

Andrew Borchert

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EDUCATION

University of Georgia, Athens
Department of Microbiology

Doctor of Philosophy, Incoming Class of 2013
Current GPA: 3.92

University of Minnesota, Twin Cities
Majors: Microbiology and Biochemistry
Minor: Philosophy

Bachelor of Science, May 2013
GPA: 3.39

RESEARCH EXPERIENCE

Using *RidA* to gain insights into metabolic divergence of *S. enterica* and *E. coli*,

Advisor: Diana Downs

University of Georgia-Athens

Graduate Assistant, PhD program, August 2013-Present

ridA mutants in *S. enterica* accumulate the toxic intermediate 2-aminoacrylate (2AA), which in turn damages pyridoxyl-5'-phosphate (PLP)-dependent enzymes, perturbing the metabolic network. Despite genetic data indicating that *S. enterica* and *E. coli* share all relevant metabolic constituents, preliminary work shows that the growth phenotypes of *ridA* mutants differed between these two organisms. My work seeks to provide insights into the mechanisms responsible for the divergence of phenotypes for *ridA* mutants in *E. coli* and *S. enterica*. In so doing, I hope to use the *RidA* system of endogenous stress to gain insight into the metabolic divergence of *S. enterica* and *E. coli*.

Sporicidal Treatment of *C. Botulinum*, Advisor: Michael Sadowsky

University of Minnesota-Twin Cities

Undergraduate Research Assistant, October 2012 – August 2013

Worked alongside Dr. Chun in the Sadowsky lab to develop various environmentally friendly sporicidal techniques to limit proliferation of *Clostridium botulinum* in *Cladophora* on Great Lakes beaches and waterways. Involved anaerobic culture preparation, gDNA extraction and processing, and analyzing results using most probable number (MPN)-PCR.

Fecal Indicators and Source Tracking, Advisor: Michael Sadowsky

University of Minnesota-Twin Cities

Undergraduate Research Assistant, May 2012 - August 2012

Worked with Dr. Eichmiller in the Sadowsky lab to examine relative decay rates in freshwater sand microcosms inoculated with sewage and pure cultures of bacterial fecal pathogens. Involved, basic genetic techniques (PCR, plasmid preps, transformations, etc.) gDNA extraction and processing, qPCR analysis, and *E. coli* and *Enterococcus* filtering and culturing techniques.

WOC Nursing Outcomes in Home Health Care, Principle Investigator: Bonnie Westra

Nursing Dept. University of Minnesota-Twin Cities

Undergraduate Research Assistant, January 2011 - August 2011

Study of the prevalence, incidence, and effectiveness of home health care agencies' services with and without a Wound, Ostomy, and Continence nurse related to wounds, incontinence, and urinary tract infection patient outcomes. Helped in agency recruitment and data collection as well as performing literature reviews to aid in both the statistical analysis as well as the writing of the article.

PUBLICATIONS

- Chun CL, Khan CI, **Borchert AJ**, Byappanahalli MN, Whitman RL, Peller J, Pier C, Lin G, Johnson EA, Sadowsky MJ. **2014**. Prevalence of toxin-producing *Clostridium botulinum* associated with the Macroalga *Cladophora* in three Great Lakes: Growth and Management. *Sci Total Environ*. In Press.
- Eichmiller JJ, **Borchert AJ**, Sadowsky MJ, Hicks R. **2014**. Decay of genetic markers for fecal bacterial indicators and pathogens in sand from Lake Superior. *Water Research*. 59: 99-111
- Westra BL, Bliss DZ, Savik K, Hou Y, **Borchert A**. **2013**. Effectiveness of wound, ostomy, and continence nurses on agency-level wound and incontinence outcomes in home care. *J Wound Ostomy Continence Nurs*. 40(1):25-53.
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HONORS and AWARDS

- University of Georgia PhD Scholars of Excellence Award 2013-2014
 - University of Minnesota U Promise Scholarship 2012-2013
 - University of Minnesota Dave Larson Scholarship 2009-2013
 - University of Minnesota Maroon and Gold Scholarship 2010
 - HealthEast Hospitals Scholarship 2009
 - Boy Scouts of America: Eagle Scout 2009
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COMMUNITY OUTREACH

- Science Fair Mentor for local 6th grader on Science Fair Project; September-December, 201
 - Poster Judge-Georgia Science and Engineering Fair competition; March 28, 2014
 - Reader and Poster Judge-Georgia Junior Science and Humanities Symposium; January-February, 2014
 - Poster Judge-Clarke County School District Science and Engineering Fair; January 11, 2014
 - Science Fair Mentor Colham Ferry Elementary School-Athens GA; December 16, 2013
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PROFESSIONAL DEVELOPMENT

- UGA Office of Institutional Diversity: Diversity and Inclusion Certificate Spring 2014-Present
Completed two 3-hour courses in five course program
- GRSC 7770- Graduate Seminar in University Teaching Fall 2013
- Researcher Orientation and Ongoing Training Series: Fall 2013
Researcher Orientation and Grant Writing Workshop
- Graduate School Professional Development Workshop: Fall 2013
Positive Publishing: managing authorship issues and handling rejection
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PROFESSIONAL MEMBERSHIPS

- American Society for Microbiology
American Association for the Advancement of Science
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REFERENCES

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