

# Kelly Spendlove

Rutgers University

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## Education

- 2013-Present **Joint Ph.D. Candidate**, *Department of Mathematics & Institute for Quantitative Biomedicine, Rutgers University, Piscataway, NJ.*
- 2013 **Master of Science, Mathematics**, *Montana State University, Bozeman, MT.*
- 2012 **Bachelor of Science, Mathematics**, *Montana State University, Bozeman, MT.*

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## Honors & Awards

### Fellowships

- 2014-Present **NSF Graduate Research Fellowship**, *Rutgers University.*
- 2013-2014 **BioMaPS GAANN Fellowship**, *Rutgers University.*
- 2013 **NSF East Asia and Pacific Summer Institutes (EAPSI) Fellowship**, *Kyoto University, Japan.*
- 2012-2013 **Meritorious Graduate Fellowship**, *Montana State University.*
- 2011-2012 **Hughes Scholar Research & Outreach Fellowship**, *Howard Hughes Medical Institute.*
- Jan-Aug 2011 **IDeA Networks of Biomedical Research Excellence Fellowship**, *Applied Algorithms Laboratory, Montana State University.*

### Awards

- 2017 **NSF Graduate Research Opportunities Worldwide (GROW)**, *VU University, Netherlands.*
- 2013 **Bill Stannard Award for Excellence in Graduate Student Professional Presentations**, *Department of Mathematical Sciences, Montana State University.*
- 2012 **Outstanding Graduating Senior with Distinction**, *Department of Mathematical Sciences, Montana State University.*

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## In Preparation

- S. Harker, K. Mischaikow, K. Spendlove, *Discrete Morse Theory for Computing Connection Matrices*, in preparation.
- S. Harker, K. Mischaikow, K. Spendlove, *A Computational Framework for the Connection Matrix Theory*, in preparation.
- S. Harker, K. Mischaikow, K. Spendlove, R. Van Der Vorst, *Computational Connection Matrix Theory and Applications to Transversality Models*, in preparation.

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## Publications

- B. Cummins, T. Gedeon, K. Spendlove, *On The Efficacy of State Space Reconstruction Methods in Determining Causality*; SIAM Applied Dynamical Systems.

- K. Spendlove, J. Berwald and T. Gedeon, *Predicting High-Codimension Critical Transitions In Dynamical Systems Using Active Learning*; Mathematical and Computer Modelling of Dynamical Systems.
- B. Mumey, K. Spendlove, B. Zhu, *Extending the Lifetime of a WSN by Partial Covers*, In proceedings of IEEE International Conference on Communications (ICC '13), Budapest, Hungary, June 9-13, 2013.
- Z. Liu, B. Mumey, K. Spendlove and B. Zhu, *An Exact Algorithm for Reconstructing Genomic Scaffolds*, In proceedings of the 4th International Conference on Bioinformatics and Computational Biology (BICoB '12), Las Vegas, NV, March 12-14, 2012.

## Selected Presentations

- Sep 2018 **Computational Connection Matrix Theory**, *AMS Fall Sectional Meeting*, University of Delaware, Newark DE.
- Jul 2018 **A Computational Framework for Connection Matrices**, *Algebraic Topology in Dynamics and Data*, Bozeman, MT.
- Jun 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.
- Aug 2017 **Computing Connection Matrices**, *Applied Algebraic Topology Conference*, Hokkaido University, Japan.
- Dec 2016 **Toward A Computational Homology Theory of Dynamics**, *MBI Visitor Series*, MBI, The Ohio State University.

## Teaching Experience

- Fall 2018 **TA for 640:151: Calculus I for the Mathematical and Physical Sciences**, *Rutgers University*.
- Spring 2018 **TA for Calculus II**, *VU University*.
- Spring 2018 **TA for Linear Algebra for Business Analytics**, *VU University*.
- Fall 2017 **TA for 640:244: Differential Equations for Engineering and Physics**, *Rutgers University*.
- Summer 2017 **Instructor for 640:351: Introduction to Abstract Algebra**, *Rutgers University*.
- Fall 2012 **Instructor for M121: College Algebra**, *Montana State University*.

## Research Visits

- Spring 2018 **GROW Fellow, VU University, Amsterdam, Netherlands**, (R. Van der Vorst).
- Fall 2016 **Long Term Visitor, Mathematical Biosciences Institute, The Ohio State University, Columbus, OH**, (Emphasis Semester on Analysis of Complex Data in Biological Systems).
- May-Jul 2015 **INRIA Geometrica, École Polytechnique, Palaiseau, France**, (F. Chazal).
- Jun-Aug 2013 **EAPSI Fellow, Kyoto University, Kyoto, Japan**, (H. Kokubu).

May-Jun 2012 **The College of William & Mary**, *Williamsburg, VA*, (S. Day).

### Travel Awards

Jun 2017 **NSF-CBMS Conference Travel Award**, *Macalaster College*, (Declined).

May 2016 **NSF-CBMS Conference Travel Award**, *University of Texas, Austin*.

Aug 2015 **NSF Data Science Workshop Travel Award**, *University of Washington, Seattle WA*.

Feb 2014 **IMA Travel Award**, *Institute for Mathematics and its Applications, University of Minnesota, Minneapolis*.

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### Service/Outreach

Fall 2017 *Directed Reading Program*, Directed undergraduate project on combinatorial Hodge theory, Rutgers University.

Feb 2013 *'How To Be Successful In A Math Course'*, Organized popular workshop for incoming first-year students regarding how to prepare for math courses, Montana State University.

Fall 2012 *'Math2Excite'*, Mentor for *'Math2Excite'*, an outreach program aimed at involving middle-school in math through research projects, Montana State University.

Apr 2012 *'Communicating Mathematics: Decoding A Universal Language'*, Hughes Scholar Symposium, Montana State University.