Curriculum Vitae

Rachel Levanger

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Professional Preparation

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

Appointments

EAPSI Fellow*, Host Researcher: Takashi Ishihara, Nagoya University*	Summer 2016
Graduate Assistant, Rutgers University*, Advisor: Konstantin Mischaikow*	Fall 2015 – Spring 2016
RYSP, Rutgers University, *Instructor for Graph Algorithms*	Summer 2015
DIMACS REU, *Graduate Student Mentor*	Summer 2015
Rutgers University, *TA for Calculus II for Math/Science Majors*	Fall 2014
DIMACS REU, *Graduate Student Coordinator*	Summer 2014
Fidelity National Financial, *Statistical Data Analyst Intern*	Summer 2012
University of North Florida, *Grader for Calculus II and Probability*	Spring 2012
University of North Florida, *Grader for Advanced Calculus*	Fall 2011
Fidelity National Financial, *Business Systems Analyst*	2005 - 2011
Wells Fargo Services Company, *Business Systems Analyst*	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 — 2013 - 2014
Rutgers University, Department of Mathematics

University Diversity Fellowship — 2013 - 2015
Rutgers University Graduate School of Arts and Sciences

Outstanding Undergraduate Student in Mathematics — Apr 2012
University of North Florida Mathematics & Statistics Department

Student Speaker Award — Aug 2011
Pi Mu Epsilon National Meeting at MathFest 2011, Lexington, KY.

Undergraduate Scholarships for Analysis & Probability — May 2011
University of North Florida Mathematics & Statistics Department

UNF College of Arts & Sciences, Willard O. Ash Award — Nov 2010
Award recognizing a senior who embodies Dean Ash's philosophy of a broad-based education in the liberal arts and sciences.

Selected Talks

(TBA) *Dynamical Systems Conference, Sapporo, Japan* — Aug. 1-5, 2016

(TBA) *High-Dimensional Data Analysis (HDDA VI), Fields Institute, Toronto* — May 25-27, 2016

A Comparison Framework for Interleaved Persistence Modules. — Apr. 11, 2016
University of Pennsylvania.

Generalizations of the induced matching and algebraic stability theorems. — Mar. 10, 2016
MacPherson nighttime seminar, Institute for Advanced Study.

Dynamics of 2D fluid simulations through persistent homology. *Columbia Medical* — Oct. 23, 2015

Using Persistent Homology to study dynamics in the space of persistence diagrams, Parts I & II. *Algebraic Topology & High-Dimensional Data Analysis (HDDA V), University of Victoria, Victoria, BC* — Aug. 17-28, 2015

Computing Hausdorff Dimension via Persistent Homology — Mar. 29, 2013
Graduate Student Pizza Seminar, Rutgers University

Bent out of Shape: Taking a look at Perturbed Eigenvalues — Feb. 18, 2012
Florida MAA Conference Student Speaker, University of North Florida

Imagining the Banach-Tarski Paradox — Aug. 4, 2011
Student Speaker, Pi Mu Epsilon National Meeting at MathFest 2011

Service

Co-organizer for New York Applied Topology seminar, — Fall 2015 – Spring 2016
Columbia Medical

Co-organizer for AMS Special Session on Topological Data Analysis: Computations, Statistics and Applications, *Rutgers University* — Nov. 2015

Directed Reading Program, *Rutgers University* — Fall 2014 – Spring 2016

Pi Mu Epsilon Florida Eta Chapter, *President* — 2011 - 2012

Pi Mu Epsilon Florida Eta Chapter, *Vice President* — 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.