BRYANT ALLSON CHAMBERS, PH.D.

CURRICULUM VITAE

Department of Civil, and Environmental Engineering
The University of Texas at Austin
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U.S. Citizen

EDUCATION

THE UNIVERSITY OF TEXAS AT AUSTIN
Ph.D. in Civil Engineering — Spring 2018
M.S. in Environmental Engineering — Fall 2013
Advisor: Mary Jo Kirisits

Areas of focus:
Microbiology
Systems biology
Bioinformatics
Statistical modeling
Nanoparticle fate and toxicology

THE UNIVERSITY OF TEXAS AT AUSTIN
B.S. in Biochemistry — Spring 2007

PUBLICATIONS

*denotes undergraduate mentee

PREPARATION

Chambers, B. A., Hofmann, H., Kirisits, M. J., Silver and silver nanoparticles cause and select for antibiotic resistance in *Pseudomonas aeruginosa. Manuscript in preparation for Proceedings of the National Academy of Science*

Chambers, B. A., D'Alton, S., *Smith, S. K., Kirisits, M. J., A molecular biological model for the surface attachment action of silver nanoparticles. *Manuscript in preparation for American Chemical Society Nano*

Chambers, B. A., Sabaraya, I. V., Saleh, N.B., Kirisits, M. J. Cohort adoption: The effect of a four-year pre-college STEM outreach program. *Manuscript in preparation for the Journal of Science Education and Technology*

CIRCULATION

Chambers, B. A. A molecular biological model describing silver nanoparticle mechanisms of toxicity and associated antibiotic resistance. *Dissertation Published by The University of Texas at Austin*. **2018**

Saleh, N. B., **Chambers, B. A.,** Aich N. Kirisits, M. J. Mechanistic lessons learned from studies of planktonic bacteria with metallic nanomaterials: implications for interactions between nanomaterials and biofilm bacteria, *Frontiers in Microbiology*. **2015**

Chambers, B. A., Afrooz A. R. M. N., Bae S., Aich N., Katz, L. E., Saleh N. B., Kirisits, M. J. Effects of Chloride and Ionic Strength on Physical Morphology, Dissolution, and Bacterial Toxicity of Silver Nanoparticles. *Environmental Science and Technology*. **2014** *48 (1)* 761-769. DOI: 10.1021/es403969x.

Saleh, N. B., Aich, N., **Chambers, B. A.**, Afrooz, A. R. M., Kirisits, M. J. Influence of tin doping on environmental interactions of nano indium oxides in aqueous systems. *Abstracts of Papers of the American Chemical Society*. **2014**

C.B. Mendez, S. Bae, **B. A. Chambers**, S. Fakhreddine, T. Gloyna, S. Keithley, L. Untung, M.E. Barrett, K. Kinney, and M. J. Kirisits, Effect of Roof Material on Water Quality for Rainwater Harvesting Systems Additional Physical, Chemical, and Microbiological Data. *Texas Water Development Board* **2010**

PRESENTATIONS

Landsman M. R**., Chambers B.A**., Kirisits M. J., Contaminant transport in an Austin Urban Watershed: approaches to isolate human influence. Waller Creek Consortium. Austin Texas, May 2019

Chambers B. A., Smith, S. K., Kirisits M. J., Silver nanoparticles induce antibiotic resistance in *Pseudomonas aeruginosa.* American Chemical Society National Meeting, New Orleans March 18-22, 2018

Chambers B. A., Smith S. K., Kirisits M. J., Resistance is not futile: Metals generate antibiotic resistance in engineered systems. Sustainability Conference. University of Texas, November 8-11, 2016

Chambers B. A., Kirisits M. J., Antibiotic resistance consequences of silver nanoparticle use. Gordon Microbial Stress Response. Mount Holyoke, July 17 -26, 2016

Chambers B. A., Kirisits, M, Chloride drive low fractal dimension silver nanoparticle formation, controlling toxicity and stress response. University of Texas, March 20, 2014

Chambers B. A., Katz L. E., Kirisits M. J., Chloride concentrations and ionic strength impact the toxicity and stability of silver nanoparticles in bacterial exposure media. 87th American Chemical Society Colloid and Surface Science Symposium. University of California Riverside, June 23-June 26, 2013

Chambers B., Nguyen H. Kirisits, M.J. Microarray Analysis of Nanosilver Tolerance Strategies in *Pseudomonas aeruginosa* and *Escherichia coli.* Environmental Nanotechnology Gordon Conference, 2011, Waterville Valley, NH. Poster Presentation.

PROFESSIONAL EXPERIENCE

POSTDOCTORAL RESEARCH FELLOW, AUSTIN TEXAS 2019-2018
- bioinformatics and modeling training program a
- modeled urban watershed contaminant flux
- characterized long-term evolution to metal stress

PHARMAFORM L.L.C., AUSTIN TEXAS 2009-2008
Research and Development Scientist II 2007
- designed new drug formulations
- modeled chemical interaction during processing

Analytical Chemist II
- created methods to analyze new drug products

2006-2004

HUNG-WEN (BEN) LIU ANTIBIOTIC RESEARCH LAB, AUSTIN TEXAS
- characterized novel antibiotic biosynthesis
- protein isolation
- clonal engineering

PROFESSIONAL SKILLS

Lab: bioinformatics, transcriptomics, metagenomics, proteomics, RNA and DNA, mutational analysis, microbiology, network analysis, nanosynthesis, biofilm formation, various microscopy including phase contrast and SEM, various analytical chemistry techniques including HPLC, GC, NFIR Spectroscopy, AA-ICP Spectroscopy

Various informatics tools including: InParanoid, BioConductor, BowTie, Qiime and Qiime2, DESeq2

Programing: R, Matlab, Fortran, some Python, MinTeq/MinEQ

Languages: English – native, Spanish – conversational, Danish – intermediate

OUTREACH LEADERSHIP ROLES

ENGINEERS WITHOUT BORDERS, UNIVERSITY OF TEXAS CHAPTER
Professional mentor 2015-2014
Filter design team leader 2014-2011

ENVIRONMENTAL ENGINEERING OUTREACH PROGRAM AT SAN JUAN DIEGO HIGH SCHOOL
Program coordinator 2014-2011

OFF ROAD SCIENCE WITH THE ENVIRONMENTAL SCIENCE INSTITUTE
Hot Science Cool Talks pre-lecture demo coordinator 2014-2011

INTRODUCE A GIRL TO ENGINEERING DAY

Exhibit operator 2017, 2016

TEACHING EXPERIENCE

CLUBES DE CIENCIAS, UNIVERSITY OF GUANAJUATO, MEXICO
From trash to treasure: Using bacteria to power the future — January 2015
Self-written course

THE UNIVERSITY OF TEXAS AT AUSTIN

Scientific Inquiry Across the Disciplines — 2016, 2017
Stuart Reichler and Self-written
Cell Biology
Arturo De Lozanne and Self-written — 2017
Introduction to Environmental Engineering
Mary Jo Kirisits — 2016
Hydraulic Engineering
John Burgin — 2015
Microbiology
Pratibha Saxena — 2015
Marvin Whiteley — 2014
Mary Jo Kirisits — 2011, 2013
Molecular Biology
Scott Stevens — 2015
Ellen Gottlieb — 2014
Mary Jo Kirisits — 2011
General Engineering Chemistry — 2010
Self-written course

Organic Chemistry and Biochemistry for Nursing Students — 2006
Fatima Fahkreddine
General Chemistry — 2005
Sarah Sutcliffe

Average rating: 4.57 out of 5

WORKSHOPS AND CERTIFICATES

TRANSLATING GRADUATE NANO-EXPERIENCE TO AN ACADEMIC CAREER: INTEGRATING SOCIAL ASPECTS IN ENGINEERING EDUCATION THROUGH ACTIVE LEARNING — October 2016
Active learning certification program

INTERDISCIPLINARY EDUCATION CERTIFICATE Fall 2016
School of Undergraduate Education, University of Texas at Austin

AWARDS

Ben D. Geeslin Endowed Presidential Scholarship	2017-2015, 2013
Kolodzey Travel Grant	2017, 2016
American Water Works Association Scholarship	2016
University of Texas at Austin Legacy Fellowship	2015
Earnest Gloyna Presidential Scholarship	2015-2014
Texas American Water Works Association Fellowship	2014
Gus Fruh Memorial Fellowship	2012-2011

GRADUATE MENTEES

Sierra Jensen	M.S. Environmental Engineering Expected 2019

UNDERGRADUATE MENTEES

Eddalee Hochwalt Naumann	B.S. Chemical Engineering Expected 2020
Alison Zamsky	B.S. Environmental Engineering Expected 2020
Savanna K. Smith	B.S. Civil Engineering Expected 2019
Able Ingle	B.S. Civil Engineering 2017
Anvita Jain	B.S. Civil Engineering 2015
Kathleen L. Speights	B.S. Chemical Engineering 2014

PROFESSIONAL AFFILIATIONS

American Water Works Association
American Chemical Society

PERSONAL

Bicycle touring, hiking/camping, Language and history enthusiast, swing dancing