

EMILY R. ARSENAULT

Master's Student · Ecology and Evolutionary Biology · University of Kansas
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EDUCATION:

2017, M.A., Ecology and Evolutionary Biology, University of Kansas, Lawrence, KS
2014, B.A., Biology, Environmental Studies (Double Major), minor in Creative Writing, Colby College, Waterville, ME

RESEARCH INTERESTS:

Aquatic ecology, climate change, food webs, invasive species, macrosystem ecology, stable isotope analysis

AWARDS AND GRANTS:

2014, Distinction in the Environmental Studies Major
2014, Honors in Environmental Studies
2014, Society for Freshwater Science Undergraduate Travel Award (\$600)
2013, Dean of Faculty Student Special Projects Fund Grant (\$500)
2013, David Silverstone Leadership Scholarship (\$5,000)
2012; 2013, Dean's List
2011-2014, NESCAC All-Academic Athlete (Cross Country, Indoor Track, Outdoor Track)
2010-2012, Watershed Fund Scholarship (\$2,500)
2010, UCONN Avery Point Book Award for Excellence in Environmental Science

RESEARCH EXPERIENCE:

2013-2014 – Colby College, Waterville, ME

Senior Honors Thesis, Environmental Studies Program, Dr. F. Russell Cole

- Developed original research questions and methods
- Sampled macroinvertebrates from headwater streams and identified to genus
- Prepared samples for stable isotope analysis
- Sharpened scientific writing and public speaking skills

2013 January – Colby College, Waterville, ME

Field Assistant, Department of Biology, Dr. Judy Stone

- Established and collected information from tropical forest plots
- Learned to identify flora and fauna of the tropical cloud forest ecosystem

2013 – Colby College, Waterville, ME

Research Assistant, Environmental Studies Program, Dr. F. Russell Cole

- Identified aquatic macroinvertebrates independently
- Established a comprehensive reference collection of Belgrade Lakes macroinvertebrates

2012 summer – Colby College, Waterville, ME

Research Assistant, Department of Biology, Dr. Catherine Bevier

- Worked with a team to sample dozens of lakefront sites for water and habitat quality to determine the most effective best management practices for developed lakeshore
- Provided education about aquatic ecology and stewardship to grade-school students in the local community

2010-2011; 2013 summers – The Connecticut Agricultural Experiment Station, New Haven, CT

Research Assistant, Department of Plant Pathology and Ecology, Dr. Sharon Douglas

- Conducted the annual CT nursery screening for *Phytophthora ramorum*
- Expanded on research looking to compare the efficacy of different sanitizers for the management of boxwood blight fungus, a pathogen recently introduced to CT

2009 summer – The Connecticut Agricultural Experiment Station, New Haven, CT

Research Assistant, Department of Plant Pathology and Ecology, Dr. Robert Marra

- Assisted with culturing of *Neonectria ditissima* fungi
- Performed DNA extraction, PCR, and ELISA

TEACHING & OUTREACH:

2015 fall – University of Kansas, Lawrence, KS

Graduate Teaching Assistant, Department of Biology, Dr. Julie Campbell

- Instructed four lab sections of Principles of Biology
- Led demonstrations on proper use of laboratory equipment
- Graded quizzes and exams

2015 fall – University of Kansas, Lawrence, KS

Outreach Volunteer, Dept. of Ecology & Evolutionary Biology Graduate Student Organization

- Assisted with an invasive mosquito lab project for high school biology students
- Organized a classroom activity as part of a girls in STEM event
- Educated Girl Scouts to earn badge awards

2015 January – Colby College, Waterville, ME

Teaching Assistant, Environmental Studies Program, Dr. F. Russell Cole

- Assisted with the 3-week Ecological Field Study in Belize course
- Gathered and ordered equipment, assisted with the arrangement of trip logistics
- Provided guidance for student research presentations

2014 fall – Colby College, Waterville, ME

Lab Instructor, Environmental Studies Program, Dr. F. Russell Cole

- Instructed two lab sections of Introduction to Ecology
- Provided guidance to Environmental Studies seniors enrolled in the capstone course
- Wrote, proctored, and graded lab practical exams
- Assisted with the administrative duties of the department

RELEVANT COURSEWORK:

Undergraduate: Cellular Basis of Life (lab), General Chemistry & Elementary Analysis (lab), Marine Ecosystems & Climate Change, Woody Plants (lab), Latin, Advanced & Applied Ecology (lab), Natural Resource Economics, Statistical Methods in Biology, Evolutionary Analysis (lab), Geology (lab), Microbiology (lab), GIS, Ecological Modeling (lab), Mutualistic Interactions (seminar), Senior Capstone in Environmental Studies (lab)

Graduate: Biometry, Ecology of Rivers and Lakes, Ichthyology, Ecology and Global Change

TECHINICAL SKILLS:

Laboratory: ELISA, DNA extraction, PCR, microscope work, culturing, taxonomic identification of freshwater macroinvertebrates

Fieldwork: trail maintenance, boat operation, trailering, farm work, mist netting, taxonomic identification of New England flora, forest data collection (densiometer, DBH, soil composition, compass, tree core), collection of aquatic macroinvertebrates (Surber sampler, kick net, hand collection), use of dichotomous keys

Computer: Stata, Minitab, ArcGIS, Microsoft Excel

PRESENTATIONS:

Not All Depths Are Created Equal: Deep Water Algae Layers Influence Benthic Invertebrate Distribution in Stratified Lakes, **Emily Arsenault**, Rachel Bowes, Brendan Martin, Frank deNoyelles Jr., and James Thorp, Governor's Conference on the Future of Water in Kansas, November 19, 2015, Manhattan, KS.

An Assessment of Macroinvertebrate Communities Reveals Sensitivity to Road Crossings, **Emily Arsenault**, F. Russell Cole, and Denise Bruesewitz, Joint Aquatic Sciences Meeting, May 18-23, 2014, Portland, OR.

Macroinvertebrate Community Structure and Feeding Dynamics in Headwater Streams of Central Maine, **Emily Arsenault**, Colby Liberal Arts Symposium, May 1, 2014, Colby College, Waterville, ME.

An Assessment of Macroinvertebrate Communities Reveals Sensitivity to Road Crossings, **Emily Arsenault**, F. Russell Cole, and Denise Bruesewitz, Maine Water and Sustainability Conference, April 1, 2014, Augusta, ME.

The Impacts of Three Headwater Streams on Long Pond Water Quality, Colby College Environmental Studies Majors, Senior Capstone Presentation, December 4, 2013, Maine Lakes Resource Center, Belgrade Village, ME.

The Influence of Shoreline Development on the Littoral Zone in the Belgrade Lakes, **Emily Arsenault**, Colin Cummings, Monica Davis, Marianne Ferguson, Drew Meador, Corey Reichler, Cathy Bevier, and F. Russell Cole, Maine Water Conference, March 19, 2013, Augusta, ME.

Influence of Shoreline Development on Riparian Habitats in the Belgrade Lakes, **Emily Arsenault**, Colin Cummings, Monica Davis, Marianne Ferguson, Drew Meador, Corey Reichler, Cathy Bevier, and F. Russell Cole, Maine Water Conference, March 19, 2013, Augusta, ME.

Influence of Shoreline Development on Riparian Habitats in the Belgrade Lakes, **Emily Arsenault** and F. Russell Cole, Colby Undergraduate Research Symposium, Colby

College, May 1, 2013, Waterville, ME.

Influence of Shoreline Development on the Riparian and Littoral Habitat in Great Pond, **Emily Arsenault**, Colin Cummings, Monica Davis, Marianne Ferguson, Drew Meador, Corey Reichler, Cathy Bevier, and F. Russell Cole, Colby Undergraduate Summer Research Retreat, July 26-27, 2012, The Forks, ME.

Buffering Shoreline Development in the Belgrade Lakes Watershed, **Emily Arsenault**, Colin Cummings, Monica Davis, Marianne Ferguson, Drew Meador, Corey Reichler, Cathy Bevier, and F. Russell Cole, Colby Undergraduate Summer Research Retreat, July 26-27, 2012, The Forks, ME.

Impact of Shoreline Development in the Belgrade Lakes, **Emily Arsenault**, Colin Cummings, Monica Davis, Marianne Ferguson, Drew Meador, Corey Reichler, Cathy Bevier, and F. Russell Cole, Maine Congress of Lakes Association Conference, June 23, 2012, Waterville, ME.

REPORTS:

The Importance of Headwater Streams in Preserving Water Quality: A Case Study of the Kennebec Highlands and Long Pond, Colby College Environmental Studies Majors, Senior Capstone Report, Fall 2013

Macroinvertebrate Community Structure and Feeding Dynamics in Headwater Streams of Central Maine, **Emily Arsenault**, Environmental Studies Program, Colby College, 2014

AFFILIATIONS:

Society for Freshwater Science (SFS; formerly NABS), since 2013

Association for the Sciences of Limnology and Oceanography (ASLO), since 2015