

Christopher E. Miles

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EDUCATION **University of Utah**, Salt Lake City, UT
Doctor of Philosophy (Ph.D.) in Mathematics *expected 2018*
Focus: mathematical biology
Advisor: James P. Keener

Lafayette College, Easton, PA
Bachelor of Science (B.S.) in Electrical & Computer Engineering *May 2013*
Bachelor of Science (B.S.) in Mathematics
Thesis: "Network coding theory & matroid representability"
summa cum laude

PUBLICATIONS IN PROGRESS

1. O. Osunbayo, **C.E. Miles**, B.J. Reddy, J.P. Keener, M.D. Vershinin, "Complex nearly immotile behavior of microtubule-associated cargos," *submitted*.
2. **C.E. Miles**, S.D. Lawley, J.P. Keener, "Analysis of non-processive molecular motor transport using renewal reward theory," *submitted*, arXiv:1711.04852.

COMPLETED

1. **C.E. Miles**, J.P. Keener, "Jump locations of jump-diffusion processes with state dependent rates," *Journal of Physics A: Mathematical & Theoretical*, **50**, 2017.
2. **C.E. Miles**, J.P. Keener, "Bidirectionality from cargo thermal fluctuations in motor-mediated transport," *Journal of Theoretical Biology*, **424**:37-48, 2017.
3. **C.E. Miles**, I. Jouny, G. Gordon, "Exploring the connection between matroids and network coding theory," *47th Annual Conference on Information Sciences and Systems (CISS)*, 1(6):20-22, 2013.

PRESENTATIONS TALKS

- A hop, skip, and jump-diffusion through some models of intracellular transport* *Sept. 2017*
Probability & Stochastics Seminar, Tulane University, New Orleans, LA
- Disentangling active from passive diffusion in observations of motor-mediated cargo* *July 2017*
Society of Mathematical Biology (SMB) Annual Conference, Salt Lake City, UT
- Polynomial Dynamical Systems: Math Bio Meets Algebraic Geometry* *March 2016*
Graduate Student Colloquium, University of Utah
- How the Zebra Got Its Stripes: Mathematical Pattern Formation* *Oct. 2015*
Undergraduate Mathematics Colloquium, University of Utah
- Some Integrals Are Impossible: A Foray into Differential Galois Theory* *Oct. 2014*
Graduate Student Colloquium, University of Utah
- The Use of Matroids in Network Design* *April 2013*
IEEE Region 2 Student Activities Conference, Morgantown, WV
runner-up for best undergraduate paper
- Sensitivity Analysis of Polynomial Dynamical Systems* *April 2013*
National Conference on Undergraduate Research (NCUR), La Crosse, WI
- Sensitivity Analysis Using Polynomial Dynamical Systems* *Nov. 2012*
8th Annual UNCG Regional Mathematics & Statistics Conference, Greensboro, NC
runner-up for best undergraduate paper

POSTERS

- Jump Locations of State-Dependent Jump-Diffusion* *May 2017*
SIAM Conference on Applications of Dynamical Systems, Snowbird, UT

	<i>Bidirectional Motor Transport and Cargo Diffusion</i> SIAM Conference on the Life Sciences, Boston, MA graduate student poster award	July 2016
	<i>Sensitivity Analysis in Discrete Biological Models</i> NIMBioS Undergraduate Research Conference, Knoxville, TN	Nov. 2013
	<i>A Novel Method for Sensitivity Analysis of Polynomial Dynamical Systems</i> MAA/AMS Joint Mathematics Meetings, San Diego, CA	Jan. 2013
HONORS & FUNDING	NSF Research Training Group Grant (RTG) in mathematical biology Provided to stimulate interdisciplinary research in the field of mathematical biology (Utah)	2013, 2016
	Wesley S. Mitman Prize in Mathematics Awarded to the graduate most outstanding in mathematics (Lafayette)	2013
	Finley W. & Ethelwyne H. Smith Electronic Engineering Prize Awarded to the electrical engineering graduate with the highest cumulative grade point average (Lafayette)	2013
	Benjamin F. Barge Oratorical Prize Awarded for writing and pronouncing during their thesis defense in the best manner (Lafayette)	2013
TEACHING	Full Instructor , Department of Mathematics, University of Utah Math 3140: Vector Calculus & Partial Differential Equations Math 1321: Accelerated Engineering Calculus II Math 2250: Differential Equations & Linear Algebra Math 1320: Engineering Calculus II Math 1310: Engineering Calculus I	Summer 2016 Spring 2016 Fall 2015 Spring 2015 Fall 2014
	Lab Instructor , Department of Mathematics, University of Utah Math 1180: Probability & Statistics for Biologists (R programming) Math 1170: Calculus for Biologists (R programming)	Spring 2017 Fall 2016
SERVICE & OUTREACH	Workshop presenter , <i>STEM for incarcerated youth program</i> , Univ. of Utah Asst. organizer (webmaster) , <i>SMB Annual Conference</i> , Salt Lake City, Utah Presenter , <i>Pi Day</i> , Leonardo Museum, Salt Lake City, Utah Presenter , <i>Nerd Night</i> , College of Science, Univ. of Utah Co-chair , Graduate student advisory committee, Dept. of Math., Univ. of Utah Member , Retention, promotion & tenure committee, Dept. of Math., Univ. of Utah Science fair judge , The McGillis School, grades 6-8 Workshop presenter , Science Day at the U, grades 10-12	Sept. 2017 July 2017 May 2016 April 2016 2016-2017 2015-2016 2015 2015,2016