Bhargav Ram Karamched

Contact Information

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Department of Mathematics
Florida State University
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Tallahassee, FL 32306-4510
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Research Interests

Biomathematics, Stochastic Processes, Theoretical Biophysics, Complex Systems, Theoretical Bioengineering, Celluluar Neuroscience

Academic Appointments

Florida State University, Tallahassee, FL, USA

Assistant Professor of Biomathematics — **August 2020 - present**
Graduate Faculty Member of Program in Molecular Biophysics — **August 2020 - present**
Graduate Faculty Member of Program in Neuroscience — **March 2022 - present**

The University of Houston, Houston, TX, USA

Lecturer — **January 2018 - July 2020**

Education

The University of Houston, Houston, TX, USA

Postdoctoral Fellow — **June 2017 - July 2020**

- Advisor: Krešimir Josić

The University of Utah, Salt Lake City, UT, USA

Ph. D., Mathematics, May 2017

Thesis Title: "Mathematical Models of Motor-Based Intracellular Transport"

- Advisor: Paul Bressloff
- *GPA:* 4.0

The University of Oklahoma, Norman, Oklahoma, USA

B.S., Mathematics, May 2012

- *GPA:* 4.0

The University of Oklahoma, Norman, Oklahoma, USA

B.S., Biochemistry, May 2012

- *GPA:* 4.0

Publications

24. **B. R. Karamched**, J. Schmidt, D. Murrugarra. Observability of Complex Systems via Conserved Quantities. *Physica D: Nonlinear Phenomena*. 477: 134714 (2025).
23. Z. Dere, N. G. Cogan, and **B. R. Karamched**. Optimal Control Strategies for Mitigating Antibiotic Resistance: Integrating Virus Dynamics for Enhanced Intervention Design. *Mathematical Biosciences*. 386: 109464 (2025).
22. C. Ryzowicz, R. Bertram, and **B. R. Karamched**. Oscillations in Delayed Positive Feedback Systems. *Physical Chemistry Chemical Physics*. **26**, 24861-24869 (2024).

21. S. Hartman, S. D. Ryan, and **B. R. Karamched**. Walk this Way: Modeling Foraging Ant Dynamics in Multiple Food Source Environments. *Journal of Mathematical Biology* 89, 41 (2024).
    - Featured in FSU Press Release
20. S. Linn, S. D. Lawley, **B. R. Karamched**, Z. P. Kilpatrick, and K. Josić. Fast decision reflect biases; slow decision do not. *Physical Review E.* 110, 024305 (2024).
    - Featured in *New Scientist* Magazine
    - Featured in *The Standard - Uganda* Magazine
    - Featured in FSU, CU-Boulder, and Utah Press Releases
19. M. Stickler, W. Ott, Z. P. Kilpatrick, K. Josič, and **B. R. Karamched**. Impact of Correlated Information on Pioneering Decisions. *Physical Review Research.* 5, 033020 (2023).
18. **B. R. Karamched** and C. E. Miles. Stochastic Switching of Delayed Feedback Suppresses Oscillations in Genetic Regulatory Systems. *Journal of Royal Society Interface.* 20: 20230059 (2023).
17. F. Bai, R. Bertram, **B. R. Karamched**. A Mathematical Study of the Efficacy of Possible Negative Feedback Pathways Involved in Neuronal Polarization. *Journal of Theoretical Biology.* 111561 (2023).
16. R. Godin, **B. R. Karamched**, S. D. Ryan. The Space Between Us: Modeling Spatial Heterogeneity in Synthetic Microbial Consortia Dynamics. *Biophysical Reports*. 100085 (2022).
    - Featured in FSU and Cleveland St. Press Releases
15. **B. R. Karamched**, G. Hripcsak, R. L. Leibel, D. J. Albers, and W. Ott. Delay-Induced Uncertainty in the Glucose-Insulin System: Pathogenicity for Obesity and Type-2 Diabetes Mellitus. *Frontiers in Physiology*. 13:936101 (2022).
14. F. Bai, R. Bertram, **B. R. Karamched**. A Closed-Loop Multi-Scale Model for Intrinsic Frequency-Dependent Regulation of Axonal Growth. *Mathematical Biosciences*. 344: 108768 (2022).
13. J. J. Winkle, **B. R. Karamched**, M. R. Bennett, W. Ott, and K. Josić. Emergent Spatiotemporal Population Dynamics with Cell-Length Control of Synthetic Microbial Consortia. *PLoS Comput Biol.* 17(9): e1009381 (2021).
12. I. Kemler, **B. R. Karamched**, C. Neuhauser, D. Dingli. Quantitative Imaging and Dynamics of Tumor Therapy with Viruses. *The FEBS Journal.* (2021)
11. **B. R. Karamched**, G. Hripcsak, D. J. Albers, and W. Ott. Delay-Induced Uncertainty in a Paradigmatic Glucose-Insulin Model. *Chaos*. **31** 023142 (2021).
10. **B. R. Karamched**, M. Stickler, B. Lindner, Z. P. Kilpatrick, W. Ott, and K. Josič. Heterogeneity Improves Speed and Accuracy in Social Networks. *Physical Review Letters* 125, 218302 (2020)
    - Editors' Suggestion for *Physical Review Letters*
    - Featured in *Physics Magazine*
    - Featured in *Physics Today*
    - Featured in Florida St. University and University of Colorado-Boulder Press Releases
    - Featured in the Denver Local News
9. **B. R. Karamched**, S. Stolarczyk, Z. P. Kilpatrick, and K. Josić. Optimal Evidence Accumulation on Social Networks. *SIAM Journal on Applied Dynamical Systems* **19**(3) 1884-1919 (2020)

8. R. N. Alnahhas, J. J. Winkle, A. J. Hirning, **B. R. Karamched**, W. Ott, K. Josić, and M. R. Bennett. Spatiotemporal Dynamics of Synthetic Microbial Consortia in Microfluidic Devices. *ACS Synthetic Biology* 8: 2051-2058 (2019)
7. **B. R. Karamched**, W. Ott, I. Timofeyev, R. N. Alnahhas, M. R. Bennett, and K. Josić. Moran Model of Spatial Alignment in Microbial Colonies. *Physica D: Nonlinear Phenomena*.(2019)
6. P. C. Bressloff and **B. R. Karamched**. Doubly Stochastic Poisson Model of Flagellar Length Control. *SIAM Journal on Applied Mathematics* 78(2), 719-741 (2018)
5. P. C. Bressloff, **B. R. Karamched**, S. D. Lawley, and E. Levien. Diffusive Transport in the Presence of Stochastically Gated Absorption. *Physical Review E* **96** (2) (2017).
4. **B. R. Karamched** and P. C. Bressloff. Effects of Cell Geometry on Reversible Vesicular Delivery. *Journal of Physics A: Mathematical and Theoretical* **50** 055601 (2017).
    - Highlight in Biological Modeling of *Journal of Physics A: Mathematical and Theoretical* for 2017
3. P. C. Bressloff and **B. R. Karamched**. Model of reversible vesicular transport with exclusion. *Journal of Physics A: Mathematical and Theoretical* **49** 345602 (2016)
2. P. C. Bressloff and **B. R. Karamched**. A Frequency-Dependent Decoding Mechanism for Axonal Length Sensing. *Frontiers in Cellular Neuroscience* 9:281. (2015).
1. **B. R. Karamched** and P. C. Bressloff. Delayed Feedback Model of Axonal Length Sensing. *Biophysical Journal* **108** 2408-2419 (2015).

Grants

Provost Travel Award, 2025 $1000
Dean's Travel Award, 2025-2026 $2000
CRC Florida State University Seed Grant - Delay-Induced Uncertainty in Physiological Systems 2023-2025, $96000
AMS-Simons Travel Award, 2021-2023, $5000
CRC Florida State University First-Year Assistant Professor Award, Summer 2021, $20,000

Honors and Awards

University of Utah Department of Mathematics Outstanding Graduate Student,'15-'16
Phi Beta Kappa '12
University of Oklahoma Henderson Scholar of the Year, '10 - '11
University of Oklahoma Henderson Freshman Scholar of the Year, '08 - '09
Oklahoma Regents Scholarship, University of Oklahoma, '08 - '12
Union High School Valedictorian (Rank 1 of 898), Tulsa, OK, '08

Teaching Experience

Department of Mathematics, Florida State University
Assistant Professor of Mathematics **August 2020 - present**
Teaching:
F - Fall S - Spring Su - Summer

1. Ordinary Differential Equations - Su25
2. Elementary Partial Differential Equations I - F21, Su22
3. Calculus with Analytic Geometry III - F20,23 S21,22
4. Methods of Applied Mathematics I - F22,23
5. Applied Linear Algebra I - F24, S24,25
6. Biomath Projects - S24
7. YSP Nonlinear Dynamics - Su24

8. Computational Biology - F24

Seminar Organization:

1. Biomathematics Journal Club - F23, 24, S22
2. Biomathematics Seminar - F22, S25

Department of Mathematics, University of Houston
Postdoctoral Fellow **January 2018 - July 2020**

Teaching:

1. Discrete Mathematics - Spring 2019
2. Transitions to Advanced Mathematics - Spring 2018, Spring 2020 (online)

Department of Mathematics, University of Utah
Teaching Assistant **August 2012 - May 2017**

Duties at various times have included leading lab exercises and teaching.

- *Teaching:*
  Engineering Calculus I - Fall 2016
  Honors Engineering Calculus I - Fall 2015
  Engineering Calculus II - Fall 2013, Spring 2015
  Honors Engineering Calculus II - Spring 2017
  Differential Equations and Linear Algebra - Fall 2014
  Vector Calculus and Partial Differential Equations - Spring 2016
- *Labs:*
  Engineering Calculus I - Fall 2012
  Engineering Calculus II - Spring 2013
  Vector Calculus and Partial Differential Equations - Spring 2014

Mentoring

Department of Mathematics, Florida State University **August 2020 - present**

- Ph. D. Students
  - Ongoing
    1. Zainab Dere - Project: Spatiotemporal Dynamics of Viral Infection in Biofilms (with Nick Cogan)
    2. Christopher Ryzowicz - Project: Stochasticity and Delays in Positive Feedback Systems
    3. Noel Milam - Project: Dynamics of Leukemia Inititation and Progression (with Nick Cogan)
  - Graduated
    1. Fan Bai - Neuronal Development: From Polarization to Axon Growth - 2023
       Current Position: Principal Product Development Engineer - The Timken Company - Canton, OH
- Undergraduate Students
  1. Stuti Guha - Project: How Inter-Species Competition Affects Foraging Patterns in Ants
  2. Sean Hartman - Project: How Local Interactions Affect Global Structure in Foraging Ants (Graduated Spring 2023)

Department of Mathematics, University of Houston **June 2018 - July 2020**

- Ph. D. Students
  1. Megan Stickler - Project: Decision-Making Dynamics on Networks
  2. Deepjyoti Ghosh - Project: Reliability Failure in Glucose-Insulin Dynamics: Theory and Clinical Studies
- Undergraduate Students
  1. Tammy Lam - Project: Reservoir Computing for Chaotic Glucose-Insulin Oscillations
- High School Students
  1. Aprameya Sudarshan - Generalizing the Two Brothers Problem

Leadership Roles

1. **Secretary/Treasurer** for SIAM Southeastern Atlantic Section 2024 - present

Organization

1. **Minisymposium - Biological Oscillations in Celebration of Richard Bertram's 60th Birthday**
   SIAM Conference on the Applications of Dynamical Systems, May 11-15, 2025
   Sheratown Denver Downtown, Denver, CO, USA
   Co-organizer: Nicholas Cogan
2. **Minisymposium - Insights from Stochasticity in Intracellular Processes**
   SIAM Conference on the Life Sciences, June 10-13, 2024
   Hilton Portland Downtown, Portland, OR, USA
   Co-organizer: Youngmin Park
3. **Minisymposium - Dynamics of Decisions and Behavior in Social Systems**
   SIAM Conference on Dynamical Systems, May 14-18, 2023
   Doubletree by Hilton Hotel, Portland, OR, USA
   Co-organizers: Krešimir Josić, Zachary Kilpatrick
4. **Minisymposium - Understanding Spatiotemporal Dynamics and Complex Systems in Multi-Scale Biological Processes**
   SIAM Conference on the Life Sciences, July 10-14, 2022
   David L. Lawrence Convention Center, Pittsburgh, PA, USA
   Co-organizer: Gaoyang (Bridget) Fan
5. **Minisymposium - Modeling and Data Science in Quantitative Biology: Predictions and Descriptions**
   SIAM Southeastern Atlantic Section Conference, September 18 - 19, 2021
   Auburn University, Auburn, AL, USA
6. **Minisymposium - Lattice Models and Agent-Based Models in Biology: Linking Individual Properties to Population Properties**
   SMB Annual Meeting, June 13-17, 2021 (Virtual)
7. **Minisymposium - Mechanisms Underlying Dynamical Processes in Cellular and Systems Physiology**
   SIAM Conference on Dynamical Systems, May 23-27, 2021 (Virtual)
   Co-organizer: Gabriela Jaramillo
8. **Minisymposium - Biological Oscillations: From Genes to Populations**
   SIAM TX-LA Sectional Meeting, October 17, 2020 (Virtual)
   Hosted by Texas A&M University, College Station, TX, USA
   Co-organizer: William Ott

9. **Minisymposium - Biological Signaling in Cellular Collectives**
   SIAM Conference on the Applications of Dynamical Systems, May 23, 2019
   Snowbird Ski and Summer Resort, Snowbird, UT, USA
   Co-organizer: William Ott
10. **Minisymposium - Dynamical Models of Individual and Collective Decision-Making**
    SIAM Conference on Life Sciences, August 8, 2018
    Radisson BLU Minneapolis Downtown Hotel, Minneapolis, MN, USA
    Co-organizers: Krešimir Josić, Zachary Kilpatrick
11. **Calculus Carnival**
    University of Utah, November 21, 2013
    Salt Lake City, UT, USA
    Experimented with alternative forms of educational methods to teach key calculus concepts.

Talks

1. **Modeling Foraging Ant Dynamics in Multiple Food Source Environments**
   SIAM Conference on Applications of Dynamical Systems, May 11-15, 2025
   Sheraton Denver Downtown Hotel, Denver, CO, USA
2. **Dynamic Homeostasis in Relaxation and Bursting Oscillations**
   University of California-Irvine Applied Mathematics Seminar, May 5, 2025
   The University of California-Irvine, Irvine, CA, USA
3. **Modeling Foraging Ant Dynamics in Multiple Food Source Environments**
   University of Iowa Mathematical Biology Seminar, March 31, 2025 (Virtual)
   The University of Iowa, Iowa City, IA, USA
4. **Formulation, Approximation, Reduction: A Journey through Stochastic Methods in Theoretical Biology**
   Florida State University Biomathematics Seminar, December 4, 2024
   Florida State University, Tallahassee, FL, USA
5. **Oscillations in Delayed Positive Feedback Systems**
   University of Houston Networks Seminar, Septebmer 20, 2024
   University of Houston, Houston, TX, USA
6. **Mechanisms Underlying Spatiotemporal Patterning in Microbial Consortia: A Theoretical Analysis**
   Special UMBC Biomath Seminar, June 25, 2024
   University of Maryland, Baltimore County, Catonsville, MD, USA
7. **Modeling Spatial Heterogeneity in Synthetic Microbial Consortia Dynamics**
   SIAM Conference on Nonlinear Waves and Coherent Structures, June 24-27, 2024
   Lord Baltimore Hotel, Baltimore, MD, USA
8. **Stochastic Switching of Delayed Feedback Suppresses Oscillations in Genetic Regulatory Systems**
   SIAM Conference on the Life Sciences, June 10-13, 2024
   Hilton Portland Downtown, Portland, OR, USA
9. **Stochasticity in Biological Systems**
   OU Mathematics Colloquium, April 25, 2024
   University of Oklahoma, Norman, OK, USA
10. **What is Biophysics?**
    Featured Alumni Student Physics Seminar, April 24, 2024
    University of Oklahoma, Norman, OK, USA
11. **A Possible Mechanism for Neuronal Polarization**
    RIT Applied Mathematics Seminar, April 4, 2024
    Rochester Institute of Technology, Rochester, NY, USA

12. **Formulation, Approximation, Reduction: A Journey Through Techniques used in Stochastic Analysis of Biological Systems**
FSU Biomathematics Seminar, November 8, 2023
Florida State University, Tallahassee, FL, USA

13. **Stochastic Switching of Delayed Feedback Suppresses Oscillations in Genetic Regulatory Systems**
SIAM TX-LA Sectional Meeting, November 3-5, 2023
The University of Louisiana-Lafayette, Lafayette, LA, USA

14. **Stochastic Switching of Delayed Feedback Suppresses Oscillations in Genetic Regulatory Systems**
University of Florida Biomathematics Seminar, October 12, 2023
The University of Florida, Gainesville, FL, USA

15. **Stochastic Switching of Delayed Feedback Suppresses Oscillations in Genetic Regulatory Systems**
University of Iowa Mathematical Biology Seminar, September 25, 2023 (Virtual)
The University of Iowa, Iowa City, IA, USA

16. **How do Heterogeneity and Correlated Information Affect Decision-Making in Social Networks?**
Annual Meeting of the Society for Mathematical Biology, July 17-21,2023
The Ohio State University, Columbus, OH, USA

17. **Mechanisms Underlying Spatiotemporal Patterning in Microbial Collectives: A Mathematical Perspective**
Virginia Commonwealth University Biomath Seminar,January 20, 2023 (Virtual)
Virginia Commonwealth University, Richmond, VA, USA

18. **The Mathematics of Neurite Polarization**
University of Kentucky Applied Mathematics Colloquium, October 20, 2022
University of Kentucky, Lexingon, KY, USA

19. **Linking Individual Properties to Population Structure in Biological Systems**
Duke University Mathematical Biology Colloquium, September 23, 2022 (Virtual)
Duke University, Durham, NC, USA

20. **Cells, Networks, and Engineering Life: A Journey through Biomathematics**
FSU Biomathematics Seminar, August 31, 2022
Florida State University, Tallahassee, FL, USA

21. **Linking Cell Shape to Population Structure in Synthetic Bacterial Collectives: A Theoretical Perspective**
SIAM Conference on Life Sciences, July 10-14, 2022
David L. Lawrence Convention Center, Pittsburgh, PA, USA

22. **Optimal Decision-Making in Social Networks**
West Virginia University Mathematics Colloquium, April 22, 2022
West Virginia University, Morgantown, WV, USA

23. **Molecular Motors and Axons: A Mathematical Perspective on the Role Motors Play in Vesicle Delivery in Axons and Length Sensing of Axons**
Florida State University Neuroscience Colloquium, March 2, 2022
Florida State University, Tallahassee, FL, USA

24. **Mechanisms Underlying Spatiotemporal Patterning in Microbial Collectives: A Model's Perspective**
Georgia Tech Mathematical Biology Seminar, February 23, 2022
Georgia Institute of Technology, Atlanta, FL, USA

25. **Lattice Models in Synthetic Biology and Cancer: How simple models and help us understand complex spatiotemporal systems**
Florida State University Biomathematics Seminar, October 27 2021
Florida State University, Tallahassee, FL, USA

26. **Delay-Induced Uncertainty in a Paradigmatic Glucose-Insulin Model**
SIAM Southeastern Atlantic Section Conference, September 18-19, 2021
Auburn University, Auburn, AL, USA

27. **Spatial Model of Oncolytic Virotherapy: Targeting Drug-Resistant Mutants**
SMB Annual Meeting, June 13-17, 2021 (Virtual)
University of California-Riverside, Riverside, CA, USA

28. **Delay-Induced Uncertainty in a Paradigmatic Glucose-Insulin Model**
SIAM Conference on Applications of Dynamical Systems, May 23-27, 2021 (Virtual)
Portland, OR, USA

29. **Optimal Decision-Making in Social Networks**
University of California-Riverside Applied Math and PDE Seminar, March 10, 2021 (Virtual)
University of California-Riverside, Riverside, CA, USA

30. **Optimal Decision-Making in Social Networks**
Florida State University Scientific Computing Colloquium, March 3, 2021 (Virtual)
Florida State University, Tallahassee, FL, USA

31. **Controlling Emergent Spatiotemporal Patterns in Synthetic Consortia: A Modeling Perspective**
Cleveland State University Mathematics Colloquium, February 26, 2021 (Virtual)
Cleveland State University, Cleveland, OH, USA

32. **Optimal Decision-Making in Social Networks**
University of New Mexico Mathematics Colloquium, February 22, 2021 (Virtual)
University of New Mexico, Albuquerque, NM, USA

33. **Controlling Emergent Spatiotemporal Patterns in Synthetic Consortia: A Modeling Perspective**
University of Pennsylvania Center for Mathematical Biology Seminar, February 16, 2021 (Virtual)
University of Pennsylvania, Philadelphia, PA, USA

34. **Bacterial Cell-Shape Modulation and Induced Population Dynamics of Synthetic Microbial Consortia**
SIAM TX-LA Sectional Meeting, October 17, 2020 (Virtual)
Texas A&M University, College Station, TX, USA

35. **Bacterial Cell-Shape Modulation and Induced Population Dynamics of Synthetic Microbial Consortia**
MBI Workshop on Mathematical and Computational Methods in Biology, May 5-7,2020 (Virtual)
Mathematical Biosciences Institute, Columbus, OH, USA

36. **Binary Decisions of Large Cliques of Evidence Accumulators**
APS March Meeting, March 2-6, 2020 (Virtual)
Denver, CO, USA

37. **From Individuals to Populations: How features and interactions of individuals shape population dynamics**
Mathematics Colloquium, February, 3 2020
University of Maine, Orono, ME, USA

38. **From Individuals to Populations: How features and interactions of individuals shape population dynamics**

Mathematics Colloquium, January 24, 2020
Florida State University, Tallahassee, FL, USA

39. **Explaining and Controlling Spatiotemporal Patterns of Synthetic Microbial Consortia in Microfluidic Devices: A Model's Perspective**
Structural Biology/Biochemistry Seminar, January 23, 2020
Florida State University, Tallahassee, FL, USA

40. **From Individuals to Populations: How features and interactions of individuals shape population dynamics**
Mathematics Colloquium, December 13, 2019
Clarkson University, Potsdam, NY, USA

41. **Evidence Accumulation and Decision-Making on Social Networks**
Networks Seminar, September 27, 2019
University of Houston, Houston, TX, USA

42. **Evidence Accumulation and Decision-Making on Social Networks**
Data Science Seminar, September 13, 2019
University of Houston, Houston, TX, USA

43. **Moran Model of Spatial Alignment in Microbial Colonies**
SIAM Conference on Applications of Dynamical Systems, May 19-24, 2019
Snowbird Summer and Ski Resort, Snowbird, UT, USA

44. **Moran Model of Spatial Alignment in Microbial Colonies**
SIAM TX-LA Sectional Meeting, October 5-7, 2018
Louisiana State Univeristy, Baton Rouge, LA, USA

45. **Evidence Accumulation and Decision-Making on Networks**
SIAM Conference on the Life Sciences, August 6-9, 2018
Radisson BLU Minneapolis Downtown, Minneapolis, MN, USA

46. **Boundary-Driven Emergent Spatiotemporal Order in Growing Microbial Colonies**
Conference on Mathematical Approaches to Cell-Cell Communication and Collective Behaviours, July 9-13, 2018
Banff International Research Station, Banff, Alberta, Canada

47. **Evidence Accumulation and Decision-Making on Networks**
Mathematical Neuroscience Workshop, February 28 - March 1, 2018
University of Colorado-Boulder, Boulder, CO, USA

48. **Frequency Dependent Gene Expression for Axonal Length Sensing**
Mathematical Neuroscience Workshop, September 8, 2017
University of Colorado-Boulder, Boulder, CO, USA

49. **Doubly Stochastic Poisson Model of Flagellar Length Control**
Annual Meeting of the Society for Mathematical Biology, July 17-21, 2017
University of Utah, Salt Lake City, UT, USA

50. **Effects of Cell Geometry on Reversible Vesicular Delivery**
SIAM Conference on Applications of Dynamical Systems, May 21-25, 2017
Snowbird Ski and Summer Resort, Snowbird, UT, USA

51. **Mathematical Models of Motor-Based Intracellular Transport**
Networks Group Meeting, April 12, 2017
University of Houston, Houston, TX, USA

52. **The Princess Problem**
Undergraduate Mathematics Colloquium, March 29, 2017
University of Utah, Salt Lake City, UT, USA

53. **Motor-Based Delivery of Vesicles to Localized Cellular Targets**
Tim Elston Lab Seminar, November 30, 2016
University of North Carolina, Chapel Hill, NC, USA

54. **Modeling Hard-Core Repulsion in Transport Processes**
Applied Math Group, November 3, 2016
University of Utah, Salt Lake City, UT, USA

Posters

1. **A Mechanism for Axonal Length Sensing**
Florida State University First Year Assistant Professor (FYAP) Workshop, September 10, 2021 (Virtual)

2. **Boundary-Driven Emergent Spatiotemporal Order in Growing Microbial Colonies**
University of Houston Postdoc Symposium, July 20-21, 2018
UH Hilton Hotel, Houston, TX, USA
    - Winner! Best Poster

3. **Boundary-Driven Emergent Spatiotemporal Order in Growing Microbial Colonies**
Conference on Quantitative Biology, June 26-29, 2018
BioScience Research Collaborative, Houston, TX, USA

4. **Evidence Accumulation and Decision-Making on Networks**
COSYNE 2018, March 1-4, 2018
Downtown Hilton Hotel, Denver, CO, USA

5. **Evidence Accumulation and Decision-Making on Networks**
Gulf Coast Consortium for Theoretical and Computational Neuroscience, January 26, 2018
BioScience Research Collaborative, Houston, TX, USA

6. **Science Day**
University of Utah, November 12, 2016
Salt Lake City, UT, USA
Gave poster presentation to middle and high school students and encouraged them to pursue a career in science and mathematics.

7. **A Model of Reversible Vesicular Transport with Exclusion**
Spatially Distributed Stochastic Dynamical Systems in Biology Conference, June 20-24, 2016
Isaac Newton Institute for Mathematical Sciences, Cambridge, UK

8. **Science Day**
University of Utah, November 17, 2015
Salt Lake City, UT, USA
Gave poster presentation to high school students and encouraged them to pursue a career in science and mathematics.

9. **A Frequency-Dependent Decoding Mechansim for Axonal Length Sensing**
SIAM Conference on Applications of Dynamical Systems, May 17-21, 2015
Snowbird Ski and Summer Resort, Snowbird, UT, USA

10. **Delayed Feedback Model of Axonal Length Control**
MBI Axonal Transport and Neuronal Mechanics Conference, November 3-7, 2014
The Ohio State University, Columbus, OH, USA

Professional Service

- Institutional Service for FSU
    1. Biomathematics Graduate Student Selection Committee - 2024 - present
    2. **Chair** of Mathematics Library Committee - 2023 - present
    3. **Chair** of IMB Specialized Faculty Evaluation Committee - 2023
    4. IMB Specialized Faculty Evaluation Committee - 2022 - 2024

5. Mathematics Colloquium Committee - 2022 - 2024
6. Honor Guard - College of Arts and Sciences Convocation - May 2021

- Book Reviews
  1. Goriely, Alain. *The Mathematics and Mechanics of Biological Growth.* Vol. 45. Springer, 2017.
- Reviewer for
  1. *Journal of Theoretical Biology*
  2. *Physical Chemistry Chemical Physics*
  3. *Journal of Mathematical Biology*
  4. *Chaos*
  5. *Physica D: Nonlinear Phenomena*
  6. *ACS Synthetic Biology*
  7. *Physical Review E*
  8. *Mathematical Biosciences*
  9. *Mathematics and Computers in Simulation*
  10. *Physical Review Letters*
  11. *eLife*
  12. *SIAM Journal on Applied Dynamical Systems*

Memberships

1. Society for Industrial and Applied Mathematics (SIAM) (2015-Present)
2. Society for Mathematical Biology (SMB) (2017-Present)
3. American Physical Society (APS) (2019-Present)
4. American Mathematical Society (AMS) (2021 -Present)

Computer Skills

- *Languages*: Java, C++, Python, Matlab, Maple, Mathematica
- *Tools and Applications*: LaTeX, MS Office tools or equivalent
- *Operating Systems*: Windows, OS X, Linux