

Karen Larson

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| CONTACT INFORMATION | Brown University Division of Applied Mathematics 182 George Street, Box F Providence, RI 02906 Website: | (401) 863 2339 karen_larson@brown.edu Updated: October 2017 http://karenlarson.net |
| RESEARCH INTERESTS | Mathematical biology, inverse problems, uncertainty quantification, parameter estimation, model selection, numerical methods, fluid flows, ordinary differential equations and partial differential equations | |
| EDUCATION | Brown University , Providence, RI Graduate Student, Applied Mathematics Advisor: Dr. Anastasios Matzavinos Expected date of completion: May 2019 Masters of Science, Applied Mathematics | 2014 – present May 2016 |
| | Davidson College B.S. Mathematics, Honors in Applied Mathematics Minor in Chinese Phi Beta Kappa <i>Magna cum laude</i> | May 2012 May 2012 |
| RESEARCH | Brown University , Providence, RI <i>Bayesian Uncertainty Quantification on Dynamic Processes in Networks</i> Advisor: Dr. Anastasios Matzavinos, Division of Applied Mathematics – Finding optimal parameters for 1-D blood flow using Pi4U – Applying model selection techniques to aid in aneurysm detection – Performing shape optimization on lipid bilayer modeled by DPD – Investigating phase transitions of epidemic spread on networks | Summer 2015 - present |
| PAPERS IN PREPARATION | Clark Bowman, Karen Larson , Alex Roitershtein, Derek Stein, Anastasios Matzavinos. Bayesian uncertainty quantification for particle-based simulation of lipid bilyaer membranes, Invited chapter in Cell Movement: Modeling and Applications. <i>Under review</i> . Zhizhong Chen, Karen Larson , Clark Bowman, Panagiotis Hadjidoukas, Costas Papadimitriou, Petros Koumoutsakos, and Anastasios Matzavinos. Bayesian uncertainty quantification for epidemic spread on networks. <i>Submitted to arXiv</i> . Karen Larson , Panagiotis Hadjidoukas, Costas Papadimitriou, Petros Koumoutsakos, and Anastasios Matzavinos. Bayesian uncertainty quantification for one-dimensional blood flow model. <i>In preparation</i> . | |

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| HONORS AND AWARDS | Spring 2015 | Honorable Mention, National Science Foundation Graduate Research Fellowship | |
| | January 2013 | Outstanding Presentation, Joint Math Meetings | |
| | May 2012 | William G. McGavock Mathematics Award, Davidson College | |
| | March 2012 | Patterson Prize for Outstanding Talk, Southeastern MAA Sectional Meeting | |
| | Spring 2012 | Honorable Mention for Mathematical Contest in Modeling | |
| | 2008 – 2012 | Presidential Scholar and James Y. Causey Scholar, Davidson College | |
| INVITED TALKS | <i>Bayesian Uncertainty Quantification of Biological Networks</i> | SIAM Conference on Dynamical Systems, Snowbird, UT | May 2017 |
| CONTRIBUTED TALKS AND POSTER PRESENTATIONS | <i>Bayesian Uncertainty Quantification of Dynamic Processes in Networks</i> | SIAM Annual Meeting, Pittsburgh, PA | July 2017 |
| | <i>Bayesian Uncertainty Quantification of Biological Networks</i> | Poster at Statistical Perspectives of Uncertainty Quantification, Atlanta, GA | May 2017 |
| | <i>Uncertainty Quantification in Blood Flow</i> | Applied Math Days, RPI, Troy, NY | April 2017 |
| | <i>Uncertainty Quantification in Blood Flow Models</i> | Applied Math Graduate Student Seminar, Brown University, Providence, RI | March 13, 2017 |
| | <i>DPD Simulation of a Membrane</i> | Math SLAM at Brown University, Providence, RI | Nov. 1, 2015 |
| | <i>Improved High-Order Modulation Maximal Likelihood System</i> | Poster at Joint Math Meeting, San Diego, CA | Jan. 11 2013 |
| | <i>Unwrapping Rap</i> | Math Coffee, Davidson, NC | March 29, 2012 |
| | <i>Unwrapping Rap</i> | Southeastern MAA Sectional Meeting, Morrow, GA | March 9, 2012 |
| | <i>Clustering and Classification of Drum Patterns</i> | Poster at Poster Symposium, Claremont, CA | August 2, 2011 |
| WORKSHOPS AND SUMMER SCHOOLS | Uncertainty Quantification for Biological Models | NIMBioS at the University of Tennessee, Knoxville, TN | June 26 – 28, 2017 |
| | Brown-ICERM-Kobe Summer Simulation School | Brown University, Providence, RI and Kobe University, Kobe, Japan | August 17 – 31, 2015 |
| | Statistical Clustering and Classification of Music Research Experience for Undergraduates | Pomona College, Claremont, CA | Summer 2011 |
| | Program for Women and Mathematics: Sparsity and Computation | IAS, Princeton, NJ | May 16 – 27, 2011 |
| ORGANIZING ACTIVITIES | Co-Organizer WINR Symposium , New England, | Brown University, Providence, RI | Fall 2016 – March 2017 |

OUTREACH AND SERVICES

Treasurer, **Association for Women in Math at Brown University**,
 Providence, RI Fall 2015 – Spring 2016, Fall 2017 – present

Treasurer, **Brown University SIAM Chapter**,
 Brown University, Providence, RI Fall 2017 – present

LISTSERV Manager, **Rose Whelan Society for Graduate Women in Math**,
 Brown University, Providence, RI Spring 2017 – present

Effective Mentoring Panel Facilitator, **WINR Symposium**, New England,
 Brown University, Providence, RI March 4, 2017

Treasurer, **Rose Whelan Society for Graduate Women in Math**,
 Brown University, Providence, RI Fall 2016 – present

Faculty-Graduate Liaison in Division of Applied Mathematics, Brown University,
 Providence, RI October 2016 – present

Mentor for **Applied Math Undergraduate Graduate Mentoring Program**,
 Division of Applied Mathematics, Brown University Spring 2015 – present

Executive Board Member, **Association for Women in Math at Brown University**,
 Providence, RI Fall 2016 – Spring 2017

Event organizer for the **Rose Whelan Society for Graduate Women in Math**,
 Brown University, Providence, RI Fall 2014 – Spring 2016

Vice President, **Association for Women in Math at Brown University**,
 Providence, RI Fall 2014 – Spring 2015

Vice President, **Bernard Society of Mathematics**,
 Davidson, NC 2011 – 2012

TRAVEL AWARDS

Brown University Graduate Student Conference Funding - to attend and present a contributed talk at the SIAM Annual Meeting, Pittsburgh, PA, July 2017.

Travel Grant from the SPUQ conference - to attend and present a poster at the Statistical Perspectives of Uncertainty Quantification conference, Atlanta, GA, May 29-30 2017.

Brown University Graduate Student Council Funding - to attend and present a poster at the Statistical Perspectives of Uncertainty Quantification conference, Atlanta, GA, May 29-30 2017.

Brown University Graduate Student Conference Funding - to attend and present an invited talk at the SIAM Conference on Applications of Dynamical Systems, Snowbird, UT, May 2017.

PROFESSIONAL ORGANIZATIONS

Society for Mathematical Biology
 Society for Industrial and Applied Mathematics
 Association for Women in Mathematics

