**EDUCATION** **PhD Student,** July 2015-Present

*The University of Notre Dame,* Notre Dame, IN

Major Advisor: Dr. Jennifer L. Tank

**Master of Biology,** August 2015

*Kansas State University,* Manhattan, KS

Major Advisor: Dr. Walter Dodds

Dissertation title: “Biotic and abiotic effects on biogeochemical fluxes across multiple spatial scales in a prairie stream network”

**Bachelor of Arts,** *cum laude*May 2012

*Manchester University,*North Manchester, IN

Major: Environmental Science, technical concentration

GPA: 3.64/4.00

**RESEARCH EXPERINECE**

Summer 2015 **University of Notre Dame**

Graduate Research Assistant

Advisor: Dr. Jennifer L. Tank

Spring 2014- **Kansas State University**

Summer 2015 Graduate Research Assistant

Scale, Consumers and Lotic Ecosystem Rates (SCALER)

* Comparing and modeling stream biogeochemical rates (N-uptake, metabolism) across a variety of spatial areas on Konza Prairie Biological Station.
* Determining macro consumer (i.e. fish, crayfish) effects on biogeochemical rates

Fall 2012- **Kansas State University**

Fall 2013 Graduate Teaching Assistant

Advisor: Dr. Walter K. Dodds

Summer 2012 **Kansas State University**

Field Technician: Manhattan, KS

Advisor: Dr. Walter K. Dodds

Summer 2011 **Institute of Ecosystem Studies**

REU Student Intern: Millbrook, NY

Advisor: Dr. William Schlesinger

* “The effect of retention ponds and riparian vegetation on nutrient concentrations in a golf course stream in Millbrook, NY”

Summer 2009 **Middle Eel River Watershed Initiative**

Watershed technician: North Manchester, IN

Dr. Jerry Sweeten

* Collected and tested water samples for nutrients, suspended solids, and E. Coli.
* Performed fish, freshwater mussel, macro invertebrate, and habitat surveys in the Eel River.

**PUBLICATIONS**

**M.T. Trentman**,C.L. Atkinson, J.D. Brant. Native freshwater mussel effects on nitrogen fluxes in benthic sediments: interactive impacts of nutrient limitation and biomass dependency. *In Prep.* Freshwater Biology.

**M.T. Trentman**, W.K. Dodds, K.B. Gido, J. Rüegg, and C.M. Ruffing. Biotic and abiotic controls of patch-scale biogeochemical fluxes along a prairie stream network*. In Prep.* Freshwater Biology.

**M.T. Trentman.** The impact of long-term regional air mass patterns on nutrient precipitation chemistry within a United States grassland ecosystem. *In Prep.* Atmospheric Research.

C. Song, W.K. Dodds, **M.T. Trentman**, J. Rüegg, and F. Ballantyne IV. Methods of approximation influence stream metabolism estimates. *In Press*. Limnology and Oceanography: Methods.

J. Rüegg, K.R. Sheehan, C.L. Baker, W.B. Bowden, M.D. Daniels, W.K. Dodds, K.J. Farrell, M.B. Flinn, T.K. Harms, J.B. Jones, L.E. Koenig, J.S. Kominoski, W.H. McDowell, S.P. Parker, A.D. Rosemond, **M.T. Trentman,** M. Whiles, and W.M. Wollheim. Multi-scale comparison of baseflow physio-geomorphic heterogeneity in stream networks across diverse biomes*. Landscape Ecology* 31:119-136.

**M.T. Trentman**, W.K. Dodds, J.S. Fencl, K. Gerber, J. Giarneri, S. Hitchman, Z. Peterson, and J. Rüegg. 2015 Quantifying ambient nutrient uptake and functional relationships in streams: a comparison between tracer, pulse and steady-state approaches*. Biogeochemistry*. 125 (1): 65-79.

J. Rüegg, J. Brant, D. Larson, **M.T. Trentman**, and W.K. Dodds. 2015. A portable, modular, self-circulating chamber to measure benthic processes under controlled water velocity. *Freshwater Science* 34 (3), 831-844.

**RESEARCH INTERESTS**

Aquatic nutrient cycling

Effect of scale on measuring and predicting ecosystem rates

Denitrification in riparian and aquatic systems

Interactions between weather patterns and nutrient deposition

**TEACHING EXPERIENCE**

Teaching Assistant, Kansas State University, 2012-2015

Undergraduate research mentor (Spring 2015); “Measuring reach-scale uptake of organic compounds”

Freshwater Ecology, (Fall 2014)

Organismic Biology, (Fall 2013, Spring 2014)

REU Mentor, (Summer 2013); “The effect of crayfish on nitrogen cycling rates in a prairie stream”

Principles of Biology, (Fall 2012, Spring 2013, Spring 2015)

Lab Assistant, Manchester University, 2010-2012

Principles of Biology (Spring 2012), Academic Mentor

Principles of Biology (Fall 2010, Fall 2011)

**AWARDS**

Spring 2015 Mulholland Fund Award- Society of Freshwater Science Endowment Fund ($1000)

**GRANTS**

Spring 2016 Environmental Change Initiative- University of Notre Dame

* Linked Experimental Ecosystem Facility Research grant ($1500)

Graduate School Professional Development- University of Notre Dame

* Zahm Research Travel Grant Fund-University of Notre Dame ($500)

Graduate Student Union- University of Notre Dame

* Conference Presentation Grant ($120)

Fall 2015 College of Arts and Sciences- Kansas State University

* Arts & Sciences Graduate Student Research Travel Award ($1000)

Biology Graduate Student Association- Kansas State University

* Travel Grant ($500)

Spring 2014 Biology Graduate Student Association- Kansas State University

* Workshop Grant ($300)

Fall 2013 College of Arts and Sciences- Kansas State University

* Arts & Sciences Graduate Student Research Travel Award ($1000)

**PRESENTATIONS**

**ORAL**

**M.T Trentman**,J.L. Tank, B. Hanrahan, S. Christopher, K. Prior. T.V. Royer. Can watershed-scale cover crops reduce nutrient export from agricultural watersheds? North American Manure Expo. Aug. 2016

**M.T Trentman**,J.L. Tank, B. Hanrahan, R.T. Davis, S. Roley, K. Prior. T.V. Royer. The interaction between floodplain restoration and changing land cover on stream metabolism in a Midwestern agricultural stream. Indiana Water Resources Association annual meeting. June 2016

**M.T Trentman**,J.L. Tank, B. Hanrahan, R.T. Davis, S. Roley, K. Prior. T.V. Royer. The interaction between floodplain restoration and changing land cover on stream metabolism in a Midwestern agricultural stream: continuation of a multi-year dataset reflecting a range of conservation practices. Society of Freshwater Science annual meeting. May 2016.

**M.T Trentman,** W.K. Dodds, K. Gido, J. Rüegg, C. Ruffing. Using structural equation modeling to determine effects of fish presence and environmental factors on stream benthic biogeochemical rates. Society of Freshwater Science annual meeting. May 2015.

**M.T. Trentman**, W.K. Dodds, K. Gido, J. Rüegg, C. Ruffing. Watershed position, habitat heterogeneity, and macro consumers affect ecosystem rates at patch scales. Society of Freshwater Science annual meeting. May 2014.

**M.T. Trentman**, W.K. Dodds, K. Gido, J. Rüegg, C. Ruffing. Watershed position, habitat heterogeneity, and macro consumers affect ecosystem rates at patch scales. KSU Division of Biology Forum. Mar 2014.

**M.T. Trentman**, J. Rüegg, W. Dodds, K. Gido, D. Larson. Scaling metabolism and nutrient uptake at patch (0.1 m) and reach (60 m) scales in a reference prairie stream. Society of Freshwater Science annual meeting. May 2013.

**M.T. Trentman**. The effect of retention ponds and riparian vegetation on nutrient concentrations in a golf course stream in Millbrook, NY. Manchester University Student Research Symposium. April 13, 2012. Manchester University. North Manchester, IN. March 2012.

**M.T. Trentman**, W. Schlesinger, S. Findlay. The effect of retention ponds and riparian vegetation on nutrient concentrations in a golf course stream in Millbrook, NY. REU Undergraduate Research Symposium. Cary Institute of Ecosystem Studies. Millbrook, NY. August 2011.

**M.T. Trentman**. Population estimation of Gypsy moths (*Lymantria dispar*) for determination of potential sites of eradication along a quarantine line. Manchester University Student Research Symposium. North Manchester, IN. April 2011.

**POSTER**

**M.T. Trentman**, W.K. Dodds, K.B. Gido, J. Rüegg, C.M. Ruffing, C. Song. Scaling nested measurements of biogeochemical rates across prairie stream reaches with varying biotic and abiotic characteristics. LTER-All Scientists Meeting. Estes Park, CO. September 2015.

J. Brant, **M.T. Trentman**, K. Culbertson, W.K. Dodds. Crayfish effects on ecosystem rates in prairie streams. Society of Freshwater Science annual meeting. May 2014.

**PROFESSIONAL TRAINING**

Multivariate Statistics in PRIMER Short Course

* North Carolina State University, Raleigh, NC. July 2016
* Instructed on the use of PRIMER for multivariate statistical analyses.

Social Responsibilities of Researchers (SRR) Fellow

* John J. Reilly Center for Science, Technology, and Values, University of Notre Dame, IN. 2016
* Training in ethical, social engagement, and communication of research.

Fundamentals of Ecosystem Science Short Course

* Cary Institute of Ecosystem Studies, Milbrook, NY. Jan 2016
* Interacted with Cary scientists and a diverse pool of students to better understand the fundamentals of ecosystem ecology.

An Introduction to Structural Equation Modeling for Ecology & Evolutionary Biology

* University of Massachusetts, Boston, Mass. Jan 2015
* Worked with Dr. Jarret Byrnes to learn SEM and path analyses in R.

Hybrid Single Particle Integrated Trajectory (HYSPLIT) Model Workshop

* NOAA Air Resources Laboratory, College Park, Maryland. June 2014.
* Worked with HYSPLIT model experts to better understand atmospheric modeling of particle trajectories and dispersion.

**PROFESSIONAL MEMBERSHIPS**

Society of Freshwater Science (SFS)

**SERVICE**

Reviewer for: Freshwater Science, Environmental Monitoring and Assessment, Journal of Environmental Quality.

UND Biology Graduate Student Organization Executive Committee

* 2016 Treasurer

Society of Freshwater Science- Student Resources Committee

* Mentor-Mixer committee chair, 2016 meeting.

Science Sunday 2015-ND Linked Experimental Ecosystem Facility (LEEF). Brought science to the public.

Session Organizer, 2014 Society of Freshwater Science meeting. May 2014.

* A. Rugenski, C.L Atkinson, E. Moody, **M. Trentman**. From individuals to ecosystems: Consumer driven nutrient recycling across aquatic ecosystems.

KSU Biology Graduate Student Association Executive Committee

* 2014 Treasurer/2014 Food-Fun Committee Chair

Guest Judge, Wamego High School, KS 2014 Science Fair