

Education

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|---|---|----------------------------|
| 2011 – 2018
Ph.D. in Mathematics
Thesis: <i>The Generalized External Order, and Applications to Zonotopal Algebra</i>
Advisor: Olga Holtz | University of California, Berkeley | Berkeley, CA |
| 2006 – 2010
B.S. in Mathematics
B.S. in Computer Science
Graduated with Honors and Highest Distinction
GPA 3.98 / 4.00 | The Pennsylvania State University | University Park, PA |

Employment

- Graduate Student Instructor, University of California Berkeley, 2011 – 2018
- jStart Software Development Intern, IBM, Spring 2011

Papers and Presentations

- G. Averkov, A. Chavez, J. De Loera, B. Gillespie. Bases for the Lattice of Cycles of a Graph. In preparation.
- B. Gillespie. Matroids, Antimatroids, and the Generalized external order. Accepted with revisions to *Electronic Journal of Combinatorics*.
- B. Gillespie. “Discrete Convexity and the Active Matroid Orders.” Algebra and Algebraic Geometry, I, 2020 Joint Mathematics Meetings. Denver, Co. 17 Jan. 2020.
- B. Gillespie. “Convexity in Ordered Matroids and the Generalized External Order.” Topology Seminar, Colorado State University. Fort Collins, CO. 10 Dec. 2019.
- B. Gillespie. “Circuit Lattices of Graphs and Matroids.” CACAO Seminar, University of California, Davis. Davis, CA. 5 Mar. 2019.
- B. Gillespie. The Generalized External Order, and Applications to Zonotopal Algebra. PhD Thesis, UC Berkeley. 2018.
- B. Gillespie. “Matroids, Antimatroids, and the External Order.” Algebra and Discrete Mathematics Seminar, University of California, Davis. Davis, CA. 20 Nov. 2017.
- B. Gillespie. “Combinatorics of Forward Exchange Matroids.” Combinatorics Seminar, University of California, Berkeley. Berkeley, CA. 17 April 2017.
- B. Gillespie. “Zonotopal Algebra.” Graduate Student Combinatorics Conference, University of Kentucky. Lexington, KY. 29 Mar. 2015.
- B. Gillespie. “Planar Bond Percolation: An Example of a Nontrivial Phase Transition.” Many Cheerful Facts, University of California, Berkeley. Berkeley, CA. 11 April 2012.
- B. Gillespie. Extending Redheffer’s Matrix to Arbitrary Arithmetic Functions. <http://www.bgillespie.com/papers.php>. 2011.
- B. Gillespie. On Randomness of Subsets of Z_N , as Described by Uniformity of Fourier Coefficients. <http://www.bgillespie.com/papers.php>. 2010.
- B. Gillespie and T. London. “Semi-dispersing Billiards and Infinite Topological Entropy.” Young Mathematicians Conference, Ohio State University. Columbus, OH. 17 Aug. 2007.

Teaching

Graduate Student Instructor, University of California, Berkeley

- Complex Analysis (Math 185), Spring 2018
- Linear Algebra (Math 110), Fall 2017
- Multivariable Calculus (Math 53), Spring 2017
- Discrete Mathematics (Math 55), Fall 2016
- Graduate Introduction to Topology and Analysis (Math 202A), Fall 2015
- Linear Algebra and Differential Equations (Math 54), Spring 2014
- Calculus 1 (Math 1A), Fall 2013
- Honors Multivariable Calculus (Math H53), Spring 2013
- Multivariable Calculus (Math 53), Fall 2012
- Calculus 2 (Math 1B), Spring 2012
- Calculus 1 (Math 1A), Fall 2011

Co-director and Instructor, Prove it! Math Academy

- Surreal Numbers, 2015 – 2018
- Mathematical Writing Style, 2016 – 2018

Private Tutor, 2008 and 2013

Honors

- Recipient, UC Berkeley Outstanding Graduate Student Instructor Award, 2014
- Student Marshal, Pennsylvania State University Computer Science, Spring 2011
- Recipient, Evan Pugh Scholar Award, Spring 2011
- Participant, University of Georgia Mathematics REU, Summer 2010
- Recipient, Leonhard Euler Memorial Scholarship, Spring 2010
- Participant, Budapest Semesters in Mathematics, Spring 2009
- Participant, Pennsylvania State University MASS Program, Fall 2007
- Recipient, Mathematics Advanced Study Semesters Excellence Award, 2007
- Participant, Pennsylvania State University Mathematics REU, Summers 2007 – 2008

Professional Activities

- Journal Referee, *Discrete Mathematics*
- *Mathematics Graduate Student Association*, University of California, Berkeley
Officer, 2013 – 2016
Treasurer, 2014 – 2015
Chair, 2016
- Open Source Software Development, *Sagemath Project*, 2015 and 2018 – 2019
- Volunteer, Colorado State University Math Day, 2019
- Volunteer, Julia Robinson Math Festival, 2013
- Speaker, Stanford Math Circle, 2015 – 2017