

**Sheila Frances Christopher**  
Email: puffchristopher@gmail.com

### **Research Interests**

Watershed Management/Conservation, Hydrology, Biogeochemistry, and Soil Science; hydrologic modeling; Linkages between terrestrial soil solute cycling, hydrologic solute transport through watersheds, and stream chemistry; Climate and land use change effects on water resources; conservation practices and restoration effects on water quality; communication and outreach to stakeholders

### **Education**

- 2004** Ph.D., **State University of New York, College of Environmental Science and Forestry**, Syracuse, NY  
G. P. A.: 3.98/4.0  
Advisor: Dr. Myron Mitchell  
Dissertation: Landscape Controls on Stream Water NO<sub>3</sub><sup>-</sup> in the Archer Creek Catchment of the Adirondack Park, NY
- 1996** B.S. (*Cum Laude*), **Allegheny College**, Meadville, PA  
Major: Biology, Minor: Communications
- 1994** Semester spent at **Duke University Marine Laboratory**  
Concentration: Marine Biology

### **Research**

- 2012-Current** Research Assistant Professor, University of Notre Dame, South Bend, IN  
**2009-2012** Research Scientist, Virginia Tech, Blacksburg, VA  
**2006-2009** Postdoctoral Researcher, Buffalo State College, Buffalo, NY  
**2005-2006** Postdoctoral Researcher, The Ohio State University, Columbus, OH  
**2004-2005** Postdoctoral Fellow, Hokkaido University, Hokkaido, Japan

### **Teaching**

- 2008-Current** Student advisor of research projects/theses:  
•*Christopher Janik*, undergraduate student, Project: ‘The effect of soil freezing on nitrogen dynamics: A snow manipulation study in a forested watershed in the snow belt of Gowanda, NY,’ Buffalo State College (2008),  
•*Heather Poole*, undergraduate student, Project: ‘A Study of Water Infrastructure and Sustainability at Local Level,’ Virginia tech (2010)

- Matt Hynson*, undergraduate student, Project: ‘Water Resources Implications of Cellulosic Biofuel Production at a Regional Scale,’ Virginia tech (2010)
- Lana Parker*, undergraduate student, Project: ‘Quantifying Climate Variability on Winter Hydrological and Biogeochemical Processes,’ Virginia tech (2011-2012)
- Andy Neal*, graduate student, Project: ‘Optimization of Southeastern Forest Biomass Crop Production: A Watershed Scale Evaluation of the Sustainability and Productivity of Dedicated Energy Crop and Woody Biomass Operations,’ Virginia Tech (2010-2012)
- Karen Huang*, undergraduate student, Project: ‘Linking cover crops to improved stream water quality via field-scale soil sampling, in Shatto Ditch Watershed, IN,’ University of Notre Dame (2013-2015)
- Benjamin Israel*, undergraduate student, Project: ‘Linking cover crops to improved stream water quality via field-scale soil sampling, in Shatto Ditch Watershed, IN,’ University of Notre Dame (Summer 2014)
- Kevin Fink*, undergraduate student, Project: ‘Linking cover crops to improved stream water quality via field-scale soil sampling, in Shatto Ditch Watershed, IN,’ University of Notre Dame (Summer 2014)
- Tommy Davis*, undergraduate student, Project: ‘Linking cover crops to improved stream water quality via field-scale soil sampling, in Shatto Ditch Watershed, IN,’ University of Notre Dame (2014-2015)
- Caleb Bomske*, NSF REU Student, Project: ‘Effect of substrate on transport of corn pollen in streams at LEEF’ University of Notre Dame (Summer 2014)
- Elizabeth Berg*, undergraduate student, Project: ‘Preventing nutrient loss from Indiana farms: watershed-scale pairing of cover crops and the two-stage ditch.’ University of Notre Dame (Summer 2015)
- Erik Maag*, undergraduate student, Project: ‘Preventing nutrient loss from Indiana farms: watershed-scale pairing of cover crops and the two-stage ditch.’ University of Notre Dame (2015-2016)
- Joseph Mueller* undergraduate student, Project: ‘Linking cover crops to improved stream water quality via field-scale soil sampling, in Shatto Ditch Watershed, IN,’ University of Notre Dame (2015-2016)
- Rebecca Chmiel* Visiting undergraduate student, Colby College Project: ‘Linking cover crops to improved stream water quality via field-scale soil sampling, in Shatto Ditch Watershed, IN,’ University of Notre Dame (J-term January 2016)
- Kevin Fick* Undergraduate student project exploring the role of POXC as a soil health metric, University of Notre Dame (Summer 2016).
- Edward Lopez* Undergraduate student project exploring the role of POXC as a soil health metric, University of Notre Dame (Summer 2016-current).
- Kyle White* undergraduate technician: ‘Linking cover crops to improved stream water quality via field-scale soil sampling, in Shatto Ditch Watershed, IN,’ University of Notre Dame (Spring 2017-current)

- 2007** Environmental Biology. Invited lecturer for multiple classes in water resources and pollution, Department of Biology, Buffalo State College, ~100 students.
- 2005** Watershed Hydrology. Invited Lecturer, Kyoto University.
- 2004** Forest Biogeochemistry Class. Invited lecture, Hokkaido University
- 2003-2004** Teaching Assistant, General Chemistry, SUNY College of Environmental Science and Forestry
- 1999-2003** Oversaw/taught crews of students assisting with my field research during summers
- 1995** Teaching Assistant, Evolution, Behavior, and Ecology, Allegheny College Biology Department

### Professional Experience

- 10/12-  
Current** **Research Assistant Professor, Environmental Change Initiative, University of Notre Dame**
- Developing Soil Water Assessment Tool (SWAT) model to assess water resources impact of conservation management practices in agricultural watersheds
  - Assessing efficacy of watershed-scale conservation practices on soil and water nutrient dynamics via field research for the Indiana Watershed Initiative (<http://www.indianawatershedinitiative.com/>)
  - Collaborating with colleagues to write and submit grants to secure external funding
  - Supervising undergraduate and graduate student research
- 1/09-6/12** **Research Scientist, Virginia Tech**
- Developed a Soil Water Assessment Tool (SWAT) model to assess environmental impact of intercropping switchgrass in pine plantations
  - Collaborated with colleagues to write and submit grants to secure external funding
  - Supervised undergraduate and graduate student research
- 9/06-1/09** **Postdoctoral Researcher, Buffalo State College**
- Oversaw hydrology and biogeochemical research conducted at the experimental watershed research site, including instrumentation installation and field-data collection
  - Lectured in Environmental Biology
  - Continued publications associated with this watershed
  - Wrote and submitted grants to secure external funding

- 11/05-7/06 Postdoctoral Researcher, The Ohio State University**
- Participated in the Midwest Regional Carbon Sequestration Partnership, to study carbon sequestration in agricultural fields for mitigating climate change
  - Designed and conducted a field-based project in farms across 7 mid-western states
  - Gained experience writing a review paper and several other manuscripts
- 9/04-8/05 Postdoctoral Fellow, Japanese Society for the Promotion of Science, Hokkaido, Japan**
- Awarded postdoctoral fellowship for a research proposal first peer-reviewed and approved by the U.S. National Science Foundation
  - Lectured in classes at Hokkaido University and Kyoto University.
  - Planned and conducted a soil study examining how variability in snow pack depth affects soil freezing and nitrogen cycling
  - Gained experience in soil and water sampling and N and C chemical analyses
  - Promoted international discourse in the fields of hydrology and biogeochemistry
- 8/03-5/04 Teaching Assistant, General Chemistry, SUNY College of Environmental Science and Forestry**
- Responsible for teaching two laboratory sections of General Chemistry.
  - Planned and carried out pre-laboratory lectures
  - Corrected exams and supervised 50-60 students
- 5/99-8/03 Research Assistant, SUNY College of Environmental Science and Forestry**
- Conducted collaborative hydrology and biogeochemical research while funded by a National Science Foundation grant
  - Planned and implemented an intensive field-based catchment study within the Adirondack Park, NY
  - Gained experience in hydrological and water quality field installation and instrumentation and usage
  - Became familiar with many chemical analysis techniques

### **Research Grants, Fellowships, and Activities**

- 2017-2020** Environmental Protection Agency (EPA): Cover crops prevent nutrient runoff and promote climate resiliency in Great Lakes watersheds. PI: Jennifer Tank CoPIs: **Sheila Christopher**, Todd Royer (Indiana University), Alan Hamlet (CEES), Ashish Sharma (ECI/CEES), Erin Fuller (Van Buren Cons. Dist.), Colleen Forestieri (Van Buren Cons. Dist.). \$749,100. (*PENDING*).
- 2017-2018** Indiana Corn Marketing Council/Indiana Soybean Alliance: Indiana Watershed Initiative (IWI): Continued quantification of water quality and economic benefits from the watershed-scale pairing of cover crops and the two-stage ditch through the Indiana Watershed Initiative. PI: Jennifer Tank CoPIs: **Sheila Christopher**, Todd Royer (Indiana University), John Tyndall (Iowa State University). \$81,956.

- 2017-2018** Indiana Corn Marketing Council/Indiana Soybean Alliance: Continued quantification of water quality and economic benefits from the watershed-scale pairing of cover crops and the two-stage ditch through the Indiana Watershed Initiative. PI: Jennifer Tank CoPIs: **Sheila Christopher**, Todd Royer (Indiana University), John Tyndall (Iowa State). *\$81,957.*
- 2016-2018** Walton Family Foundation: Integrating environmental and economic outcomes from cover crop adoption in Indiana. PI: Jennifer Tank CoPI: **Sheila Christopher** *\$300,000.*
- 2016-2017** Indiana Corn Marketing Council/Indiana Soybean Alliance: Indiana Watershed Initiative (IWI): Quantifying water quality responses from the watershed-scale pairing of cover crops and the two-stage ditch, PI: Jennifer Tank CoPIs: **Sheila Christopher**, Todd Royer (Indiana University), John Tyndall (Iowa State University). *\$77,234.*
- 2015-2016** Indiana Corn Marketing Council/Indiana Soybean Alliance: Watershed scale adoption of cover crops and the two-stage ditch in Indiana: responses in water quantity and quality, PI: Jennifer Tank CoPIs: **Sheila Christopher** and Todd Royer. *\$67,234.*
- 2015-2019** U.S. Department of Agriculture (USDA) Regional Conservation Partnership Program (RCPP): Preventing nutrient loss from Indiana farms: watershed-scale pairing of cover crops and the two-stage ditch, PI: Jennifer Tank CoPIs: **Sheila Christopher** and Todd Royer. *\$2,247,003 (includes match).* See project website: Indiana Watershed Initiative: <http://www.indianawatershedinitiative.com/>
- 2014-2016** Indiana Water Resources Research Center: Linking improved soil health to water quality via the planting of cover crops in the Shatto Ditch Watershed, Kosciusko Co, IN. PI: **Sheila Christopher**, Co-PI: Jennifer Tank. *\$56,843.*
- 2013-2015** University of Michigan Water Center: Watershed-scale assessment of stacked drainage practices in the Western Lake Erie Basin to improve water quality. **PI: Sheila Christopher**, Co-PIs: Scott Sowa and Jennifer Tank. Collaborators: Gust Annis, Jeff Arnold, Jane Frankenberger, Kimberly Hall, Matthew Herbert, Kevin King, Jon Witter. *\$168,520.*
- 2013-2014** Indiana Water Resources Research Center: Linking cover crops to improved stream water quality via field-scale soil sampling, in Shatto Ditch Watershed, IN. PI: **Sheila Christopher**, Co-PI: Jennifer Tank. *\$23,296.*

- 2010-2015** U.S. Department of Energy: Optimization of Southeastern Forest Biomass Crop Production: A Watershed Scale Evaluation of the Sustainability and Productivity of Dedicated Energy Crop and Woody Biomass Operations. PI: George Chescheir, North Carolina State University (NC State), Co-PIs from NC State, Virginia Tech, Weyerhaeuser Co, U.S. Forest Service, and National Council for Air and Stream Improvement. Co-PIs: **Sheila Christopher** and Stephen Schoenholtz: \$199,977 via a subcontract with Virginia Tech.
- 2009-2012** Weyerhaeuser Co.: Water Quality Implications of Biofuel Intercropping at a Watershed Scale. PI: Stephen Schoenholtz, Research Scientist: **Sheila Christopher**. \$250,000.
- 2007-2008** New York Great Lakes Protection Fund Small Grant Program (Funding by the N.Y. State, Department of Environmental Conservation): Phosphorus and nitrogen monitoring and modeling in the Cattaraugus Creek Watershed, a major tributary to Lake Erie. PI: **Sheila Christopher**, Collaborators: Phil Evans, Christopher Renschler, and Gordon Fraser, \$7535.
- 2006-2007** SUNY Buffalo State Research Foundation Incentive Grant: Soil nitrogen processes and export during winter, Point Peter Brook Watershed, Gowanda, NY. PI: **Sheila Christopher**, \$4000.
- 2006-2007** U.S. Army Corps of Engineers: Sediment modeling and assessment for the Cattaraugus Creek Watershed. PI: Christopher Renschler, PI: Gordon Fraser, Research Scientist: **Sheila Christopher**, \$120,000.
- 2004-2005** Japanese Society for the Promotion of Science Postdoctoral Fellowship (the proposal was first peer-reviewed and approved by the National Science Foundation). PI: **Sheila Christopher**, \$57,959.

## Publications and Presentations

### 1. Refereed Journals

**Christopher, S.F.**, Tank, J.L., Mahl, U.H., Hanrahan, B.R. 2017. Linking soil health to improved water quality via the planting of cover crops in the Shatto Ditch Watershed, Kosciusko Co, IN. *In Prep*.

Gökkaya, K., Budhathoki, M., **Christopher, S.F.**, Hanrahan, B.R. and Tank, J.L. 2017. Subsurface Tile Drained Area Detection Using GIS and Remote Sensing in a Midwest Agricultural Watershed. *Ecological Engineering*, *In Review*.

**Christopher, S.F.**, Tank, J.L., Mahl, U.H., Yen, H., Arnold, J.G., Trentman, M.T., Sowa, S.P., Herbert, M. E., Ross, J.A., White, M.J., Royer, T.V. 2017. Modeling nutrient removal using watershed-scale implementation of the two-stage ditch. *Ecological Engineering*, *In Press*.

- Ross, J.A., Herbert, M. E., Sowa, S.P., Frankenberger, J.R., King, K.W., **Christopher, S.F.**, Tank, J.L., Arnold, J.G., White, M.J., Yen, H. 2016. A synthesis and comparative evaluation of factors influencing the effectiveness of drainage water management. *Agricultural Water Management* 178: 366-376.
- Christopher, S.F.**, Schoenholtz, S.H., Nettles, J. 2015. Water Quantity Implications of Regional-Scale Switchgrass Production in the Southeastern U.S. *Biomass and Bioenergy* 83: 50-59.
- Kröger, R., Czarnecki, J., Tank, J.L, **Christopher, S.F.**, Witter, J. 2015. Implementing innovative drainage management practices in the Mississippi River Basin to enhance nutrient reductions. *Journal of American Water Resources Research* 51: 1020-1028.
- Christopher, S.F. and S.H. Schoenholtz. 2012. Water quality implications of regional-scale switchgrass production in the Southeastern U.S. Technical Report to Weyerhaeuser Co., 27 December 2012.
- Kerr, J.G., Eimers, M.C., Creed, I.F., Adams, M.B., Beall, F., Burns, D., Campbell, J.L., **Christopher, S.F.**, Duchesne, L., Fernandez, I., Houle, D., Jeffries, D.S., Likens, G.E., Mitchell, M.J., Shanley, J., Yao, H. 2012. The effect of seasonal drying on sulphate dynamics in stream across southeastern Canada and northeastern USA. *Biogeochemistry* DOI 10.1007/s10533-011-9664-1.
- Christopher, S.F.**, Lal, R., Mishra, U. 2009. Response to “Comments on ‘Regional Study of No-till Effects on Carbon Sequestration in the Midwestern United States.’” *Soil Science Society of America Journal* 73: 1436.
- Piatek, K., **Christopher, S.F.**, and Mitchell, M. J. 2009. Spatial and temporal dynamics of stream chemistry in a forested watershed impacted by atmospheric deposition. *Hydrology and Earth System Sciences* 13: 423-439.
- Christopher, S.F.**, Lal, R., Mishra, U. 2009. Regional Study of No-till Effects on Carbon Sequestration in the Midwestern United States. *Soil Science Society of America Journal* 73: 207-216. *Listed in top 10 most cited papers over the past three years in Soil Science Society of America Journal (<https://www.soils.org/publications/sssaj/most-cited>)*
- Campbell, J.L., Rustad, L.E., Boyer, E.W., **Christopher, S.F.**, Driscoll, C.T., Fernandez, I.J., Groffman, P.M., Houle, D., Kiebusch, J., Magill, A.H., Mitchell, M.J., Ollinger, S.V. 2009. Consequences of climate change for biogeochemical cycling in forests of eastern North America. *Canadian Journal of Forest Research* 39: 264-284.
- Christopher, S.F.**, Mitchell, M.J., McHale, M.R., Boyer, E.W., Burns, D.A., Kendall, C. 2008a. Factors controlling nitrogen release from two forested catchments with contrasting hydrochemical responses. *Hydrological Processes* 22: 46-62.

**Christopher, S.F.**, Shibata, H., Ozawa, M., Nakagawa, Y. 2008b. The effect of soil freezing on N cycling: Comparison of two headwater subcatchments with varying snowpack, Hokkaido, Japan. *Biogeochemistry* 88: 15-30.

Vermette, S. and **Christopher, S.F.** 2008. Using the rate of accumulated freezing and thawing degree days as a surrogate for determining freezing depth in a temperate forest soil. *Journal of the Middle States Geographer* 41: 68-73.

**Christopher, S.F.** and Lal, R. 2007. Nitrogen Management Effects Carbon Sequestration in North American Cropland Soils. *Critical Reviews in Plant Sciences* 26: 45-64.

**Christopher, S.F.**, Page, B.D., Mitchell, M.J., Campbell, J.L. 2006. Contrasting stream water  $\text{NO}_3^-$  and  $\text{Ca}^{2+}$  in two nearly adjacent catchments: The role of soil Ca and forest vegetation. *Global Change Biology* 12: 364-381.

Mitchell, M.J., Piatek, K., **Christopher, S.F.**, Mayer, B., Kendall, C., McHale, P. 2006. Solute sources in stream water during consecutive fall storms in a northern hardwood forest watershed: A combined hydrological, chemical and isotopic approach. *Biogeochemistry* 78: 217-246.

Inamdar, S.P., **Christopher, S.F.**, Mitchell, M.J. 2004. Export for dissolved organic carbon and nitrate during storm events in a glaciated forested catchment in New York, USA. *Hydrological Processes* 18: 2651-2661.

Park, J., Mitchell, M.J., McHale, P.J., **Christopher, S.F.**, McHale, M.R., Raynal, D.J., Myers, T.P. 2003. Interactive effects of changing climate and atmospheric deposition on N and S biogeochemistry in a forested watershed of the Adirondack Mountains, New York State. *Global Change Biology* 9: 1-18.

## **2. Professional Presentations/Published Conference Abstracts (\* student presentation)**

Tank, J.L., Hanrahan, B.R., **Christopher, S.F.** 2017. Webinar: Water Quality Targeting Success Stories Report Launch. Featuring The Indiana Watershed Initiative, May 24, 2017.

Tank, J.L., Hanrahan, B.R., **Christopher, S.F.** 2017. Changes in watershed land cover and floodplain connection reduce nutrient export from agroecosystems, Kent State University, Biological Seminar Series, April 14, 2017.

Tank, J.L., Hanrahan, B.R., **Christopher, S.F.**, Trentman, M.T., Royer, T.V., Prior, K.E. 2017. Watershed-scale land cover change alters stream ecosystem function and reduces nutrient export from agricultural landscapes, Association for the Sciences of Limnology and Oceanography 2017 Aquatic Sciences Meeting - Mountains to the Sea, March 1, 2017 (Abstract ID: 29985).



**Christopher**, S.F. and Willows, E. 2016. Indiana watershed initiative. Environmental Change Initiative Brown Bag Lunch Series, Innovation Park at University of Notre Dame, November 2016.

**Christopher** S.F., Tank J.T., Mahl, U.M., Hanrahan, B.R., Trentman, M., Pitts, E. 2016. Linking soil health to improved water quality via the planting of cover crops in the Shatto Ditch Watershed, Kosciusko County, IN., American Society of Agronomy, Crop Science Society of America, and Soil Science Society of America 2015 Annual Conference, November 6-9, Phoenix, AZ.

\*Hanrahan, B.R., Tank, J. L., Christopher, S.F., Mahl, U.H. 2016. Can changes in floodplain connection and land cover alter nutrient export from agricultural watersheds? International Water Association Regional Meeting on Diffuse Pollution and Catchment Management. Dublin, Ireland, October 24, 2016.

Tank, J.T., **Christopher**, S.F., Mahl, U.H. Floodplain restoration via with the two-stage ditch alter nutrient export from agricultural watersheds. Indiana Association for Floodplain and Stormwater Management, Florence, IN, September 9, 2016

\*Trentman, M. T., Tank, J.L., #Hanrahan, B.R., Christopher, S.F., Prior, K., Royer, T.V. 2016. Can Changes in Land Cover and Floodplain Connection Alter Nutrient Export from Agricultural Watersheds? National Non-point Source Pollution Workshop. Salt LAke City, UT. August 22, 2016.

\*Trentman, M.T., Tank, J. L., #Hanrahan, B.R., Christopher, S.F., Prior, K., Royer, T.V. 2016. Can watershed-scale cover crops reduce nutrient export from agricultural watersheds? North American Manure Expo. London, OH. August 3, 2016

Tank, J.T., **Christopher**, S.F., Mahl, U.H. Floodplain restoration via with the two-stage ditch alter nutrient export from agricultural watersheds. EcoSummit Meeting, Montpellier, France, August 31, 2016

**Christopher** S.F., Tank J.T., Hanrahan, Mahl, U.M., B.R., Trentman, M. 2016. Linking soil health to improved water quality in the Shatto Ditch Watershed, Kosciusko County, IN. 37<sup>th</sup> Annual Indiana Water Resources Research Association Annual Conference, Pokagon State Park, Angola, IN, June 8, 2016

\*Hanrahan, B.R., Tank, J.L., Christopher, S.F., Mahl, U.H. 2016. Does the planting of winter cover crops at the watershed-scale reduce nutrient loss from agricultural watersheds? 37th Annual Indiana Water Resources Association Conference, Angola, IN, June 8, 2016.

Tank, J.T., **Christopher**, S.F., Mahl, U.H. Can floodplain restoration achieved with the two-stage ditch alter nutrient export from agricultural watersheds? UCOWR-NIWR annual conference, Pensacola, FL, June 2016

- \*Mueller, J., Christopher, S.F., Maag, E., Pitts, E., Mahl, U.H., Tank, J.L. 2016. Cover crops improve soil health in the Shatto Ditch Watershed, Kosciusko Co, IN, College of Science Joint Annual Meeting, University of Notre Dame, May 2016.
- Tank, J.T., Hanrahan, B.R., **Christopher**, S.F., Trentman, M. 2016. Using cover crops to improve water quality in agricultural watersheds. Review of nitrogen management, cover crops, and other BMPs on multiple scales, Illinois State University, January 25, 2016.
- Royer T., Tank J.L., **Christopher** S.F. 2016. Indiana Watershed Initiative (IWI): Quantifying Water Quality Responses from the Watershed-Scale Pairing of Cover Crops and Two-Stage Ditch, Indiana Soybean Association Research Meeting, January 21, 2016.
- Christopher, S.F.**, Hanrahan, B.R., Tank, J.L. 2015. Cover Crops Improve Soil Health in the Shatto Ditch Watershed, Kosciusko County, IN. Healthy Soils for Healthy Water Workshop at the Nutrient Management and Edge of Field Monitoring Conference: From the Great Lakes to the Gulf. Soil and Water Conservation Society, December 1-3 2015., Memphis, TN **INVITED**
- Christopher, S.F.**, Tank, J.L., Hanrahan, B.R., Mahl, U.H. 2015. Cover Crops improve soil health in the Shatto Ditch Watershed, Kosciusko Co, IN (356-8). American Society of Agronomy, Crop Science Society of America, and Soil Science Society of America 2015 Annual Conference, November 15-18, 2015, Minneapolis, MN.
- Christopher S.F.**, Tank J.T., Sowa, S. et al. 2015. Watershed-scale assessment of stacked drainage practices in the Western Lake Erie Basin to improve water quality. University of Michigan Water Center Annual Meeting, July 21, 2015.
- \*Hanrahan, B.R., Tank, J.L., **Christopher S.F.** 2015. How do changes in conservation alter hot-spots of nutrient export in agricultural watersheds? Society for Freshwater Science, Annual Meeting, Milwaukee, WI, May 17-21, 2015.
- Tank, J.L., Hanrahan, B.R., **Christopher S.F.** 2015. Can we solve coastal “dead zones” from a distance? Watershed-scale conservation reduces nutrient export from agricultural landscapes? Society for Freshwater Science, Annual Meeting, Milwaukee, WI, May 17-21, 2015.
- \*Huang, K., Davis, T., Christopher, S.F., Mahl, U.H., Hanrahan, B.R., Tank, J.L. 2015. The influence of cover crops on soil health in Shatto Ditch Watershed, IN, College of Science Joint Annual Meeting, University of Notre Dame, May 2015.
- Tank, J.L., Royer, T. Christopher, S.F. Watershed Scale Adoption of Cover Crops and the Two-Sage Ditch in Indiana: Responses in Water Quality & Quantity. Indiana Soy Bean Association: Production and Environment Research Meeting, Indianapolis, IN, March 4, 2015.

**Christopher, S.F.**, Tank, J.L., Hanrahan, B.R., Mahl, U.H. 2014. Linking Soil Health to Improved Water Quality Via the Planting of Cover Crops in the Shatto Ditch Watershed, Kosciusko Co, in. American Society of Agronomy, Crop Science Society of America , and Soil Science Society of America 2014 Annual Conference, November 2-5 2014, Long Beach, CA.

Tank J.T., **Christopher S.F.**, Hanrahan, B.R. 2014 Linking cover crops to improved stream water quality via field-scale soil sampling, in Shatto Ditch Watershed, IN, Conservation Innovation Grant Proposal Meeting August 14, 2014.

\*Bomske, C.M., Shogren, A.J., Tank, J.L., **Christopher, S.F.** 2014. Effect of substrate on transport of corn pollen in streams at LEEF. NSF REU Final Symposium, August 1, 2014

**Christopher, S.F.**, Tank, J.L., Hanrahan, B.R., Mahl, U.H. 2014. Linking Soil Health to Improved Water Quality Via the Planting of Cover Crops in the Shatto Ditch Watershed, Kosciusko Co, in. Soil and Water Conservation Society 2014 Annual Conference, July 27-30, 2014, Lombard, IL.

**Christopher S.F.**, Tank J.T., Sowa, S. et al. 2014. Watershed-scale assessment of stacked drainage practices in the Western Lake Erie Basin to improve water quality. University of Michigan Water Center Advisory Board Meeting for Tier II Grants, June 24, 2014.

**Christopher, S.F.**, Sowa, S., Herbert, M., Arnold, J. 2014. Watershed-scale assessment of stacked drainage practices in the Western Lake Erie Basin to improve water quality. Great Lakes SWAT modeling workshop, March 18-19, 2014. Ann Arbor, MI.

Tank, J.L., Hanrahan, B.R., Dee, M., **Christopher, S.F.** 2014. Management Strategies to Reduce Nutrient Pollution from Agricultural Land Use to Improve Water Quality. Report to USDA-NRCS Indiana, March 21, 2014, Indianapolis, IN.

**Christopher, S.F.**, Tank, J.L., Hanrahan, B.R., Mahl, U.H., Huang, K. Linking the planting of cover crops to soil and water nutrient dynamics in Shatto Ditch Watershed, IN. American Geophysical Union Fall 2013 Meeting, Abstract No. B33F-0543.

Tank J.T., **Christopher, S.F.** 2013 Linking cover crops to improved stream water quality via field-scale soil sampling, in Shatto Ditch Watershed, IN, Quarterly Conservation Innovation Grant Proposal Meeting November 18, 2013.

**Christopher S.F.**, Tank J.T., Sowa, S. et al. 2013. Watershed-scale assessment of stacked drainage practices in the Western Lake Erie Basin to improve water quality. University of Michigan Water Center Advisory Board Meeting for Tier II Grants, June 27, 2013.

**Christopher, S.F.**, Schoenholtz, S.H., Nettles, J. 2013. Water resources implications of regional-scale switchgrass production in the Southeastern U.S. American Water Resources Association Spring Specialty Conference: Agricultural Hydrology and Water Quality II, St. Louis, MO, March 25-27, 2013.

- Christopher, S.F.**, Schoenholtz, S.H., Nettles, J. 2012. The effect of cellulosic biofuel production on water resources at a regional scale. American Geophysical Union Fall 2012 Meeting, Abstract No. H51O-03.
- Christopher, S.F.**, Schoenholtz, S.H., Nettles, J. 2011. Water resources implications of cellulosic biofuel production at a regional Scale. American Geophysical Union Fall 2011 Meeting, Abstract No. H13E-1263.
- Kerr, J., Eimers, M.C., Creed, I., Adams, M.B., Beall, F., Burns, D., Campbell, J., **Christopher, S. F.**, Clair, T., Courchesne, F., Dushesne, L., Fernandez, I., Houle, D., Jeffries, D., Likens, G., Mitchell, M., Shanley, J., Yao, H. 2011. A comparison of  $\text{SO}_4^{2-}$  drought response in streams across southeastern Canada and northeastern USA. American Geophysical Union Fall 2011 Meeting, Abstract No. H21K-07.
- Kerr, J., Eimers, M.C., Creed, I., Adams, M.B., Beall, F., Burns, D., Campbell, J., **Christopher, S. F.**, Clair, T., Courchesne, F., Dushesne, L., Fernandez, I., Houle, D., Jeffries, D., Likens, G., Mitchell, M., Shanley, J., Yao, H. 2011. The effect of seasonal drying on sulphate dynamics in streams across southeastern Canada and northeastern USA. Gordon Conference Summer 2011
- Christopher, S.F.**, Schoenholtz, S.H., Nettles, J. 2010. Water Quality and Quantity Implications of Biofuel Intercropping at a Regional Scale. American Geophysical Union Fall 2010 Meeting, Abstract No. B22D-03. **INVITED**
- Christopher, S.F.**, Schoenholtz, S. 2010. Water Quality and Quantity Implications of Biofuel Intercropping at a Regional Scale. Soil Science Society of America Fall Meeting, Abstract No. 56-19.
- Schoenholtz, S.H., **Christopher, S.F.**, Nettles, J. 2010. Growing short-rotation woody crops for bioenergy: environmental considerations. Soil Science Society of America Fall Meeting, Abstract No. 250-2. **INVITED**
- Christopher, S.F.**, Burns, D., Campbell, J., Shanley, J. 2010. Effects of Climate Change on Streamflow and Solute Loads in Small Watersheds: Trends and Patterns in Soil Frost and Snowmelt, Working group on 'Hydroclimatic Effects on Ecosystem Response', Trent University, Peterborough, Ontario, Canada.
- Christopher, S.F.**, Schoenholtz, S.H. 2010. Water Quality and Quantity Implications of Biofuel Intercropping at a Regional Scale. A Watershed Perspective on Bioenergy Sustainability: A Workshop at Oak Ridge National Laboratory, Oak Ridge, TN 3-4 February 2010. **INVITED.**

- Christopher, S.F.**, Mitchell, M.J., Inamdar, S. 2009. The effect of soil freezing on nitrogen dynamics: A snow manipulation study in a forested watershed in the snow belt of western New York, USA. Soil Science Society of America Fall Meeting, Abstract No. 2009.55879.
- Christopher, S.F.**, Mitchell, M.J., Inamdar, S. 2009. Factors controlling differences in nitrate release during hydrologic events in a forested watershed in western New York. American Geophysical Union Fall 2009 Meeting, Abstract No. H53D-0956.
- Christopher, S.F.**, Mitchell, M.J. Inamdar, S., 2009. The soil N source to stream runoff during snow melt is affected by soil freezing. Virginia Water Resources Research Center Annual Conference: Water Resources in Changing Climates, October 15-16, Richmond, VA.
- Christopher, S.F.**, Inamdar, S., Mitchell, M.J. 2009. The soil N source to stream runoff during snow melt is affected by soil freezing: A snow manipulation study in a forested watershed in the snow belt of western New York. Gordon Conference Summer 2009.
- Christopher, S.F.**, Mitchell, M.J., Inamdar, S. 2008. The soil N source to stream runoff during springmelt is affected by soil freezing: A snow manipulation study in a forested watershed in the snow belt of western New York, USA American Geophysical Union Fall 2008 Meeting Abstract No. H11D-0791.
- Christopher, S.F.**, Inamdar, S., Mitchell, M.J. 2008. The soil N source to stream runoff during springmelt is affected by soil freezing: A snow manipulation study in a forested watershed in the snow belt of western New York, USA. Northeastern Ecosystem Research Cooperative Conference, New England Center, Durham, NH, November 12-13.
- Vermette, S. and **Christopher, S.F.** 2008. Using the rate of accumulated freezing and thawing degree days as a surrogate for determining freezing depth in a temperate forest soil. Association of American Geographers Middle State Division Annual Conference Nov. 7-8, Millersville University of Pennsylvania, Millersville, PA.
- Christopher, S.F.**, Inamdar, S., Mitchell, M.J. 2008. The soil N source to stream runoff during springmelt is affected by soil freezing: A snow manipulation study in a forested watershed in the snow belt of western New York, USA. 9<sup>th</sup> Annual Faculty and Staff Research and Creativity Fall Forum. Buffalo State College, Buffalo, NY. October 30, 2008.
- Christopher, S.F.**, Mitchell, M.J., Inamdar, S. 2007. The effect of soil freezing on nitrogen dynamics: A snow manipulation study in a forested watershed in the snow belt of Gowanda, NY. American Geophysical Union Fall 2007 Meeting Abstract No. B31A-0066.

- Christopher, S.F.**, Mitchell, M. J. 2007. The effect of soil freezing on nitrogen dynamics: A snow manipulation study in a forested watershed in the snow belt of Gowanda, NY. 8<sup>th</sup> Annual Faculty and Staff Research and Creativity Fall Forum. Buffalo State College, Buffalo, NY. November 8, 2007.
- Christopher, S.F.**, Shibata, H., Ozawa, M., Nakagawa, Y. 2006. The effect of soil freezing on N cycling: Comparison of two headwater subcatchments with varying snowpack, Hokkaido, Japan. American Geophysical Union Fall 2006 Meeting Abstract No. B41E-0239.
- Christopher, S.F.**, Shibata, H., Ozawa, M., Nakagawa, Y., Mitchell, M.J. 2006. The Effect of Soil freezing on N Cycling: Comparison of Two Headwater Subcatchments with Varying Snowpack, Hokkaido, Japan. 7<sup>th</sup> Annual Faculty and Staff Research and Creativity Fall Forum. Buffalo State College, Buffalo, NY. October 19, 2006.
- Christopher, S.F.**, Shibata, H., Ozawa, M., Nakagawa, Y. 2005. The effect of soil freezing on N cycling: Comparison of two headwater subcatchments with varying snowpack, Hokkaido, Japan. American Geophysical Union Fall 2005 Meeting Abstract No. H23D-1446.
- Christopher, S.F.**, Shibata, H., Ozawa, M., Nakagawa, Y., Mitchell, M.J. 2005. The Effect of Soil freezing on N Cycling: Comparison of Two Headwater Subcatchments with Varying Snowpack, Hokkaido, Japan. A Synthesis of Climate Change Research in the Northeastern U.S. and Eastern Canada, Climate Variability and Change Synthesis Working Group, November 1-2, 2005
- Christopher, S.F.**, Shibata, H., Ozawa, M., Nakagawa, Y. 2005. The effect of soil freezing on N cycling: Comparison of two headwater subcatchments with varying snow pack, Hokkaido, Japan. US-Japan Workshop on Biogeochemistry and Hydrology in forested watersheds associated with LTER March 2005.
- Christopher, S.F.**, Page, B.D., Mitchell, M.J., Campbell, J.L. 2004. Contrasting stream water nitrate concentration in two nearly adjacent catchments located in the Adirondacks, NY: Investigating the role of hydrology. American Geophysical Union Spring 2004 Meeting Abstract No. H22A-01.
- Christopher, S.F.**, Page, B.D., Mitchell, M.J., Campbell, J.L. 2004. Contrasting stream water NO<sub>3</sub><sup>-</sup> in two nearly adjacent catchments: The role of soil Ca and forest vegetation. US-Japan Workshop on Biogeochemistry and Hydrology in forested watersheds associated with LTER.
- Christopher, S.F.**, Mitchell, M.J., Inamdar, S., Page, B.D. 2003. Contrasting stream water nitrate patterns in two adjacent catchments: the role of hydrologic flowpaths. Gordon Conference Summer 2003.

**Christopher, S.F.**, Mitchell, M.J., Inamdar, S., Page, B.D. 2002. Patterns of nitrate removal from two hydrologically similar catchments. American Geophysical Union Fall 2002 Meeting Abstract No. H52D-0915.

**Christopher, S.F.** 2002. Comparison of Two Subcatchments of Archer Creek Watershed. Archer Creek Conference Fall 2002.

**Christopher, S.F.**, Inamdar, S., Mitchell, M.J. 2002. Spatial patterns in surface water chemistry in a glaciated catchment of the Adirondack Park, NY: Investigating the roles of topography and hydrologic flow paths. Spotlight on Student Research, SUNY-ESF Spring 2002.

**Christopher, S.F.**, Inamdar, S., Mitchell, M.J. 2002. Spatial and seasonal patterns in surface and subsurface water chemistry: implications for hydrologic flowpaths. Salt City Chapter of the American Water Resources Association, Student Symposium Spring 2002.

**Christopher, S.F.**, Inamdar, S., Mitchell, M.J. 2002. Spatial and Seasonal patterns in surface and subsurface water chemistry: implications for hydrologic flowpaths. Geological Society of America Northeastern Conference Spring 2002, Abstract No. 31420.

**Christopher, S.F.**, Inamdar, S., Mitchell, M.J. 2001. Spatial pattern in surface water chemistry in a glaciated catchment of the Adirondack Park, NY. State-of-the-art in Hillslope Hydrology, Chapman Conference Fall 2001.

**Christopher, S.F.** 2001. Evidence of subsurface flow mechanisms and sources of solutes in the Archer Creek Catchment: Preliminary results and hypotheses. Archer Creek Conference Fall 2001.

**Christopher, S.F.**, Inamdar, S., Mitchell, M.J. 2001. Export of DOC and nitrate from a forested catchment in the Adirondack Park, NY. Gordon Conference Summer 2001.

**Christopher, S.F.**, Inamdar, S., Mitchell, M.J. 2001. Export of DOC and nitrate from a forested catchment: Influence of water sources and flowpaths. American Geophysical Union Spring 2001 Meeting Abstract No. H21B-10.

**Christopher, S.F.** 2000. Well installation and other field activities within the Archer Creek Catchment. Archer Creek Conference Fall 2000.

**Christopher, S.F.** and Mitchell, M.J. 2000. Hydrometric, hydrochemical, and isotopic evidence in support of the transmissivity feedback hypothesis within the Archer Creek catchment of the Adirondack Mountains. Spotlight on Student Research Spring 2000.

### **3. Other Publications**

**Reports:** \*Poole, H. and **S.F. Christopher**. 2010. A Study of Water Infrastructure and Sustainability at Local Level. Virginia Water Resources Research Center Special Report, SR50-2010.

**Christopher, S.F.**, Christopher Renschler. 2009. Phosphorus and nitrogen monitoring and modeling in the Cattaraugus Creek Watershed, a major tributary to Lake Erie. Final Report to New York Great Lakes Protection Fund Small Grant Program.

**Newsletters:** **Christopher, S. F.** 2005. Japanese scientists host a successful U.S.-Japan Workshop. LTER Network News, Spring 2005

**Web Interview:** ‘Water center scientist studies environmental impact of using switchgrass as a biofuel.’ Visit: <http://www.vt.edu/spotlight/innovation/2010-12-13-biofuel/biofuels.html>

### **Professional Service and Distinctions**

#### **1. Outreach and Professional Service:**

**2017** Invited talk for Jasper County, IN SWCD Annual Meeting: Tank J.T., Royer, T.V., Christopher S.F., Hanrahan B.R., Trentman M. 2017. Indiana Watershed Initiative Project Overview. February 28, 2017. **84 Participants**

**2017** Invited talk for Fulton County, IN SWCD Annual Meeting: Tank J.T., Royer, T.V., Christopher S.F., Hanrahan B.R., Trentman M. 2017. Indiana Watershed Initiative Project Overview. February 6, 2017. **84 Participants**

**2016** Participated in strategic planning for University of Notre Dame, Environmental Change Initiative. Workshop held October 2016 and planning continues.

**2016** Assisted river rafting expeditions with high school students to teach them about their local natural history on Tippecanoe River. September 2016. **100 Participants**

**2016** Demonstrated “best management practices” in a watershed model at The Notre Dame Linked Experimental Ecosystem Facility, Science Sunday, open to the public, September, 2016 **170 Participants**

**2016** Hosted Townhall Meeting for the Indiana Watershed Initiative. Gave talk entitled: “Cover Crops Improve Soil Health in the Shatto Ditch Watershed, Kosciusko County, IN: Looking ahead to Kirkpatrick.” Kirkpatrick Watershed, IN, April 14, 2016. **27 Participants** (Producers, SWCD, Univ. Notre Dame, County Surveyors)

**2016** Indiana Watershed Initiative featured at the White House Summit (March 22, 2016)



- 2016** Hosted Rebecca Holwerda, Assistant to U.S. Senator Dan Coates. Gave a tour of Shatto Ditch Watershed (part of Indiana Watershed Initiative) and talked about research findings, March 10, 2016.
- 2016** Invited talk for Steuben County SWCD Annual Meeting: Tank J.T., Hanrahan B.R., Christopher S.F., Trentman M. 2016. Using cover crops to improve water quality in agricultural watersheds. March 3, 2016. **75 Participants**
- 2016** Hosted Townhall Meeting for the Indiana Watershed Initiative. Gave talk entitled: “Cover Crops Improve Soil Health in the Shatto Ditch Watershed, Kosciusko County, IN. Shatto Ditch Watershed, IN, February 26, 2016. **22 Participants** (Producers, SWCD, Univ. Notre Dame, TNC)
- 2016** Invited talk for Kosciusko County, IN SWCD Annual Meeting: Tank J.T., Hanrahan B.R., Christopher S.F., Trentman M. 2016. Using cover crops to improve water quality in agricultural watersheds. Kosciusko County SWCD Annual Meeting, February 16, 2016. **100 Participants**
- 2016** Invited talk for Marshall County SWCD Annual Meeting: Tank J.T., Hanrahan B.R., Christopher S.F., Trentman M. 2016. Using cover crops to improve water quality in agricultural watersheds. Marshall County SWCD Annual Meeting, January 27, 2016. **75 Participants**
- 2016** Invited to contribute to the report by Michelle Perez, “Water Quality Targeting Success Stories: Achieving measurably cleaner water through U.S. farm conservation watershed projects”, World Water Institute, January 2016.
- 2016** Invited Outreach Demonstration of soil and water quality sampling and analysis for our funded USDA RCPP project, Indiana Watershed Initiative Soil Health Partnership Summit Jan 21-22 2016, Indianapolis, IN. **130 Participants** (Producers, Agronomists, Resource Managers, Researchers)
- 2016** Invited Talk for Center for Excellence Crop Day: Christopher, S.F., Hanrahan, B.R., Tank, J.L. 2016. Watershed Scale Adoption of Cover Crops in Indiana: Responses in Water and Soil Quality, Adrian MI, January 8, 2016. **250 Participants** (Producers, Resource managers, Crop Consultants)

- 2015** Field Day at Shatto Ditch Watershed to describe the Indiana Watershed Initiative project to area farmers and resource conservationists with Dan Towery, Field Manger for the Soil Health Partnership (<http://soilhealthpartnership.org/index.html> ) who specializes in continuous no-till, cover crops and soil health. September 16, 2015. **15 Participants**
- 2015** Hosted Congresswoman Jackie Walorski (IN, 2<sup>nd</sup> District) and staffers at the Shatto Ditch Demonstration Project in to describe the Indiana Watershed Initiative and current partnership with IN farmers. August 2015. **15 participants**
- 2015** Hosted Janet Perry, from USDA NRCS in Washington DC, along with Indianapolis NRCS staff and local SWCD partners at the Shatto Ditch Watershed to describe the USDA RCPP project. July 29 2015.
- 2015** Invited Talk at Conservation Tillage and Technology Conference: Tank, J.T., Christopher, S.F., Hanrahan, B.R. 2015 Using cover crops to prevent nutrient loss and improve water quality, Ada. OH, March 3, 2015.
- 2015** Hosted Townhall Meeting for the Indiana Watershed Initiative. Kirkpatrick Watershed, IN, February 25, 2015. **15 Participants** (Producers, SWCD, Univ. Notre Dame, County Surveyors)
- 2015** Hosted Townhall Meeting for the Indiana Watershed Initiative. PI gave talk: Tank J.T., **Christopher** S.F., Hanrahan, B.R. 2015 Linking cover crops to improved stream water quality via field-scale soil sampling, in Shatto Ditch Watershed, IN”, Shatto Ditch Watershed, IN February 3, 2015. **15 Participants** (Producers, SWCD, Univ. Notre Dame, TNC)
- 2015** Working Group Member: “Beginning Regional Conservation Partnership Program (RCPP) Watershed Projects,” 5<sup>th</sup> Annual Leadership for Midwestern Watersheds Meeting. Goal: To bring together watershed project directors and key stakeholders from five Upper Midwestern states to compare notes and share lessons learned about project design and implementation, January 21-22, 2015, Sycamore, IL.
- 2014** Demonstrated “best management practices” at The Notre Dame Linked Experimental Ecosystem Facility, Science Sunday, October 5, 2014

- 2014** Working Group Member: “Healthy Soils for Healthy Waters” Workshop. Goal: To create an integrated science, education, economic, and extension-based framework that results in agricultural producers using adaptive systems management approaches that maintain or enhance productivity and profitability while reducing the nutrient exports that cause adverse water quality impacts such as hypoxia and harmful algal blooms. The Ohio State University, September 14-15, 2014, Columbus, OH.
- 2014** Working Group Member and invited presenter: “Great Lakes SWAT modeling workshop.” Goal: To present the latest research in the region and to discuss major SWAT challenges and needed improvements. University of Michigan, March 18-19, 2014. Ann Arbor, MI.
- 2014** Working Group Member: “Phosphorus along the Land-River-Lake Continuum” Research Planning and Coordination Workshop. Goal: to bring together researchers from the sequential habitat zones extending from land, through streams and rivers, and into bays, nearshore zones and open waters of Lake Erie, Heidelberg University, March 12-14, 2014, University, Tiffin, OH.
- 2013** Co-session chair, “The effect of land use on nutrient dynamics of the Great Lakes: Patterns, processes, and solutions, Great Lakes Restoration and Resiliency,” International Association of Great Lakes Research Annual Conference, West Lafayette, IN June 2-6.
- 2013** Student Presentation Judge, Great Lakes Restoration and Resiliency, International Association of Great Lakes Research Annual Conference, West Lafayette, IN June 2-6.
- 2013** Recruitment Weekend, Biology Department, University of Notre Dame, February 9, 2013
- 2012** Student Presentation judge, Graduate Student Assembly’s 28<sup>th</sup> Annual Research Symposium, Virginia Tech, March 28, 2012
- 2011** Co-convener, “Seasonal Effects of Climate Variability and Change on Hydrological and Biogeochemical Processes,” Fall 2011 American Geophysical Union Meeting, San Francisco, CA.
- 2011** Co-convener, “Nitrogen Export From Headwater Catchments: Integrating Biogeochemical Processing With Hydrologic Transport,” Fall 2011 American Geophysical Union Meeting, San Francisco, CA.
- 2011** Coordinator of audio-visual component of the Virginia Water Resources Research Center Annual Conference: ‘Coal and Water in Central Appalachia: The Challenge to Balance,’ November 2011, Virginia Tech.

- 2011** Student Presentation judge, Graduate Student Assembly's 27<sup>th</sup> Annual Research Symposium, Virginia Tech, March 23, 2011
- 2009-2012** *Working Group* member: "The Nitrogen Group", at Virginia Tech. Members include: Mary Beth Adams, John Barrett, Charlene Kelly, Jennifer Knoepp, Kevin McGuire, Karin Rebel, Stephen Schoenholtz, Durelle, Scott, Brian Strahm, Jack Webster. Write institutional and National Science Foundation grants on nitrogen cycling and transport through forested watersheds
- 2010** Coordinator of student presentations and judging, Virginia Water Resources Research Center Annual Conference: "Navigating Changes in Stormwater Technology and Policy," October 21 2010, Richmond, VA.
- 2010** Student Presentation judge, 2<sup>nd</sup> Annual Forest Resources and Environmental Science Graduate Research Symposium, Virginia Tech, March, 2010
- 2010-2012** *Working group* member, "Hydroclimatic Effects on Ecosystem Response", funded by Northeastern States Research Cooperative. I Represent the Fernow Experimental Forest (USDA Forest Service)
- 2009-2012** Member Research Group, "Environmental Impact of Forest Biofuel Production", ([http://catchlight.bae.ncsu.edu:7777/welcome\\_page.html](http://catchlight.bae.ncsu.edu:7777/welcome_page.html)). Conducting regional scale hydrologic modeling examining the effects of large scale land use change on water resources
- 2009-2011** Volunteer technical advisement to the media, American Geophysical Union climate science Q&A project for the 2009 Climate Conference, Copenhagen, Denmark and beyond
- 2009** Student Presentation judge, Virginia Water Resources Research Center Annual Conference: 'Water Resources in Changing Climates,' October 15-16, 2009, Richmond, VA.
- 2007-2009** Member of Technical Advisory Group for a Watershed Management Plan along the Cattaraugus Creek (southwestern, NY, 5 counties)
- 2007-2008** Mentor underprivileged kids through NSF funded, Science Firsthand, Buffalo, NY. This is a nonprofit organization dedicated to promoting scientific learning through direct experience
- 2005-2009** *Working group* member, "Climate Variability and Change (CVC)," Northeastern Ecosystem Research Cooperative

- 2005** Helped plan a workshop in Japan, a U.S.-Japan Workshop on long-term ecological research. This workshop helped Japanese scientists interact with and learn from US scientists and promoted their involvement in international watershed science, a field in which they are largely under-represented, Spring 2005
- 2002** Head planner for the AWRA Student Symposium
- 1999, 2000, 2001** Committee for the annual AWRA Student Symposium
- 1998** Member of the planning and steering committee for the “Caring For Creeks Symposium,” sponsored by the Great Lakes Community Foundation Collaborative and the Rochester Area Community Foundation

## **2. Membership:**

- American Geophysical Union (since 2000)
- Soil Science Society of America (since 2009)
- American Water Resources Association (since 2013)

## **3. Proposal Review:**

2008 USDA-NRI; 2009 Agriculture and Agri-Food Canada (AAFC); US CSREES FY 2009 Food and Agricultural Sciences National Needs Graduate and Postgraduate Fellowship Grants Program; 2009 USDA-NRI, USDA internal manuscript review, USDA CSREES 2009

## **4. Journal Review:**

Advances in Water Resources, American Society of Agricultural and Biological Engineers, Ecological Applications, Ecosystems, Environmental Modeling and Software, Environmental Science and Technology, Global Change Biology, Hydrological Processes, Hydrology and Earth System Science, Journal of Plant Nutrition and Soil Science, Journal of Environmental Quality, Journal of Geophysical Research, Journal of Hydrology, Physical Geography, Plant and Soil, Soil Biology and Biochemistry, Soils Science Society of America Journal, Wetlands

## **5. Officer of Professional Organization**

- 9/00-1/03** President, Salt City Chapter American Water Resources Association  
**8/99-8/00** Vice President, Salt City Chapter American Water Resources Association

## **6. Honors and Awards:**

- 2012** Christopher et al. 2009 listed in top 10 most cited papers over the past three years in Soil Science Society of America Journal (<https://www.soils.org/publications/ssaj/most-cited>)
- 2003** Outstanding Student Research, Graduate Student Association (SUNY ESF)

**2001-2002** Outstanding Student Chapter Award, American Water Resources Association  
**1996** Doane Scholar (maintained at least a 3.8 G.P.A.)  
**1995-1996** Endowment Scholarship from Kappa Alpha Theta  
**1995** Varsity letter achieved in lacrosse  
**1992-1995** Alden Scholar every semester, Allegheny College  
**1992-1996** Provost Merit Scholarship, Allegheny College

### **Other Professional Training/Workshops**

**June 2016** PRIMER 7 multivariate statistics package training, Raleigh, NC

**March 2007** SWAT (Soil and Water Assessment Tool) workshop

**November 2009**

**February 2003** Snowmelt and Storm Events: Biogeochemical and Hydrological Responses.

**March 2002** Dissolved Organic Carbon (DOC), Organic Matter Characterization and Hydrological Relationships

**Nov. 2001** End-Member Mixing Analysis (EMMA)

**March 2001** Use of Stable Isotopes As Tracers of Hydrological, Chemical and Biological Processes in Aquatic Ecosystems and Watersheds

### **Collaborators (last 5 years)**

Adams, MB (USFS)	Mitchell, MJ (PhD Advisor, SUNY-ESF)
Amatya, D (USFS)	Nettles, J (Weyerhaeuser)
Appelboom (NC St)	Ross, J (TNC)
Arnold J (USDA-ARS)	Royer, T (IU Bloomington)
Barett, J (VT)	Schoenholtz, S (VT)
Bilby, B (Weyerhaeuser)	Sharma, A (UND)
Birgand, F (NC St)	Shibata, H (Postdoc Advisor, Hokkaido U, Japan)
Busby, D (Weyerhaeuser)	Skaggs, RW (NC St)
Chen, C-M (UND)	Sowa, S (TNC)
Chescheir, G (NC St)	Strahm, B (VT)
Czarnecki, J (Miss. State)	Tank, J (UND)
Frankenberger, J (PU)	Tyndall, J (IA State)
Hamlet, A (UND)	Ward, A (OSU)
Herbert, M (TNC)	Webster, J (VT)
Kelly, C (USGS)	Ward, A (OSU)
King, K (USDA)	White, M (USDA-ARS)
Knoepp, J (USFS)	Witter, J. (OSU)
Kröger, R. (Covington Civil & Env.)	Yen, H (USDA-ARS)
Lal, R (Postdoc Advisor, OSU)	Youssef, M (NC St)
McGuire, K (VT)	

### **Other Skills and Training**

•Violinist •Intermediate in Turkish •Conference planning skills