

Ann E. Sizemore

ann.e.sizemore@gmail.com

Education

University of Pennsylvania, School of Engineering and Applied Science Philadelphia, PA
Ph.D, Bioengineering Anticipated 2020

University of Pennsylvania, School of Engineering and Applied Science Philadelphia, PA
Masters of Science in Engineering, Bioengineering December 2015
Cumulative GPA: 3.84/4.00
Relevant Courses: Modeling Biological Systems, Algebraic Topology I, Network Fundamentals,
Nanoscale Systems Engineering, Finite Element Analysis

Boston College, College of Arts and Sciences Chestnut Hill, MA
Bachelor of Science in Biology (Honors), Bachelor of Arts in Mathematics May 2014
Cumulative GPA: 3.84/4.00, *magna cum laude*
Relevant Courses: Microbial Genetics, Biochemistry I and II, Recombinant DNA Technologies, Chemical
Biology: Structure and Function, Differential Equations, Complex Variables

Research Experience

Broad Institute, Functional Cancer Genomics Cambridge, MA
Associate Computational Biologist January 2016-January 2017

- Contributed to design and upkeep of data processing for a large scale genetic knock-down screen of cancer cell lines (Project Achilles).
- Assisted in analysis of cross-platform cancer cell line functional and perturbation data with the Cancer Target Discovery and Development program.

University of Pennsylvania, Complex Systems Group Philadelphia, PA
Graduate Researcher January 2015-December 2015

- Developing novel mathematical tools for understanding the functional brain network under the supervision of Dr. Danielle Bassett and Dr. Chad Giusti.
- Constructing and characterizing network models using MATLAB.
- Thesis submitted December, 2015, "Cliques and Cycles: A Complementary Pair of Homological Features Detects Structure in Weighted Networks".

Stowers Institute for Medical Research Kansas City, MO
Summer Scholar Research Intern June 2014-August 2014

- Surveyed secretory protein complexes in *Saccharomyces cerevisiae* under Dr. Sue Jaspersen.
- Presented findings in the Summer Scholars poster session August 2014.

Boston College Chemistry Department Chestnut Hill, MA
Undergraduate Research Assistant February 2012-May 2014

- Analyzed the effect of π - π stacking interactions in aspartate transcarbamoylase using kinetic and structural experiments under Dr. Evan Kantrowitz.
- Presented results in three Undergraduate Research Poster Sessions.
- Compiled findings in the form of an Honors Thesis.

Leadership Experience

University of Pennsylvania, Bioengineering Department Philadelphia, PA
Teaching Assistant August 2015-Present

- Advised students in the Biostatistics course for undergraduates.
- Created and evaluated homework sets and term projects.

Boston College Office of Residential Life Chestnut Hill, MA
Resident Assistant August 2011-May 2014

- Collaborated with Resident Assistant team to ensure resident safety.
- Devised and advertised creative bimonthly programs and events.

Let's Get Ready

Brighton, MA

Volunteer Teacher/College Choice Head Coach

Fall 2011

- Instructed underprivileged high school seniors in mathematics to prepare for the SAT test.

Publications

- Ann E. Sizemore, Chad Giusti, Danielle S. Bassett, "Classification of weighted networks through mesoscale topological features." *Journal of Complex Networks* (2016).
- Ann E. Sizemore, Chad Giusti, Richard F. Betzel, Danielle S. Bassett, "Closures and cavities in the human connectome." submitted.

Skills and Techniques

- Topological Data Analysis
- Programming Languages: MATLAB, R
- Support Vector Machine Learning
- Data Analysis Programs: Image J, Excel
- Crystallography programs: Coot, Phenix
- Protein Purification techniques including HPLC and sonication
- Confocal microscopy
- Basic knowledge of Italian and Spanish languages

Awards and Recognitions

- Keynote speaker at the 2015 Philadelphia area AAUW awards ceremony for 7th grade girls in
- Phi Beta Kappa Honors Society
- Pi Mu Epsilon Mathematics Honors Society
- Balkema Honors Thesis Award for the top Biology Department Thesis at Boston College
- Chosen to present Honors Thesis to Biology Department faculty and general public April 2014