

Kelly Spendlove

PHD CANDIDATE · RUTGERS UNIVERSITY

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Education

Rutgers University

PH.D. CANDIDATE IN MATHEMATICS

New Brunswick, NJ

Aug 2013-Present

Montana State University

M.S. + B.S. IN MATHEMATICS

- highest honors

Bozeman, MT

Aug 2007 - May 2013

Honors & Awards

HONORS

- 2014 **NSF Graduate Research Fellowship**, Rutgers University
- 2013 **GAANN Fellowship**, BioMaPS, Rutgers University
- 2013 **NSF East Asia and Pacific Summer Institutes (EAPSI) Fellowship**, Kyoto University
- 2012 **Meritorius Graduate Fellowship**, Montana State University

AWARDS

- 2017 **NSF Graduate Research Opportunities Worldwide (GROW)**, Vrije Universiteit (VU) Amsterdam
- 2013 **Bill Stannard Award for Excellence in Graduate Student Professional Presentations**, Department of Mathematical Sciences, Montana State University

Publications

COMPUTATIONAL CONNECTION MATRIX THEORY WITH APPLICATIONS TO TRANSVERSALITY MODELS

- with S Harker, K Mischaikow, and R Vandervorst
- In preparation (2018)

DISCRETE MORSE THEORY FOR COMPUTING CONNECTION MATRICES

- with S Harker and K Mischaikow
- In preparation (2018)

A COMPUTATIONAL FRAMEWORK FOR CONNECTION MATRIX THEORY

- with S Harker and K Mischaikow
- Under review, arXiv:1810.04552 [math.AT] (2018)

ON THE EFFICACY OF STATE SPACE RECONSTRUCTION METHODS IN DETERMINING CAUSALITY

- with B Cummins and T Gedeon
- SIAM Journal on Applied Dynamical Systems 14 (1), 335-381 (2015)

PREDICTING HIGH-CODIMENSION CRITICAL TRANSITIONS IN DYNAMICAL SYSTEMS USING ACTIVE LEARNING

- with J. Berwald and T. Gedeon
- Mathematical and Computer Modelling of Dynamical Systems 19 (6), 557-574 (2013)

EXTENDING THE LIFETIME OF A WSN BY PARTIAL COVERS

- with B Mumey and B Zhu
- Proceedings of IEEE International Conference on Communications (ICC), 2013, 1779-1783

AN EXACT ALGORITHM FOR RECONSTRUCTING GENOMIC SCAFFOLDS

- with Z Liu, B Mumey and B Zhu
- Proceedings of 4th International Conference on Bioinformatics and Computational Biology (BICoB 2012)

Recent Talks

Morse, Conley, and Computation

IAS-PENN-RUTGERS WORKSHOP: IDENTIFYING ORDER IN COMPLEX SYSTEMS

Rutgers University

Nov 2018

Computational Connection Matrix Theory

AMS SECTIONAL MEETING

Newark DE

Sep 2018

A Computational Framework for Connection Matrices

ALGEBRAIC TOPOLOGY IN DYNAMICS AND DATA

Bozeman MT

Jul 2018

A Computational Framework for Connection Matrices

ALGEBRAIC TOPOLOGY: METHODS, COMPUTATION, AND SCIENCE (ATMCS 8)

IST Austria

Jun 2018

A Computational Framework for Connection Matrices

DYNAMICS, TOPOLOGY AND COMPUTATIONS

Bedlewo Poland

Jun 2018

Computing Connection Matrices

APPLIED ALGEBRAIC TOPOLOGY CONFERENCE

Hokkaido Japan

Aug 2017

Toward a Computational Homology Theory of Dynamics

MBI VISITOR SERIES SEMINAR

The Ohio State University

Dec 2016

Teaching

Fall 2018	TA for Calculus I for the Mathematical and Physical Sciences , Rutgers University
Spr 2018	TA for Calculus II , VU University Amsterdam
Spr 2018	TA for Linear Algebra for Business Analytics , VU University Amsterdam
Fall 2017	TA for Differential Equations for Engineering and Physics , Rutgers University
Summer 2017	Instructor for Introduction to Abstract Algebra , Rutgers University
Fall 2012	Instructor for College Algebra , Montana State University

Research Visits

2018	VU Amsterdam , GROW Fellow, (R. Vandervorst)
Fall 2016	Mathematical Biosciences Institute (MBI), The Ohio State University , Long Term Visitor, (Emphasis Semester on Analysis of Complex Data in Biological Systems)
Summer 2015	INRIA Geometrica, École Polytechnique , (F Chazal)
Summer 2013	Kyoto University , EAPSI Fellow (H Kokubu)
Summer 2012	The College of William & Mary , (S Day)

Misc. Honors & Awards

HONORS

2011-2012	Hughes Scholar Research & Outreach Fellowship , Howard Hughes Medical Institute, Montana State University
2011	IDEA Networks of Biomedical Research Excellence Fellowship , Applied Algorithms Laboratory, Montana State University

AWARDS

2016	NSF-CBMS Conference Travel Award , UT Austin
2015	NSF Data Science Workshop Travel Award , University of Washington
2014	IMA Travel Award , Institute for Mathematics and its Applications, University of Minnesota
2012	Outstanding Graduating Senior with Distinction , Department of Mathematical Sciences, Montana State University

Service and Outreach

Fall 2018	Organizer for Directed Reading Program , Rutgers University
Fall 2017	Mentor for Directed Reading Program , Directed undergraduate in combinatorial Hodge theory project
Feb 2013	'How to Be Successful in a Math Course' , Organized popular workshop at Montana State University for incoming first-year students concerning how to prepare for college math courses
Oct 2012	