

# Brandon J. Sansom

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Civil, Structural, and Environmental Engineering  
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## EDUCATION

- Current** Ph.D candidate (expected Summer 2018), Civil, Structural, and Environmental Engineering, University at Buffalo, The State University of New York (CSEE).  
Advisors: Dr. Joseph Atkinson (CSEE) and Dr. Sean Bennett (Geography)
- 2013** M.S. Biology, University of Oklahoma. Advisor: Dr. Caryn Vaughn
- 2011** B.A. Biology; B.A. Environmental Studies (*cum laude*), Washington and Jefferson College. Advisors: Dr. Jamie March and Dr. Robert East
- 2010** Study Abroad Fall Semester, University of Aberdeen, Scotland, United Kingdom

## PROFESSIONAL EXPERIENCE

- Current** **Adjunct Instructor.** Niagara University. Courses Taught: Environmental Biology (BI 103); Ecology Laboratory (BI 205)
- Current** **Seasonal Field Researcher.** RiverEdge Associates LLC. Massena, NY. Employer: Lee Harper
- 2017** **Adjunct Instructor.** Erie County Community College. Courses Taught: BI 230 Microbiology (Spring 2017 – Fall 2017); BI 231 Microbiology Lab (Spring 2017)
- 2016** **Adjunct Instructor.** Bryant and Stratton College – Online. Course Taught: Ecology
- 2014** **Undergraduate Research Mentor.** National Science Foundation Research Experience for Undergraduates, University at Buffalo, Mentee: Kim Alexander.
- 2011-2013** **Graduate Research Assistant.** University of Oklahoma. Advisor: Dr. Caryn Vaughn.
- 2010** **Teaching Laboratory Assistant.** Washington and Jefferson College, Conservation Biology Laboratory. Supervisor: Dr. Thomas Contreras
- 2009-2011** **Research Intern.** St. Croix Mussel Project. Macalester College. Principle Investigator: Dr. Dan Hornbach
- 2009** **Teaching Laboratory Assistant.** Washington and Jefferson College, Ecology Research Laboratory. Supervisor: Dr. Jamie March
- 2007-2011** **Assistant Field Station Coordinator and Research and Laboratory Technician.** Washington and Jefferson College, Abernathy Field Station. Supervisor: Dr. Jamie March

## PUBLICATIONS

11. **Sansom, B.J.**, Bennett, S.J., Atkinson, J.F. IN PREPARATION. Flow resistance in mussel covered stream beds.
10. **Sansom, B.J.**, Atkinson, J.F., Bennett, S.J. IN PREPARATION. Influence of shell sculpture and morphology on mussel burrowing during base flows in two northeastern streams.

9. **Sansom, B.J.**, Bennett, S.J., Atkinson, J.F., Vaughn, C.C. 2018. Long-term persistence of freshwater mussel communities in labile channels. *Freshwater Biology* DOI 10.1111/fw.b.13175.
8. Tweedy, B.N., **Sansom, B.J.**, Vaughn, C.C. IN REVISION. Mercury contamination across a riverine foodweb. *Ecotoxicology*.
7. **Sansom, B.J.**, Tweedy, B.N., Vaughn, C.C. 2017. Fishes associated with mussel beds in the Kiamichi River, Oklahoma. *Proceedings of the Oklahoma Academy of Sciences* 97: 1-7.
6. **Sansom, B.J.**, Sassoubre, L.M. 2017. Environmental DNA (eDNA) shedding and decay rates to model freshwater mussel eDNA transport in a river. *Environmental Science and Technology* 51: 14244-14253. DOI: 10.1021/acs.est.7b05199.
5. Atkinson, C.L., **Sansom, B.J.**, Vaughn, C.V., Forshay, K.J. 2017. Consumer aggregations drive nutrient dynamics and ecosystem metabolism in nutrient limited systems. *Ecosystems* DOI: 10.1007/s10021-017-0166-4.
4. **Sansom, B.J.**, Atkinson, J.F., Bennett, S.J. 2017. Modulation of near-bed hydrodynamics by freshwater mussels in an experimental channel. *Hydrobiologia* DOI: 10.1007/s10750-017-3172-9.
3. **Sansom, B.J.**, Atkinson, C.L., Vaughn, C.C. 2016. Growth and longevity estimates for mussel populations in three Ouachita Mountain Rivers. *Freshwater Mollusk Biology and Conservation* 19:19-26.
2. Hornbach, D.J., Hove, M.C., Lui, H.T., Schenck, F., Rubin, D., **Sansom, B.J.** 2013. The influence of different sized dams on mussel assemblage and growth. *Hydrobiologia* 724: 279-291.
1. **Sansom, B.J.**, Hornbach, D.J., Hove, M.C., Kilgore, J.S. 2013. Effects of flow restoration on mussel growth in a Wild and Scenic North American River. *Aquatic Biosystems*. doi: 10.1186/2046-9063-9-6.

## PRESENTATIONS AND POSTERS (Presenter in bold)

- Sansom, B.J.**, Bennett, S.J., Atkinson, J.F. 2018. Flow resistance in mussel covered stream beds. American Geophysical Union Fall Meeting. December 10-14, Washington, DC. *Oral Presentation*.
- Sansom, B.J.** 2018. Biophysical interactions of ecosystem engineers: an interdisciplinary approach to inform the management of natural and constructed aquatic ecosystems. Ecological Dissertations in the Aquatic Sciences XIII (Eco-DAS) Symposium. October 15-20, 2018, Honolulu, HI. *Oral Presentation*.
- Sansom, B.J.**, Sassoubre, L.M. 2018. Environmental DNA (eDNA) shedding and decay rates to model downstream transport of mussel eDNA. International Association for Great Lakes Research Annual Conference. June 22, 2018, Toronto, Canada. *Oral Presentation*.
- Sansom, B.J.**, Atkinson, J. F., Bennett, S.J. 2018. Working with nature: the importance of freshwater mussels in local streams. Greater Buffalo Environmental Conference. March 20<sup>th</sup>, 2018, Buffalo, NY. *Poster Presentation*.
- Sansom, B.J.**, Atkinson, J.F., Bennett, S.J. 2017. Modulation of near-bed hydrodynamics by freshwater mussels in an experimental channel. Freshwater Mollusk Conservation Society Biennial Symposium. March 29<sup>th</sup>, 2017, Cleveland, OH. *Oral Presentation*.
- Sansom, B.J.**, Atkinson, J.F., Bennett, S.J. 2016. Turbulence modulation by biological agents: hydrodynamic impacts of freshwater mussels in stream systems. 5<sup>th</sup> International Conference on Natural Channel Systems. September 26-27, 2016. Niagara Falls, Ontario, Canada. *Poster Presentation*.

- Vorenkamp, K.E.**, Sansom, B.J., Atkinson, J.F., Bennett, S.J. 2016. Quantifying the swimming capacity of emerald shiner minnows (*Notropis atherinoides*) from the Upper Niagara River and determining fish passage criteria. Fish Passage 2016: International Conference on River Connectivity. June 20-22, 2016. University of Massachusetts, Amherst, MA. *Oral Presentation*.
- Sansom, B.J.**, Melomo, J.B., Le, D.T., Delavan, S.K., Atkinson, J.F., Bennett, S.J. 2015. Simulating mussel impacts on near-bed hydrodynamics using a computational fluid dynamic model. 2<sup>nd</sup> International Meeting on Biology and Conservation of Freshwater Bivalves. October 4-8, 2015. Buffalo, NY. *Poster Presentation*.
- Melomo, J.B.**, Sansom, B.J., Delavan, S.K., Atkinson, J.F., Bennett, S.J. 2015. Hydrodynamic impacts of freshwater mussels: measurement of turbulence generation in a laboratory flume. 2<sup>nd</sup> International Meeting on Biology and Conservation of Freshwater Bivalves. October 4-8, 2015. Buffalo, NY. *Poster Presentation*.
- Sansom, B.J.**, Atkinson, J.F., Bennett, S.J., Delavan, S.K. 2015. Hydrodynamic impacts of freshwater mussels: measurement of turbulence generation in a laboratory flume. 46<sup>th</sup> Annual Binghamton Geomorphology Symposium: Laboratory Experiments in Geomorphology. September 18-20, 2015. Buffalo, NY. *Poster Presentation*.
- Vorenkamp, K.E.**, Sansom, B.J., Atkinson, J.F., Bennett, S.J. 2015. Swimming capacity of emerald shiner minnows (*Notropis atherinoides*) from the Upper Niagara River. 46<sup>th</sup> Annual Binghamton Geomorphology Symposium: Laboratory Experiments in Geomorphology. September 18-20, 2015. Buffalo, NY. *Poster Presentation*.
- Sansom, B.J.**, Delavan, S.K., Bennett, S.J. 2015. The effects of freshwater mussel (Bivalve: Unionidae) filtering activity on near-bed hydrodynamics. Microscale Ocean Biophysics Meeting. January 2015, Aspen, CO. *Poster Presentation*.
- Alexander, K.**, Sansom B., Delavan, S. 2014. Hydrodynamic effects of invasive mussel (*Dreissena polymorpha* and *Dreissena bugensis*) shells in a laboratory flume. National Science Foundation Ecosystem Restoration through Interdisciplinary Exchange Research Education for Undergraduates Annual Symposium. August 6, 2014, University at Buffalo, Buffalo, NY. Also presented at the NSF REU Symposium in Washington, DC, October 27, 2014.
- Sansom, B.J.**, Delavan, S.K. 2014. The influence of freshwater mussels on near-bed flow conditions. New England Graduate Student Water Symposium. September 13, 2014, Amherst, MA. *Poster Presentation*.
- Sansom, B.J.**, Vaughn, C.C., Engel, M. 2014. Using  $\delta^{15}\text{N}$  to trace bottom-up transfer of mussel derived nutrients. Society for Freshwater Science Annual Meeting, May 19, 2014, Portland, OR. *Oral Presentation*.
- Tweedy, B.N.**, Sansom, B.J., Vaughn, C.C. 2014. Effects of freshwater mussels on mercury contamination of aquatic food webs. Society for Freshwater Science Annual Meeting, May 20, 2014, Portland, OR. *Poster Presentation*.
- Vaughn, C.C.**, Atkinson, C.L., Allen, D.E., Martinez, M.C., Sansom, B.J., Tweedy, B. 2013. Ecosystem services provided by freshwater mussels. American Fisheries Society Annual Meeting. September 8, 2013, Little Rock, AR. *Oral Presentation*.
- Sansom, B.J.**, Vaughn, C.C., Shelton, W., Summers, G. 2013. Do mussel derived nutrients influence fish condition? Society for Freshwater Science Annual Meeting. May 22, 2013, Jacksonville, FL. *Poster Presentation*.
- Sansom, B.J.**, Vaughn, C.C., Shelton, W., Summers, G. 2013. Bottom-up mussel derived nutrient effects on juvenile largemouth bass. Freshwater Mollusk Conservation Society Biennial Meeting. March 11, 2013, Guntersville, AL. *Oral Presentation*.

## CURRENT AND PAST FUNDING

- 2017** National Science Foundation, Division of Earth Sciences, Hydrological Science Program. “Collaborative Research: Near-bed flow, turbulence, and emergent hydrodynamics of biologically-conditioned labile river channels” (2017/03-2010/03) PI: Sean Bennett, co-I: George Constantinescu, Caryn Vaughn, Joseph Atkinson. \$423,823.  
\***B. Sansom** is the named Ph.D. student in this grant and assisted in writing the grant introduction and proposed research, and collected the preliminary data to support the grant hypotheses
- 2016** Mark Diamond Research Foundation, SUNY University at Buffalo. “Anchoring adaptations, entrainment thresholds, and temporal persistence of freshwater mussels in labile channels” (2016/07-2017/09) PI: **Brandon Sansom**. \$2,458.

## HONORS/AWARDS

- 2015** National Defense Science and Engineering Graduate Fellowship Program, Nominee. SUNY University at Buffalo
- 2015** Student Travel Grant, Microscale Ocean Biophysics Meeting
- 2014** Graduate Student Association Travel Grant. University at Buffalo
- 2013** Best Student Poster Presentation. Freshwater Science Annual Meeting. Jacksonville, FL
- 2013** Sooner Heritage Scholarship. University of Oklahoma
- 2013** L.G. Hill Zoology Excellence Travel Fund. University of Oklahoma
- 2013** Department of Biology Graduate Student Travel Grant. University of Oklahoma
- 2013** Robberson Travel Grant. University of Oklahoma
- 2010** National Wrestling Coaches Association Academic All-American
- 2010** Trelka Prize for Original Research in Life Sciences. Washington and Jefferson College
- 2010** Margaret A. Cargill Prize in Environmental Studies. Washington and Jefferson College
- 2010** Donald W. Ebbert Award. Washington and Jefferson College
- 2009-2010** Recipient of Howard Hughes Medical Institute Summer Fellowship
- 2008-2010** Wrestling letter winner. Washington and Jefferson College
- 2008, 2010** Presidential Wrestling Award. Washington and Jefferson College
- 2007-2011** Scholars Award. Washington and Jefferson College

## TRAINING AND SERVICE

- 2016** **Ecosystem Outreach Specialist**, Schmidt Home School Group, Buffalo, New York
- 2015-2016** **Volunteer Wrestling Coach**, Amherst Central High School, Amherst, New York
- 2015** **OHSA 10-Hour General Industry Safety**
- 2014** **Heartsaver First Aid CPR AED**
- 2014** **Coordinator of Environmental Engineering Graduate Student Journal Club**, University at Buffalo
- 2014** **Student Co-Chair**, New England Graduate Student Water Symposium, University of Massachusetts Amherst
- 2014** **United States Army Corp of Engineering “Monitoring Streams for Sediment” Workshop**, Rochester, New York
- 2014** **Streambank Stability Analysis and Modeling Workshop**, Buffalo, New York

- 2014 Bioengineering and Redirective Methods for Stream Stabilization and Restoration Workshop, Buffalo, New York**
- 2012-2013 Biological Association of Graduate Students Undergraduate Representative, Biology Department, University of Oklahoma**
- 2011-2014 Volunteer Wrestling Coach, Norman High School, Norman, Oklahoma**
- 2009 SCUBA Certification, Washington SCUBA Center (PADI certified)**

## **PROFESSIONAL MEMBERSHIPS**

- **Southwestern Association of Naturalists**
- **Society of Freshwater Science (Formerly North American Benthological Society)**
- **Freshwater Mollusk Conservation Society**
- **Trout Unlimited – Iron Furnace Chapter**
- **Phi Sigma – Nu Chapter**