**Curriculum vitae**

**Arial JOY Shogren**

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Notre Dame, IN 46556

**Education:**

*Ph.D. Candidate,* University of Notre Dame, Biological Sciences, Fall 2013-present, GPA 4.0

*B.A*, Vassar College, Biology/Anthropology, 2013, GPA 3.75

**ACADEMIC HONORS & FELLOWSHIPS**

Environmental Protection Agency Science to Achieve Results (STAR) Fellow 2015

Society for Freshwater Science Instars Graduate Mentor, May 2016

Society for Freshwater Science Instars Graduate Mentor, May 2015

Society for Freshwater Science Instars Graduate Mentor, May 2014

Society for Freshwater Science Instars Fellow, May 2013

Member of Sigma Xi, Elected May 2013

Vassar College Departmental (Biology) Honors, May 2013

Vassar College General Honors, May 2013

Seven Sister’s Senior Scholar-Athlete, 2012

Liberty League All Academic Honors (Track and XC), 2009, 2010, 2011, 2012

Cary Institute Research Experience for Undergraduates (REU) Fellow, Summer 2011

Vassar College Undergraduate Summer Research Institute (URSI) Fellow, Summer 2010

Kate Roberts Award for Excellence in Biology, Vassar 2010

**GRANTS & SCHOLARSHIPS**

Science to Achieve Results, Environmental Protection Agency. $136,000. Awarded Spring 2016.

Notre Dame Professional Development Award. $500. Awarded May 2016.

Society for Freshwater Science General Endowment Award. $1000. Awarded May 2014

Grants in Aid for Research Award, Sigma Xi. $900. Awarded March 2014

Environmental Change Initiative RFP. $5000. Awarded March 2014

Cary Institute Fundamentals of Ecosystem Ecology Scholarship. $500. Awarded January 2013

Notre Dame Professional Development Award. $1200. Awarded November 2013.

Millbrook Garden Club Scholarship, $700. Awarded February 2012.

**RESEARCH EXPERIENCE:**

*Doctoral Research:* Department of Biological Sciences, Notre Dame, 2013-present. Research Advisor: Dr. Jennifer Tank

*Graduate Research Projects:*

*Predicting the effect of heterogeneous substrate on the fluvial transport of fish eDNA using flow-through column experiments (ECI).* **Arial Shogren**, Eily Andruszkiewicz, Jennifer Tank, Brett Olds, Christopher Jerde, Diogo Bolster.

*Monitoring the dispersal of GMO byproducts using Light Transmission Spectroscopy (USDA).*  Scott Egan, Jennifer Tank, Emma Rosi-Marshall, **Arial Shogren**, Carol Tanner, Steve Ruggiero, Jeff Feder, David Lodge.

*Undergraduate Research Projects:*

*Stream biofilm response to short-term exposure to pharmaceuticals.* Honors Thesis Independent Research. 2012-2013. Research Advisors: Dr. Emma Rosi-Marshall (Cary Institute), Dr. Lynn Christenson, & Dr. Marshall Pregnall.

*Interactive drought and tree-level response of adelgid-infested eastern hemlock trees.* Cary Institute of Ecosystem Studies NSF-REU in Translational Ecology. Summer 2011. Research advisors: Dr. Gary Lovett & Dr. Shannon LaDeau.

*Plant Community Succession in the Edith Robert’s Ecological Laboratory.* Vassar Undergraduate Summer Research Institute. Summer 2010. Research advisors: Dr. Margaret Ronsheim & Dr. Lynn Christenson. <http://www.nytimes.com/2013/07/26/nyregion/vassar-revives-garden-nurtured-by-early-promoter-of-native-plants.html?_r=0>

**Presentations:**

*Estimating environmental DNA (eDNA) transport and the influence of substrate heterogeneity using ND LEEF*. **Arial Shogren**, Jennifer L. Tank, Brett Olds, Andrew Mahon, Christopher Jerde, Diogo Bolster. North American Congress on Conservation Biology, Madison, WI, July 2016.

*Biofilm colonization and substrate influences on particle retention in experimental streams at ND-LEEF.* **Arial Shogren**, Jennifer L. Tank, Brittany Hanrahan, Diogo Bolster. Society for Freshwater Science, Sacramento, CA, May 2016.

*Estimating environmental DNA (eDNA) transport and the influence of substrate heterogeneity using ND LEEF*. **Arial Shogren**, Jennifer L. Tank, Diogo Bolster, Christopher Jerde, Scott P. Egan, Carol Tanner, Steven Ruggiero. Ecological Society of America, Baltimore, MD, August 2015.

*Investigating fine particle transport and substrate heterogeneity using ND LEEF*. **Arial Shogren**, Jennifer Tank, Joseph Mueller, Diogo Bolster, Christopher Jerde. Society for Freshwater Science, Milwaukee WI, May 2015.

*Estimating species richness with environmental DNA.* Christopher L. Jerde, Brett P. Olds, Mark A. Renshaw, Cameron R. Turner, Nathan Evans, **Arial Shogren**, Karen Uy, Crysta Gantz, Jennifer L. Tank, Diogo Bolster, Andrew R. Mahon3, Michael E. Pfrender, Gary A. Lamberti, and David M. Lodge. Society for Conservation Biology, Missoula, June 2014.

*Predicting the effect of heterogeneous substrate on the fluvial transport of fish eDNA using flow-through column experiments.* **Arial Shogren**, Eily Andruszkiewicz, Jennifer Tank, Brett Olds, Christopher Jerde, Diogo Bolster. Oral presentation. Joint Aquatic Sciences Meeting, Portland OR, May 2014

*Stream biofilm response to short-term exposure to pharmaceuticals.* **Arial Shogren**, Emma Rosi-Marshall, Heather Bechtold, Lynn Christenson, Marshall Pregnall. Honors Thesis Defense, Vassar College, May 2013

*Stream biofilm response to short-term exposure to pharmaceuticals.* **Arial Shogren**, Emma Rosi-Marshall, Heather Bechtold, Lynn Christenson, Marshall Pregnall. Poster. Hudson River Environmental Society Conference, New Paltz NY, May 2013

*Stream biofilm response to short-term exposure to pharmaceuticals.* **Arial Shogren**, Emma Rosi-Marshall, Heather Bechtold, Lynn Christenson, Marshall Pregnall. Poster. Society for Freshwater Science Annual Meeting, Jacksonville FL, May 2013

**PUBLICATIONS:**

*Published*

**Shogren A.J.,** Tank J.L, Andruszkiewicz E.A., Olds B., Jerde C., Bolster D. Modeling the transport of fish environmental DNA using continuous flow-through column experiments. *J Roy Soc Interface. June 2016.*

Jerde C.L., Olds B.P., **Shogren A.J.**, Andruszkiewicz E.A., Mahon A.R., Bolster D., and Tank J.L.. The transport of vertebrate environmental DNA in lotic systems with variable substrate.*Environmental Science & Technology*. *July 2016.*

*In Prep or In Review*

Lee S., Rosi-Marshall E.J., Dutton C.L., Hoellein T.J., Kelly J.J., **Shogren A.J**., Subalusky A.L., Tank J.L., Wellard-Kelly H.A. Submitted Dec. 2015. Artificial Streams: A practical guide for innovation and discovery in stream ecology. In Review 2016 at *Limnology & Oceanography Methods*.

**Shogren A.J.,** Tank J.L., Olds B., Egan S., Mahon A., Jerde C.L., Bolster D. Estimating environmental DNA (eDNA) transport and the influence of substrate heterogeneity using ND LEEF - In Prep 2016 for Nature Communications.

Griffiths N.A., Tank J.L., Royer T.V., **Shogren A.J.**, Frauendorf T.C., Rosi-Marshall E.J., Whiles M.R., Occurrence, degradation, and sorption of Cry1Ab protein from genetically-modified maize detritus in agricultural streams. – In Prep 2016 for Molecular Ecology

**Relevant Coursework:**

*University of Notre Dame*

Fate & Transport of Environmental Contaminants

GLOBES Communication Module

Responsible Conduct in Research & Ethics Workshop

Stream Ecology

Ecosystem Forecasting

Theoretical Population Ecology

Topics in Biocomputing: Ecosystem Modeling

Biogeochemistry and Ecosystem Ecology

Aquatic Insects

Cary Institute Fundamentals of Ecosystem Ecology

*Vassar College*

Plant Physiology

Biology in the News

Introduction to Biology

Biological Statistics

Applied Statistical Modeling

Ecology

Ecosystem Structure & Function

Conservation Biology

Aquatic Ecology

Environmental Contamination and Remediation

Animal Structure & Diversity

Sediments, Strata, and the Environment

**WORK EXPERIENCE:**

*Stream Ecology Project & Field Technician:* Cary Institute of Ecosystem Studies, Millbrook NY, May-September 2012. Employer: Dr. Emma Rosi-Marshall

**TEACHING EXPERIENCE:**

*Graduate Teaching Apprentice:* Stream Ecology. Fall 2016.

*Graduate Teaching Assistant:* Stream Ecology. Fall 2016.

*Graduate Teaching Assistant:* Biostatistics. Spring 2015.

**PUBLIC OUTREACH:**

St. Croix Environmental Field Education, Summer 2016

Girls Ambitious About Life Sciences (GAALS) St. Pat’s Park Public Outreach Event – Aquatic Insect Identification Module Leader, May 2016

Notre Dame LEEF Science Sunday, September 2015

Warsaw Raft Project, September 2015

Tippecanoe Raft Trip, September 2015

Science Olympiad Coach, “Green Generation”, 2014-2015

St. Croix Environmental Field Education, Summer 2015

Notre Dame Linked Experimental Ecosystem Facility Science Sunday public outreach event, October 2014

First Year and Advanced St. Croix Environmental Field Education Instructor, Edgewood High School of the Sacred Heart, Madison WI, May 2013-present

Girls Ambitious About Life Sciences (GAALS) St. Pat’s Park Public Outreach Event – Aquatic Insect Identification Module Leader, May 2014

Association of Women in Science Expanding Your Horizons Event, April 2014

St. Croix Environmental Field Education, Summer 2014

Notre Dame Linked Experimental Ecosystem Facility Science Sunday public outreach event, Nov. 2013

Notre Dame Linked Experimental Ecosystem Facility donor event, Nov. 2013

St. Croix Environmental Field Education, Summer 2013

**MEMBERSHIPS IN PROFESSIONAL SOCIETIES:**

Ecological Society of America, 2015-present

Society for Freshwater Sciences, 2013-present

American Women In Science, 2013-present

Sigma Xi, 2013-present

**SOCIETY SERVICE:**

Society for Freshwater Science Diversity Committee Co-Chair, 2016-2017

**DEPARTMENTAL SERVICE:**

Graduate Chair of Biology Department EEEC Search Committee, Fall 2015-Spring 2016

**UNDERGRADUATE MENTEES:**

Nicole Gorman (ND, ENST) – Summer 2016-present

Audrey Thellman (ND, BIOS) – Fall 2014-present

Carolyn Hammock (ND, BIOS) – Fall 2014-Fall 2015

Aiden Sperry (IU, BIOS) – Summer 2015

Joeseph Mueller (ND, BIOS) – Spring 2014-Spring 2016

Eily Andruskievich (ND, CEEES) – 2013-2014

Judah Easton (IUSB, Physics) – 2013-2014

Caleb Bomske (Florida Christian College, Biology, NSF-REU student) – Summer 2014

**HIGH SCHOOL MENTEES:**

Julianna Kuecker (Edgewood HS) – Summer 2016

Cole Pantano (Edgewood HS) – Summer 2016

Jacob Darien (Edgewood HS) – Summer 2016

Mckinley (Edgewood HS) – Summer 2016

Angie DeVries (Edgewood HS) – Summer 2014, 2015

Fred Richards (Edgewood HS) – Summer 2015, 2016

Max Foege (Edgewood HS) – Summer 2015

Louis Squitieri (Edgewood HS) – Summer 2015

Noah Myers (Edgewood HS) – Summer 2015, 2016

Nicholas Watts (Edgewood HS) – Summer 2015

Claudia Arndt (Edgewood HS) – Summer 2014