

David Burstein

Department of Mathematics and Statistics
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Education

August 2016 Ph.D in Mathematics, **University of Pittsburgh**
Advisor: Jonathan Rubin

May 2011 B.S. in Mathematics, **University of Maryland**
Summa Cum Laude, University Medal Finalist

Professional Appointments

2016-present Visiting Assistant Professor, **Swarthmore College**
Department of Mathematics and Statistics

2015-2016 Intern Researcher, **Carnegie Mellon University**
Software Engineering Institute

Research Interests

Network Science, Data Science

Graph Theory, Stochastic Processes, Dynamical Systems

Applications to Epidemiology, Internet Routing and Neuroscience.

Selected Honors and Awards

2017 CanaDAM Postdoctoral Travel Grant

2017 SIAM Early Career Travel Award Recipient

2016 Swarthmore Faculty Research Grant

2015 SIAM Student Travel Award Recipient

2014 Selected for the AMS Mathematical Research Community in Network Science

2013 National Science Foundation GRFP Honorable Mention

2011 Inducted into Phi Beta Kappa

2010 Strauss Teaching Assistantship for Excellent Teaching Ability

Publications

Sufficient conditions for graphicality of bidegree sequences with J. Rubin.
SIAM Journal on Discrete Mathematics. January 2017. arXiv:1511.02411

Interception in distance-vector routing networks with F. Kenter, J. Kun and F. Shi.
Journal of Complex Networks. June 2016. arXiv:1507.05206

Preprints

Asymptotics for the spectral radius for random directed graphs with community structure. Submitted. arXiv: 1705.10893

Degree switching and partitioning for enumerating graphs to arbitrary orders of accuracy with Jonathan Rubin. Submitted. arXiv:1511.03738

The k shortest paths problem with application to routing with L. Metcalf. Submitted. arXiv: 1610.06934

Talks

January 2018 Joint Mathematics Meetings. AMS Special Session on Network Science.
San Diego, California: USA.

June 2017 Canadian Discrete and Algorithmic Mathematics Conference.
Toronto, Ontario: Canada.

May 2017 SIAM Conference on Applications of Dynamical Systems.
Snowbird, Utah: USA.

February 2017 Bryn Mawr and Haverford Bi-College Math Colloquium.
Bryn Mawr, Pennsylvania: USA .

January 2017 NetSci-X.
Tel Aviv: Israel.

May 2015 SIAM Workshop on Network Science.
Snowbird, Utah: USA.

June 2014 AMS Mathematical Research Community in Network Science.
Snowbird, Utah: USA.

Symposia Organized

January 2018 Joint Mathematics Meetings. AMS Special Session on Network Science.
with Franklin Kenter and Feng Shi.

Teaching Experience

2016-Present: **Swarthmore College**
Probability (proof based), Instructor.
Introduction to Statistical Methods with R, Instructor.
Calculus 2, Instructor.

2011-2016: **University of Pittsburgh**
Calculus 3, Instructor.
Calculus 1, Recitation Leader.
Actuarial Mathematics, Grader.
Mathematical Biology, Grader.
Complex Analysis, Grader.

Center for the Integration of Research, Teaching and Learning
Certification in STEM Teaching.

Service

Departmental representative for Sigma-Xi, Swarthmore

Faculty participant for graduate school panel, Swarthmore College

Computer Skills

Computer Programing: Knowledgeable in Python, R and Matlab

Webdesign: Knowledgeable in Javascript, HTML and CSS

Professional Affiliations

American Mathematical Society

Society for Industrial and Applied Mathematics