

Andrew John Borchert

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EDUCATION

University of Georgia, Athens
Department of Microbiology
PhD Candidate

Doctor of Philosophy, Incoming Class of 2013

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

Bachelor of Science, May 2013

RESEARCH EXPERIENCE

Using RidA to Gain Insights into Metabolic Network Configuration

Advisor: Diana Downs
University of Georgia-Athens
PhD Candidate, PhD program, August 2013-Present

Sporicidal Treatment of *C. Botulinum*

Advisor: Michael Sadowsky
University of Minnesota-Twin Cities
Undergraduate Research Assistant, October 2012 – August 2013

Fecal Indicators and Source Tracking

Advisor: Michael Sadowsky
University of Minnesota-Twin Cities
Undergraduate Research Assistant, May 2012 - August 2012

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

PUBLICATIONS

Borchert AJ, Downs DM. **2018**. Analyses of variants of the Ser/Thr dehydratase, IlvA, provide insight into 2-aminoacrylate metabolism in *Salmonella enterica*. J. Biol. Chem In Press: jbc.RA118.005626. doi: 10.1074/jbc.RA118.005626

Ernst DC, **Borchert AJ**, Downs DM. **2018**. Perturbation of the metabolic network in *Salmonella enterica* reveals cross-talk between Coenzyme A and thiamine pathways. PLoS ONE. 13(5): e0197703. doi: 10.1371/journal.pone.0197703.

Borchert AJ, Downs DM. **2017**. Endogenously generated 2-aminoacrylate inhibits motility in *Salmonella enterica*. Sci. Rep. 7(1): 12971. doi: 10.1038/s41598-017-13030-x.

Borchert AJ, Downs DM. **2017**. The response to 2-aminoacrylate differs in *Escherichia coli* and *Salmonella enterica*, despite shared metabolic components. J Bacteriol. 199(14): e00140-17. doi: 10.1128/JB.00140-17.

Chun CL, Khan CI, **Borchert AJ**, Byappanahalli MN, Whitman RL, Peller J, Pier C, Lin G, Johnson EA, Sadowsky MJ. **2015**. Prevalence of toxin-producing *Clostridium botulinum* associated with the Macroalga *Cladophora* in three Great Lakes: Growth and Management. Sci Total Environ. 511: 523-529. doi: 10.1016/j.scitotenv.2014.12.080.

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 Res.* 59: 99-111. doi: 10.1016/j.watres.2014.04.005.

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. doi: 10.1097/WON.0b013e31827bcc4f. Reprinted in *Home Healthc Nurse*.

CONFERENCE PRESENTATIONS

Borchert, AJ and Downs, DM. 2-aminoacrylate stress reveals divergence of *Salmonella enterica* and *Escherichia coli* metabolic networks. **Poster.** FEMS Microbiology Congress, Valencia, Spain. July, **2017**

Borchert, AJ and Downs, DM. The RidA stress system uncovers metabolic divergence of *Salmonella enterica* and *Escherichia coli*. **Oral Presentation.** Wind River Conference on Prokaryotic Biology, Estes Park, CO. June, **2016**

RELATED SKILLS

Laboratory

Comprehensive knowledge of common genetic and molecular biology techniques (transformations, transductions, PCR, cloning, site-directed mutagenesis, etc.), FPLC and protein purification, enzyme kinetics, RNA sample preparation, real-time qRT-PCR, working knowledge RNAseq and NMR-based metabolomics

Computer

MS Office, Adobe Illustrator, Prism 7, DNASTar Lasergene, Pymol, working knowledge of MATLAB

TEACHING AND MENTORING EXPERIENCE

Tanner Stumpe, Undergraduate, University of Georgia	Spring 2018
Allison Andrews, Undergraduate, University of Georgia	Spring 2017
Amal Bhatnagar, High School, Young Dawgs Program, University of Georgia	Summer 2016
Teaching Assistant, General Microbiology Lecture, University of Georgia	Spring 2016
Teaching Assistant, General Microbiology Laboratory, University of Georgia	Fall 2015
Kenton Hipsher, NSF research experience for undergraduates, University of Georgia	Summer 2015
Tykerius Monford, Middle School, GA Science and Engineering Fair, award winner	2014, 2015

HONORS AND AWARDS

UGA Microbiology Department Dr. Juergen Wiegel Award in Microbiology	2017
Wind River Conference Student Travel Grant Recipient	2016
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

COMMUNITY OUTREACH

Poster Judge-Georgia Science and Engineering Fair competition;	2014; 2015
Reader and Poster Judge-Georgia Junior Science and Humanities Symposium;	2014; 2015
Poster Judge-Clarke County School District Science and Engineering Fair;	2014; 2015
Science Fair Mentor Colham Ferry Elementary School-Athens GA;	2013

PROFESSIONAL DEVELOPMENT

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	

PROFESSIONAL MEMBERSHIPS

American Society for Microbiology
American Association for the Advancement of Science