Bryan R. Gillespie
Curriculum Vitae

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Education

2011 – 2018 **University of California, Berkeley** **Berkeley, CA**
Ph.D. in Mathematics
Thesis: *The Generalized External Order, and Applications to Zonotopal Algebra*
Advisor: Olga Holtz

2006 – 2010 **The Pennsylvania State University** **University Park, PA**
B.S. in Mathematics
B.S. in Computer Science
Graduated with Honors and Highest Distinction
GPA 3.98 / 4.00

Employment

- Instructor, Colorado State University, Fall 2022
- Graduate Student Instructor, University of California Berkeley, 2011 – 2018
- jStart Software Development Intern, IBM, Spring 2011

Papers

- B. Gillespie, S. Ireland, C. Peterson. Enumeration of strongly stable monomial ideals. In preparation.
- M. DiPasquale, B. Gillespie, C. Peterson. Quasi-polynomial growth of numerical and affine semigroups with constrained gaps. Submitted to *Semigroup Forum*.
- G. Averkov, A. Chavez, J. De Loera, B. Gillespie. The Lattice of Cycles of an Undirected Graph. *Linear Algebra and its Applications*, 611(3), 2020.
- B. Gillespie. Convexity in Ordered Matroids and the Generalized External Order. *The Electronic Journal of Combinatorics*, 27(3):P3.41, 2020.
- B. Gillespie. The Generalized External Order, and Applications to Zonotopal Algebra. PhD Thesis, UC Berkeley. 2018.

Presentations

- B. Gillespie. "Convexity in Ordered Matroids and the Generalized External Order." KU Combinatorics Seminar, The University of Kansas. Lawrence, KS. 16 Apr. 2021.
- 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. "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 Apr. 2017.
- B. Gillespie. "Zonotopal Algebra." Graduate Student Combinatorics Conference, University of Kentucky. Lexington, KY. 29 Mar. 2015.

Teaching

Instructor, Colorado State University
- Mathematics of Blockchain Protocols (Math 480A2), Fall 2022

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
- Research Mentor, 2020
- Surreal Numbers, 2015 – 2018
- Mathematical Writing Style, 2016 – 2018

Private Tutor, 2008 and 2013

Professional Activities

- Coordinator, Colorado State University Crypto Reading Group, 2021 – 2022
- Open Source Software Development, *SageMath Project*, 2015 and 2018 – 2020
- Journal Referee, *Discrete Mathematics*
- Speaker, Stanford Math Circle, 2015 – 2017
- *Mathematics Graduate Student Association*, University of California, Berkeley
  Officer, 2013 – 2016
  Treasurer, 2014 – 2015
  Chair, 2016
- Volunteer, Colorado State University Little Shop of Physics, 2020
- Volunteer, Colorado State University Math Day, 2019
- Volunteer, Julia Robinson Math Festival, 2013

Honors and Awards

- 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
- Participant, Pennsylvania State University Mathematics REU, Summers 2007 – 2008

Grants

- NSF/XSEDE Startup Allocation Grant, "Combinatorial Classification of Vietoris-Rips Complexes on the Circle", $415. Dec. 2020 – Nov. 2021