJ. 1994. Form and process: Fluvial geomorphology and flood flow interaction, Grant River, Wisconsin. *Annals, Association of American Geographers*, 84(3): 462-479.
- Woltemade, CJ and KW Potter. 1994. A watershed modeling analysis of fluvial geomorphologic influences on flood peak attenuation. *Water Resources Research*, 30(6): 1933-1942.
- Woltemade, CJ. 1991. Environmental impact mitigation under the Clean Water Act and the National Environmental Policy Act: The case of Two Forks Dam. *Water Resources Bulletin*, 27(2): 293-302.

Other publications

- Woltemade, CJ. 2005. Potential for treatment wetlands to reduce non-point source nitrogen loads on a watershed scale: Modeling the Conestoga River watershed, Pennsylvania, USA. *Geosciences Research Abstracts*, Vol. 7, SRef-ID: 1607-7962/gra/EGU05-A-00344.
- Meyer, JL, LA Kaplan, D Newbold, DL Strayer, CJ Woltemade, JB Zedler, R Beilfuss, Q Carpenter, R Semlitsch, MC Watzin, and PH Zedler. 2003. *Where rivers are born: The scientific imperative for defending small streams and wetlands*. Washington, DC: Sierra Club and American Rivers.
- Woltemade, CJ. 2003. Book review of Viessman, W Jr and GL Lewis. *Introduction to Hydrology (5th edition)*, Upper Saddle River, NJ: Prentice Hall, 2003. *Journal of the American Water Resources Association*, 39(3): 727-728.
- Woltemade, CJ. 2003. Mississippi River Basin. In EJ Dasch (ed.) *Water Sciences and Issues*, Macmillan Reference USA, New York: 98-102.
- Woltemade, CJ. 2002. Transport and fate of nutrients in a riparian zone: Restoration and monitoring strategies. In JF Kenny (ed.) *Ground Water / Surface Water Interactions*, American Water Resources Association, Middleburg, Virginia, TPS 02-2: 149-154.
- Woltemade, CJ and WL Blewett. 2000. Development of an interdisciplinary watershed research laboratory for undergraduate education. In RW Higgins (ed.) *Water Quantity and Quality Issues in Coastal Urban Areas*, American Water Resources Association, Middleburg, Virginia, TPS-00-3: 229-232.
- Woltemade, CJ. 2000. Book review of Thompson, SA. *Hydrology for Water Management*, Rotterdam, The Netherlands: AA Balkema, 1999. *Annals of the Association of American Geographers*, 90(1): 200-202.
- Woltemade, CJ. 1999. Ability of restored wetlands to improve habitat and water quality in agricultural regions. In R Sakrison and P Sturtevant (eds.) *Watershed Management to Protect Declining Species*, American Water Resources Association, Middleburg, Virginia, TPS-99-4: 501-504.

- Woltemade, CJ. 1997. Integration of hydrology, geomorphology, and aquatic ecology in management of the Upper Mississippi River Basin. In JJ Warwick (ed.) *Water Resources Education, Training, and Practice: Opportunities for the Next Century*, American Water Resources Association, Herndon, Virginia, TPS-97-1: 455-464.
- Woltemade, CJ. 1997. Book review of Changnon, SA (ed.) *The Great Flood of 1993: Causes, Impacts, and Responses*, Boulder, Westview Press, 1996. *Annals of the Association of American Geographers*, 87(2): 377-378.

Unpublished manuscripts

- Woltemade, CJ, A Bard, A Dellinger and A Krugh. 2003. Opportunities for constructed and restored wetlands to diminish nitrogen concentrations in the Conestoga River Watershed, Lancaster, Pennsylvania, Environmental Defense Fund, Washington, DC.
- Woltemade, CJ. 2000. Evaluation of Supplemental Water Quality Analysis, Draft Supplemental Environmental Impact Statement, New Madrid Floodway and St. Johns Bayou Flood Control Project, Lower Mississippi River, Environmental Defense Fund, Washington, DC.
- Woltemade, CJ. 1999. Potential for constructed wetlands to improve water quality in drained agricultural watersheds, Environmental Defense Fund, Washington, DC.
- Woltemade, CJ and T Searchinger. 1997. Towards a self-sustaining river: A three-part strategy to restore the Upper Mississippi River. Environmental Defense Fund, Washington, DC.
- Woltemade, CJ. 1996. Water level management opportunities for ecological benefit, Pool 5 Upper Mississippi River, Environmental Defense Fund, Washington, DC.
- Woltemade, CJ. 1995. Water level management for ecological benefits on the Upper Mississippi River: Probabilities of requisite hydrologic conditions, Environmental Defense Fund, Washington, DC.
- Woltemade, CJ. 1994. Environmental restoration and flood flow reduction in the Upper Mississippi River Basin, Environmental Defense Fund, Washington, DC.
- Woltemade, CJ. 1993. Influence of channel, floodplain, and basin characteristics on flood magnitude and frequency, Grant River, Wisconsin. Doctoral dissertation, University of Wisconsin—Madison. Dissertation Committee: JC Knox (chair), TR Vale, D Sack, VT Holliday, KW Potter.
- Water Resources Management Student Research Colloquium. 1989. Integrating the groundwater component into the priority watershed program: A case study of the Rattlesnake Creek watershed, Institute for Environmental Studies, University of Wisconsin—Madison.
- Woltemade, CJ. 1989. The National Environmental Policy Act, resource management, and human values: A case study of the Two Forks Dam, Denver, Colorado. MS thesis, University of Wisconsin—Madison.

PAPERS AND POSTERS PRESENTED

- Woltemade, CJ. 2020. Flood response to changing climate and land cover: Delaware River Basin. Geological Society of America Joint Section Meeting, Reston, VA.
- Woltemade, CJ, L MacElwee, P Madigan, and E Lundquist. 2019. Benefits of agricultural water conservation strategies to improved summer low flows, Navarro River watershed, California. 37th Annual Salmon Restoration Federation Conference, Santa Rosa, CA.
- Woltemade, CJ. 2019. What are the synergies between fresh water flooding and water quality in the Delaware River Watershed? Invited speaker and panelist, Delaware River Watershed Initiative Winter Gathering, Macungie PA.
- Clapper, Q and CJ Woltemade. 2019. Historic Change in Stormwater Runoff in the Shippensburg Pennsylvania Memorial Park Watershed. Shippensburg University Academic Day.
- Woltemade, CJ. 2018. Impact of changing climate and land cover on floods in the Delaware River Basin. American Water Resources Association Annual Meeting, Baltimore, MD.
- Woltemade, CJ. 2017. Meteorologic, hydrologic, and geographic characteristics of large floods in the Delaware River Basin. American Water Resources Association Annual Meeting, Portland, OR.
- Woltemade, CJ. 2017. Flood hydrology in the Delaware River Basin: Geographic variability and institutional adaptation to changes in climate and land cover. Association of American Geographers Annual Meeting, Boston, MA.
- Fenk, H and Woltemade CJ. 2017. Surveying seasonal discharge as affected by local hydrogeology: Burd Run, Cumberland County, Pennsylvania. Pennsylvania Geographical Society Annual Meeting, Shippensburg, PA.
- Woltemade, CJ. 2015. Environmental influences on stream temperature, Navarro River watershed, California. Association of American Geographers Annual Meeting, Chicago, IL.
- Woltemade, CJ. 2015. Stream temperature response to landscape, land use, and climate, Navarro River watershed, California. American Water Resources Association Annual Meeting, Denver, CO.
- Woltemade, CJ. 2013. Geomorphic monitoring of a stream stabilization project: Larry's Creek, Pennsylvania. American Water Resources Association Annual Meeting, Portland, OR.
- Woltemade, CJ. 2013. Hydrologic effects of quarry pumping discharge in a small karst watershed. Annual meeting of the Association of American Geographers, Los Angeles, CA.

- Woltemade, CJ. 2011. Economic efficiency of residential water conservation programs in a Pennsylvania public water utility. American Water Resources Association Annual Conference, Albuquerque, NM.
- Woltemade, CJ and K Fuellhart. 2011. Economic efficiency of residential water conservation programs in a Pennsylvania public water utility. Annual meeting of the Association of American Geographers, Seattle, WA.
- Morrow, NM and CJ Woltemade. 2011. Abandoned mine drainage impacts on pH in Shamokin Creek, Pennsylvania. Geological Society of America Joint Northeastern/North-Central Section Meeting, Pittsburgh, PA.
- Woltemade, CJ. 2010. Impact of residential soil disturbance on infiltration rates and stormwater runoff. Annual meeting of the Association of American Geographers, Washington, DC.
- Woltemade, CJ. 2009. Impact of residential soil compaction on infiltration and runoff. American Water Resources Association Annual Conference, Seattle, Washington.
- Woltemade, CJ. 2009. Modeling residential soil compaction with the NRCS curve number method. Annual meeting of the Association of American Geographers, Las Vegas, NV.
- Mimna, M and CJ Woltemade. 2008. Effects of impervious surfaces on maximum stormwater runoff temperatures: Modeling and field monitoring of the Shippensburg University of Pennsylvania campus. Annual meeting of the Association of American Geographers, Boston, MA.
- Fuellhart, K and CJ Woltemade. 2008. The evolution of air travel: Reducing the friction of distance by becoming an elite flyer. Annual meeting of the Association of American Geographers, Boston, MA.
- Woltemade, CJ. 2007. Nitrate removal in a restored spring-fed wetland, Pennsylvania: Results of a three-year monitoring study. American Water Resources Association Annual Conference, Albuquerque, NM.
- Woodward, J and CJ Woltemade. 2007. Hydrology and nitrate removal in a restored spring-fed wetland, Pennsylvania, USA. Annual meeting of the Association of American Geographers, San Francisco, CA.
- Woltemade, CJ. 2006. Ability of restored wetlands to diminish nitrate load in agricultural watersheds. Society of Wetland Scientists Pacific Northwest Annual Meeting, Vancouver, WA.
- Woodward, J and CJ Woltemade. 2006. The ability of wetlands to reduce nitrate concentrations in agricultural areas. Annual meeting of the Association of American Geographers, Chicago, IL.

- Woltemade, CJ. 2005. Potential for wetland restoration to reduce nitrogen loads in an agricultural watershed: Conestoga River Basin, Pennsylvania. American Water Resources Association Annual Conference, Seattle, WA.
- Woltemade, CJ. 2005. Potential for treatment wetlands to reduce non-point source nitrogen loads on a watershed scale: Modeling the Conestoga River watershed, Pennsylvania, USA. General Assembly of the European Geosciences Union, Vienna, Austria.
- Woltemade, CJ and JW Balay. 2005. Fluvial geomorphic change in a reconstructed stream channel, south-central Pennsylvania. Annual meeting of the Association of American Geographers, Denver, CO.
- Balay, JW and CJ Woltemade. 2004. Implementation and analysis of a comprehensive fluvial geomorphic monitoring methodology for evaluating a restored stream channel in south-central Pennsylvania. Pennsylvania Geographical Society Annual Meeting, New Cumberland, PA.
- Woltemade, CJ. 2003. Stream channel, riparian corridor, and wetland restoration for water quality and habitat improvement. Geological Society of America Annual Meeting, Seattle, WA.
- Woltemade, CJ. 2002. Influence of land use and geology on geomorphic response to Hurricane Mitch in mountainous northwestern Nicaragua. International Symposium on Land Use Change and Geomorphic, Soil and Water Processes in Tropical Mountain Environments, Quito and Cuenca, Ecuador.
- Woltemade, CJ. 2002. Transport and fate of nutrients in a riparian zone: Restoration and monitoring strategies. American Water Resources Association Summer Specialty Conference: Ground Water / Surface Water Interactions, Keystone, CO.
- Woltemade, CJ. 2002. Geomorphic impacts of Hurricane Mitch in northwestern Nicaragua. Annual meeting of the Association of American Geographers, Los Angeles, CA.
- Woltemade, CJ and WL Blewett. 2001. Linking undergraduate learning using a watershed research laboratory. Annual meeting of the National Council for Geographic Education, Vancouver, BC.
- Woltemade, CJ and WL Blewett. 2001. A watershed laboratory model for effective environmental science college teaching. Annual meeting of the Association of American Geographers, New York, NY.
- Blewett, WL and CJ Woltemade. 2000. Using GIS in a multidisciplinary watershed-based environmental science curriculum. Geological Society of America Annual Meeting, Reno, NV.
- Woltemade, CJ and WL Blewett. 2000. Development of an interdisciplinary watershed research laboratory for undergraduate education. American Water Resources Association Annual Conference, Miami, FL.

- Woltemade, CJ. 2000. Water resources issues for the new millennium. Panel presentation on the increasing significance of community-based watershed organizations in water resources management. Annual meeting of the Association of American Geographers, Pittsburgh, PA.
- Woltemade, CJ and WL Blewett. 2000. Enhancing undergraduate education: The Burd Run Interdisciplinary Watershed Research Laboratory. Joint annual meeting of the Pennsylvania Geographical Society and Middle States Division, Association of American Geographers, Wilkes-Barre, PA.
- Hanawalt, M, R Joswick, S Spencer, B Uhler, CJ Woltemade, and D Stanitski-Martin. 2000. Accuracy of NEXRAD precipitation estimates in a mountainous south-central Pennsylvania watershed. Joint annual meeting of the Pennsylvania Geographical Society and Middle States Division, Association of American Geographers, Wilkes-Barre, PA.
- Woltemade, CJ. 1999. Ability of restored wetlands to improve habitat and water quality in agricultural regions. American Water Resources Association Annual Conference, Seattle, WA.
- Woltemade, CJ. 1999. Restored wetlands treating crop field drainage water: The state of the science. Annual meeting of the Association of American Geographers, Honolulu, HI.
- Woltemade, CJ. 1998. Teaching water resources management in geography. Panel discussion, annual meeting of the Association of American Geographers, Boston, MA.
- Stahlnecker, H, M Ferroni, J Ford, CJ Woltemade, and P Padgett. 1998. Drinking water consumption rates and associated dietary magnesium and calcium in Shippensburg, PA. Pennsylvania Academy of Science Annual Meeting, Pittsburgh, PA.
- Woltemade, CJ. 1997. Integration of hydrology, geomorphology, and aquatic ecology in management of the Upper Mississippi River Basin. American Water Resources Association Symposium, Keystone, CO.
- Woltemade, CJ. 1997. Habitat improvement and pool drawdowns. Annual meeting of the Mississippi River Basin Alliance, St. Louis, MO.
- Woltemade, CJ. 1997. Water level management opportunities for the Upper Mississippi River. Annual meeting of the Association of American Geographers, Fort Worth, TX.
- Starner, K, CJ Woltemade, and WL Blewett. 1997. Soil variability across a topographic gradient in colluvial soil of south-central Pennsylvania. Pennsylvania Geographical Society Annual Meeting, York, PA.
- Woltemade, CJ. 1996. Hydrologic management of the Mississippi River for ecological benefit. Annual meeting of the Association of American Geographers, Charlotte, NC.

- Woltemade, CJ. 1996. Water level management opportunities for ecological benefit, Pool 5 Upper Mississippi River. Invited paper and panel discussant, Upper Mississippi River Summit Meeting, Bloomington, MN.
- Woltemade, CJ. 1996. Mississippi River aquatic ecology: past, present, and future. Pennsylvania Geographical Society Annual Meeting, Carlisle, PA.
- Woltemade, CJ. 1994. Geomorphic-hydraulic interaction in the Grant River watershed, Wisconsin. Annual meeting of the Association of American Geographers, San Francisco, CA.
- Woltemade, CJ. 1993. Fluvial geomorphology and flood hydraulics: Effects of flood peak attenuation. Annual meeting of the Association of American Geographers, Atlanta, GA.
- Woltemade, CJ. 1992. Influence of channel, floodplain, and basin characteristics on flood magnitude and frequency. Annual meeting of the Association of American Geographers, San Diego, CA.
- Woltemade, CJ. 1990. Environmental impact studies and human values: The case of Two Forks Dam. Annual meeting of the Association of American Geographers, Toronto, ON.
- Woltemade, CJ. 1989. Environmental impact studies and human values: The case of Two Forks Dam. American Water Resources Association Annual Conference, Denver, CO.
- Woltemade, CJ. 1989. A critique of NEPA and the analysis of alternatives. Annual meeting of the Association of American Geographers, Baltimore, MD.

UNIVERSITY AND PUBLIC LECTURES

- Woltemade, CJ. 2019. Impact of changing climate and land cover on floods in White Clay Creek and the Delaware River Basin. Invited speaker, Stroud Water Research Center, Avondale, PA.
- Woltemade, CJ. 2019. Water Budget Hydrology of Shippensburg, Pennsylvania. Public address to the Shippensburg Borough Council.
- Woltemade, CJ. 2018. Potential for Water Conservation to Improve Streamflow and Water Temperatures in the Navarro River Watershed. Public meeting: The Future of the Navarro Watershed, Philo, CA.
- Woltemade, CJ. 2015. Stream Temperatures in the Navarro River Watershed: 2014-2015 Monitoring and Heat Source Computer Modeling. Public meeting: Navarro Watershed Status Report, Philo, CA.
- Woltemade, CJ. 2015. Land use, stream temperatures, and endangered salmon: Navarro River watershed, California. Shippensburg University Geography-Earth Science Department Seminar Series.

- Woltemade, CJ. 2013. Nitrogen management in the Chesapeake Bay watershed. Invited presentation, National Geographic Society teachers' workshop, Shippensburg University of Pennsylvania.
- Woltemade, CJ. 2013. Human impacts on fluvial geomorphic processes and the need for stream channel stabilization. Invited colloquium presentation, University of Pittsburgh Department of Geology and Planetary Science.
- Woltemade, CJ. 2012. From springs to sprinklers. Invited panel discussant at the South Mountain Speaker Series, Shippensburg University of Pennsylvania.
- Woltemade, CJ. 2012. Water: Quality and quantity. Radio SmartTalk, WITF, Harrisburg, PA.
- Woltemade, CJ. 2008. Development of an interdisciplinary watershed research laboratory at Shippensburg. Invited lecture, Annual Meeting of the Commonwealth of Pennsylvania University Biologists, Shippensburg, PA.
- Woltemade, CJ. 2007. Alaskan glaciers and climate change. Department of Geography-Earth Science Seminar Series, Shippensburg University of Pennsylvania.
- Woltemade, CJ. 2006. Hydrologic influences on nitrate-nitrogen removal in a restored wetland, Pennsylvania, USA. Invited lecture, Institute for Geography, Friedrich-Schiller University, Jena, Germany.
- Woltemade, CJ. 2003. Design, implementation, and monitoring of a comprehensive stream and wetland restoration project. Invited lecture, Gettysburg College Research Experience for Undergraduates Program, Gettysburg, PA.
- Woltemade, CJ. 2003. Design, implementation, and monitoring of a comprehensive stream and wetland restoration project. Invited lecture, Lock Haven University Science Seminar Series, Lock Haven, PA.
- Woltemade, CJ. 2002. Geography and the interdisciplinary science of watershed management: Case studies from Nicaragua. Invited lecture, Ohio Wesleyan University Interdisciplinary Science Lecture Series, Delaware, OH.
- Woltemade, CJ. 2002. Hurricane Mitch in Nicaragua: Landscape impacts and human response. Department of Geography-Earth Science Winter Seminar Series, Shippensburg University of Pennsylvania.
- Woltemade, CJ. 2002. Hurricane Mitch in Nicaragua: Watershed impacts and landscape stabilization efforts. Conodoguinet Creek Watershed Association, Carlisle, PA.
- Woltemade, CJ. 1999. The Burd Run Interdisciplinary Watershed Research Laboratory: Opportunities to enhance environmental education. Science Seminar Series, Shippensburg University of Pennsylvania.

Woltemade, CJ. 1999. Wetland restoration for water quality improvement in agricultural watersheds. Science Seminar Series, Shippensburg University of Pennsylvania.

Woltemade, CJ. 1999. Glaciers of Mt. Rainier. Department of Geography-Earth Science Winter Seminar Series, Shippensburg University of Pennsylvania.

Woltemade, CJ. 1995. Flooding in the Upper Mississippi River Basin. Department of Geography-Earth Science Winter Seminar Series, Shippensburg University of Pennsylvania.

ADDITIONAL ATTENDANCE AT CONFERENCES, SEMINARS, ETC.

2008 Geographic Information Systems and Water Resources. Spring Specialty Conference of the American Water Resources Association. San Mateo, CA.

2002 Dams and Geomorphology, Binghamton International Geomorphology Symposium, Bloomsburg, PA.

2001 Process based channel design - Innovative approaches for repairing disturbed stream and river environments. Short course, Inter-Fluve, Inc., Bozeman, MT.

2000 Advanced ArcView GIS training. Short course, Environmental Systems Research Institute, Inc., Vienna, VA.

1994 Landsat and beyond. National seminar of the Earth Observation Satellite Company, Baltimore, MD.

Restoration of aquatic ecosystems: Developing a national agenda. National symposium of the Association of State Floodplain Managers, St. Paul, MN.

1992 Paleoflood hydrology of the southern Colorado Plateau. Workshop and field trip, University of Arizona Laboratory for Paleohydrological and Hydroclimatological Analysis, Flagstaff, AZ.

1987 Catastrophic flooding. Binghamton International Geomorphology Symposium, Miami University, Oxford, OH.

GRANT-FUNDED PROJECTS

Major Extramural Grants

2018-2020 Farm to water table: Promoting water conservation BMPs for salmon in the Navarro watershed. Collaborator with Mendocino County Resource Conservation District (CA). National Fish and Wildlife Foundation, Subcontract \$45,646, total award \$149,595, total project \$301,195.

- 2017-2020 How will forest ecosystems and hydrologic processes in the Delaware River Basin be affected by climate change and land cover change? Co-PI with C Jantz, T Hawkins, S Drzyzga, S Goetz, and P Jantz. Delaware Watershed Research Fund, \$486,000.
- 2012-2017 Shippensburg University scholarships for educational achievement in STEM (Ship-SEA-STEM). Co-PI with M Baer-Lehman, B Galluzzo, and R McCann. National Science Foundation, \$586,500.
- 2010-2012 Integration of near-surface geophysical imaging technology into a Geoenvironmental Science undergraduate curriculum. Co-PI with J Zume and S Cornell. National Science Foundation, \$196,902.
- 2000-2003 Burd Run stream channel, riparian zone and wetlands restoration, Co-PI with B Jaymes. Pennsylvania Department of Environmental Protection Growing Greener Program, Environmental Stewardship and Watershed Protection, \$129,000.
- 1999-2001 Burd Run interdisciplinary watershed research laboratory, Co-PI with WL Blewett. National Science Foundation, \$168,357 (including matching funds).

Minor Grants

- 2019-2020 Using repeat photography to assess geomorphic change in the Navarro River watershed, California. Pennsylvania State System of Higher Education Faculty Professional Development Council, \$8,085.
- 2019 Surveying and Modeling Storm Water Management Hydrology in the Memorial Park Neighborhood of Shippensburg, Pennsylvania. Shippensburg University Summer Undergraduate Research Experience (SURE), \$750.
- 2017 Surveying Seasonal Discharge of Burd Run, Cumberland County, Pennsylvania, as Affected by Local Hydrogeology. Shippensburg University Summer Undergraduate Research Experience (SURE), \$750.
- 2014-2015 Influence of riparian forest cover and irrigation withdrawals on stream temperature: Anderson Creek, California. Pennsylvania State System of Higher Education Faculty Professional Development Council, \$9,233.
- 2013-2014 Interpretive educational trail, Burd Run stream channel and wetland restoration. Pennsylvania Department of Environmental Protection Environmental Education Grant, \$2,998.
- 2012-2013 State-of-the-art scientific equipment to support the hydrology curriculum. Shippensburg University Technology Fee Program, \$26,100.

- 2012 Effects of local fish hatchery on nitrate and phosphorus concentrations in Falling Spring Creek, Franklin County, Pennsylvania. Faculty advisor to undergraduate student C Mentzer. Shippensburg University Undergraduate Research Program, \$794.
- 2010-2011 Effects of acid mine drainage (AMD) on Shamokin Creek and local fish populations. Faculty advisor to undergraduate student N Morrow. Shippensburg University Undergraduate Research Program, \$1,054.
- 2009 Impact of residential soil compaction on urban storm water runoff. Shippensburg University Research and Scholarship Program, \$13,475.
- National Science Foundation "Chautauqua" Faculty Development Short Course: "Ecology and geology of the Colorado Front Range." Shippensburg University Center for Faculty Excellence in Scholarship and Teaching, \$1,672.
- 2007 National Science Foundation "Chautauqua" Faculty Development Short Course: "Glaciers in Alaska." Shippensburg University Center for Faculty Excellence in Scholarship and Teaching, \$1,848.
- Effects of impervious surfaces on maximum stormwater runoff temperatures: Modeling and field monitoring of the SU campus. Faculty advisor to graduate student M Mimna. Shippensburg University Graduate Research Program \$450.
- 2007 Analysis of nutrient removal capacity in a re-constructed riparian buffer: Burd Run. Faculty advisor to graduate student W Reese. Shippensburg University Graduate Research Program, \$500.
- Craig's Marsh: An investigation into the benefits of a constructed wetland. Faculty advisor to graduate student E Yearick. Shippensburg University Graduate Research Program, \$480.
- 2006 Hydrologic influences on nitrogen removal in wetlands. Shippensburg University Research and Scholarship Program, \$12,075.
- 2005 The ability of wetlands to reduce nitrate concentrations in agricultural areas. Faculty advisor to graduate student J Woodward. Shippensburg University Graduate Research Program, \$659.
- National Science Foundation "Chautauqua" Faculty Development Short Course: "Volcanism and volcanic hazards in the Southern Cascades." Shippensburg University Center for Faculty Excellence in Scholarship and Teaching, \$1,666.
- 2002 Impacts of dams on multi-objective water resources management. Faculty advisor to graduate students M Akoto, M Clements, W Taylor, and H Urwiller. Shippensburg University Graduate Research Program, \$420.
- Student research on dams and geomorphology at the Binghamton Symposium. Faculty advisor to undergraduate students K Christianson, T Glass, and J Hovetter. Shippensburg University Undergraduate Research Program, \$715.

- 2001 Assessment of post-hurricane Mitch watershed stabilization projects, Nicaragua. United States Department of Agriculture, Foreign Agricultural Service and United States Agency for International Development (two grants), \$8,338.
- Reconstruction of the physical and cultural landscape of Shippensburg, Pennsylvania at the time of European settlement, with P Marr and K Fuellhart and undergraduate student J Cunningham. Miklausen-Likar Science Research Fund, Shippensburg University, \$462.
- Process based stream channel design. Short course, Inter-Fluve, Inc., Bozeman, Montana. Shippensburg University Professional Development Committee, \$1,113.
- Comparison of precipitation gauge data to NEXRAD precipitation estimates for the Burd Run watershed, with D Stanitski-Martin and undergraduate hydrology students. Miklausen-Likar Science Research Fund, Shippensburg University, \$258.
- Introductory and advanced ArcView GIS training, Shippensburg University Professional Development Committee, \$1,267.
- 1999 Stream channel and floodplain restoration planning for Burd Run, Shippensburg, Pennsylvania, with graduate student J Herrmann. Shippensburg University Professional Development Committee, \$5,080.
- Integrating problem-based learning and a course web page into Introduction to Geology. Imperatives General-Education Revitalization Committee, Shippensburg University, \$3,352.
- 1998 Assessment of landscape and land use influences on water quality in the Burd Run watershed, with graduate student T Grote. Shippensburg University Professional Development Committee, \$2,948.
- Ability of a remediated wetland to filter out/retain common pollutants found in an urban setting, with graduate student J Staudinger. Miklausen-Likar Science Research Fund, Shippensburg University, \$390.
- 1997 Drinking water consumption rates and associated dietary magnesium and calcium in Shippensburg, PA, with J Ford, P Padgett and graduate students H Stahlnecker and M Ferroni. Shippensburg University Professional Development Committee, \$5,277.
- 1996 Water level management opportunities for the Upper Mississippi River: Hydrologic, ecologic, economic, and social concerns. Shippensburg University Professional Development Committee, \$2,282.
- Developing a soils field site for undergraduate geoenvironmental majors, with W Blewett and undergraduate student K Starner. Pennsylvania State System of Higher Education Faculty Professional Development Council, \$4,750.

1996 Historical and current land use effects on landscape and water quality in the 100 square mile watershed of Back Creek and Dennis Creek, Franklin County, Pennsylvania, with undergraduate student B Elliot. Miklausen-Likar Science Research Fund, Shippensburg University, \$300.

APPLIED RESEARCH AND CONSULTING

- 2019 Analysis of storm water runoff from roof areas, Second Presbyterian Church, Carlisle, PA.
- 2011-2017 Post-restoration stream channel geomorphic monitoring, Larry's Creek, Pennsylvania. Consultant to McTish, Kunkel, and Associates, Montoursville, PA.
- 2014-2105 Hydrologic flood analysis and expert witness, September 8, 2011 flood event, Shomper and Boyer Properties, Dauphin County, Pennsylvania. Consultant to Mette, Evans, and Woodside, PC.
- 2012-2013 Hydrologic analysis of quarry pumping discharge into Hogestown Run to support evaluation of Hempt Brothers, Inc. NPDES permit renewal review, Pennsylvania Department of Environmental Protection. Consultant to Salzman-Hughes, PC.
- 2003 Expert witness for hydrology and water quality regarding Water Quality Certification for the St. Johns Bayou and New Madrid Floodway Project in the case of Missouri Coalition for the Environment and Environmental Defense Fund (appellants) v. Missouri Department of Natural Resources (respondent), before the Missouri Clean Water Commission.
- 2002 *Amicus curiae* (friend of the court) and contributing scientist in the Supreme Court of the United States, Borden Ranch Partnership, Angelo K. Psakopoulos v. United States Army Corps of Engineers. This case examines the issue of whether grazed wetlands constitute "prior converted" agricultural lands and thus cannot be regulated as wetlands under the Clean Water Act.
- Geomorphic assessment of San Antonio River, TX. Collaborative research with Inter-Fluve, Inc. to support the San Antonio River Improvements Project, funded by City of San Antonio, Bexar County, and San Antonio River Authority.
- Ours v. Carroll, Berkeley County, WV. Hydrologic analysis addressing the cause of flow cessation in Sylvan Run.
- 2000 *Amicus curiae* (friend of the court) and contributing scientist in the Supreme Court of the United States, Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers. This case examines applicability of the Clean Water Act to regulating discharges into "isolated" wetlands.

MANUSCRIPT, PROPOSAL, AND PROJECT REVIEWS

- 1994-present Reviewed grant proposals for the National Science Foundation Geography and Regional Science Program, NSF Earth Sciences Program, National Institutes for Water Resources - U.S. Geological Survey National Competitive Grants Program, and National Research Foundation (South Africa).
- 1994-present Reviewed manuscripts for *Journal of the American Water Resources Association*, *Hydrological Processes*, *North American Journal of Fisheries Management*, *Professional Geographer*, *Physical Geography*, *Journal of Geography*, *Journal of Geoscience Education*, *Wetlands*, *Geomorphology*, *Landscape and Urban Planning*, *Journal of Latin American Geography*, *The Pennsylvania Geographer*, and *Proteus*.
- 2014 Participant, National Science Foundation conference review panel, Water Sustainability and Climate Program, Washington, DC.
- 2012 External reviewer, "Managing the Mississippi River floodplain: Achieving functional floodplains requires more than a connection to the river," in *Geomorphology and management of embanked floodplains: North American and European fluvial systems in an era of global environmental change*. P Hudson and H Middelkoop (eds.), Springer.
- 2006-2008 External reviewer, Gustavus Adolphus College, National Science Foundation Award 0511486, Establishing a research-based interdisciplinary watershed program for an environmental studies program.
- 2000-2005 Participant (seven times), National Science Foundation Division of Undergraduate Education conference review panels, Course, Curriculum and Laboratory Improvement program, Washington, DC.

UNIVERSITY AND COMMUNITY SERVICE

- 2014-present Chair, Shippensburg Borough Zoning Hearing Board.
- 2009-present Chair, Department of Geography-Earth Science Professional Affairs Committee.
- 2012-2013 Vice-Chair, Shippensburg Borough Zoning Hearing Board.
- 2003-2013 Director, Shippensburg University Center for Faculty Excellence in Scholarship and Teaching – Grants Administration.
- 2000-2013 Member, Pennsylvania State System of Higher Education Faculty Professional Development Council.
- 2003-2013 Director, Shippensburg University Center for Faculty Excellence in Scholarship and Teaching – Grants Administration.

- 2002-2011 Member, Shippensburg Borough Authority (public water system management).
- 2011 Member, Search Committee, Director of the Institute for Public Service and Sponsored Programs, Shippensburg University.
- 2009-2010 Faculty Grant Writing Support Specialist, Shippensburg University.
- 2007 Member, Search Committee, Shippensburg University Provost and Vice President for Academic Affairs
- 1996-2007 Faculty advisor, Shippensburg University Cycling Club.
- 2002-2006 Representative, Shippensburg University Faculty-Management Committee.
- 2002-2006 Faculty advisor, Shippensburg University Student Environmental Action Coalition.
- 1999-2006 Board of Directors, Conodoguinet Creek Watershed Association.
- 1995-2004 President, South Mountain Velo Club, Gettysburg, PA. Developed, organized, and promoted an annual bicycle race, raising over \$4,000 for local charities.
- 2000-2003 Chair, Shippensburg University Professional Development Committee.
- 1998-2003 Member, APSCUF Representative Council.
- 1996-2003 Chair, Department of Geography-Earth Science Curriculum Committee.
- 2000-2002 Director, Water Resources Specialty Group, Association of American Geographers.
- 1999-2001 Member, Shippensburg University Curriculum Committee.
- 2001 Director, Shippensburg University Science Seminar Series.
- 1998-2000 Member, Shippensburg University Professional Development Committee.
- 1998-1999 Director, Department of Geography-Earth Science winter seminar series.
- 1994-1996 Member, Department of Geography-Earth Science Curriculum Committee.
- 1995-1996 Co-director, Department of Geography-Earth Science winter seminar series.

HONORS AND AWARDS

- 2012 Shippensburg University Department of Geography-Earth Science "Thomas P. Feeney" Service Award.
- 2002 Cumberland County (PA) Conservation District Watershed Protection Award.
- 2000 Who's Who Among America's Teachers.

- 1990 American Water Resources Association graduate student paper competition, second place, "Environmental impact mitigation under the Clean Water Act and the National Environmental Policy Act."
- 1987 Recipient, three-year National Science Foundation Graduate Fellowship and one-year Wisconsin Alumni Research Foundation Fellowship.
- Inductee, Phi Beta Kappa Honor Society and Mortar Board Leadership Society.
- Student Research Award, Ohio Wesleyan Club of Sigma Xi, "Pollen Stratigraphy of Smoot Lake, Licking County, Ohio."