

Curriculum Vitae

Rachel Levanger

rachel@math.rutgers.edu

<http://rachellevanger.com>

Professional Preparation

University of North Florida	Mathematics & Art History	B.A. 2012
Rutgers State University of New Jersey	Mathematics	Ph.D. (2017)

Appointments and Employment

Graduate Assistant, Rutgers University, <i>Adviser: Konstantin Mischaikow</i>	Spring 2017
Rutgers University, <i>TA for Calculus III</i>	Fall 2016
NSF EAPSI Fellow, <i>Host: Takashi Ishihara, Nagoya University, Japan</i>	Summer 2016
Graduate Assistant, Rutgers University, <i>Adviser: Konstantin Mischaikow</i>	Fall 2015 – Spring 2016
RYSP, Rutgers University, <i>Instructor for Graph Algorithms</i>	Summer 2015
DIMACS REU, <i>Graduate Student Mentor</i>	Summer 2015
Rutgers University, <i>TA for Calculus II for Math/Science Majors</i>	Fall 2014
DIMACS REU, <i>Graduate Student Coordinator</i>	Summer 2014
Fidelity National Financial, <i>Statistical Data Analyst Intern</i>	Summer 2012
University of North Florida, <i>Grader for Calculus II and Probability</i>	Spring 2012
University of North Florida, <i>Grader for Advanced Calculus</i>	Fall 2011
Fidelity National Financial, <i>Business Systems Analyst</i>	2005 - 2011
Wells Fargo Services Company, <i>Business Systems Analyst</i>	2001 - 2005

Publications

- S. Harker, M. Kramar, R. Levanger, K. Mischaikow, "A Comparison Framework for Interleaved Persistence Modules," in preparation.
- M. Kramar, R. Levanger, J. Tithof, B. Suri, M. Xu, M. Paul, M. Schatz, K. Mischaikow, "Analysis of Kolmogorov Flow and Rayleigh-Bénard Convection using Persistent Homology," accepted, *Physica D: Nonlinear Phenomena*, 2016.
- R. Dumitru, R. Levanger, and B. Visinescu, "On singular value inequalities for matrix means," *Linear Algebra and its Applications*, 439(8), Oct 15, 2405-2410 (2013).

Awards & Fellowships

Recipient of the Janice Pattwell Annual Mathematics Fellowship <i>Rutgers University, Department of Mathematics</i>	2013 - 2014
University Diversity Fellowship <i>Rutgers University Graduate School of Arts and Sciences</i>	2013 - 2015
Outstanding Undergraduate Student in Mathematics <i>University of North Florida Mathematics & Statistics Department</i>	Apr 2012
Student Speaker Award <i>Pi Mu Epsilon National Meeting at MathFest 2011, Lexington, KY.</i>	Aug 2011

Undergraduate Scholarships for Analysis & Probability <i>University of North Florida Mathematics & Statistics Department</i>	May 2011
UNF College of Arts & Sciences, Willard O. Ash Award <i>Award recognizing a senior who embodies Dean Ash's philosophy of a broad-based education in the liberal arts and sciences.</i>	Nov 2010

Selected Talks

Tracking Errors in the space of Persistence Diagrams, <i>Patterns and Waves 2016, Hokkaido University, Sapporo, Japan</i>	Aug. 1-5, 2016
Recent Developments in Topological Data Analysis, <i>High-Dimensional Data Analysis (HDDA VI), Fields Institute, Toronto</i>	May 25-27, 2016
A Comparison Framework for Interleaved Persistence Modules. <i>Applied topology seminar, University of Pennsylvania.</i>	Apr. 11, 2016
Auslander-Reiten Quivers of finite-dimensional algebras. <i>Algebra seminar, Rutgers University.</i>	Mar. 23, 2016
Generalizations of the induced matching and algebraic stability theorems. <i>MacPherson nighttime seminar, Institute for Advanced Study.</i>	Mar. 10, 2016
Dynamics of 2D fluid simulations through persistent homology. <i>Applied topology seminar, Columbia Medical.</i>	Oct. 23, 2015
Using Persistent Homology to study dynamics in the space of persistence diagrams, Parts I & II. <i>Algebraic Topology & High-Dimensional Data Analysis (HDDA V), University of Victoria, Victoria, BC</i>	Aug. 17-28, 2015
Computing Hausdorff Dimension via Persistent Homology <i>Graduate Student Pizza Seminar, Rutgers University</i>	Mar. 29, 2013
Bent out of Shape: Taking a look at Perturbed Eigenvalues <i>Florida MAA Conference Student Speaker, University of North Florida</i>	Feb. 18, 2012
Imagining the Banach-Tarski Paradox <i>Student Speaker, Pi Mu Epsilon National Meeting at MathFest 2011</i>	Aug. 4, 2011

Service

Co-organizer for New York Applied Topology seminar, <i>Columbia University Medical Center</i>	Fall 2015 – Spring 2016
Co-organizer for AMS Special Session on Topological Data Analysis: Computations, Statistics and Applications, <i>Rutgers University</i>	Nov. 2015
Directed Reading Program, <i>Rutgers University</i>	Fall 2014 – Spring 2016
Pi Mu Epsilon Florida Eta Chapter, <i>President</i>	2011 - 2012
Pi Mu Epsilon Florida Eta Chapter, <i>Vice President</i>	2011

Computer Experience

Experience with MATLAB, Mathematica, Maple, Microsoft Office Suite (Excel, Word, Access, Visio), Microsoft SQL Server, Microsoft Visual Studio, Processing, and Eclipse IDE for Java Developers.

Programming experience in Python, shell scripting, R, LaTeX, SQL, C#, C++, VB, and JAVA. Data modeling experience with relational databases, domain models (UML), and XML.