

James Greene

Department of Mathematics, Clarkson University
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EDUCATION

Ph.D., Mathematics University of Maryland, College Park, MD, USA Thesis: Mathematical models of drug resistance and tumor heterogeneity Advisor: Professor Doron Levy	May 2015
M.S., Mathematics University of Maryland, College Park, MD, USA Advisor: Professor Doron Levy	May 2011
B.S., Mathematics, Magna Cum Laude B.S., Physics, Magna Cum Laude The Pennsylvania State University, University Park, PA, USA	May 2008 May 2008

PROFESSIONAL APPOINTMENTS

Assistant Professor Clarkson University Department of Mathematics	August 2019 – present
Hill Assistant Professor Rutgers University, New Brunswick Department of Mathematics Mentor: Eduardo Sontag	September 2015 – July 2019

OTHER APPOINTMENTS

Core Faculty Clarkson Center for Complex Systems Science Clarkson University	January 2026 - present
Research Associate Del Vecchio Laboratory Massachusetts Institute of Technology	July 2016 – August 2016
Research Associate Center for Quantitative Biology Rutgers University New Brunswick	September 2015 – May 2019
Research Associate Center for Scientific Computation and Mathematical Modeling University of Maryland	May 2012 – May 2015

RESEARCH INTERESTS

I broadly work in the field of mathematical and systems biology, where I apply mathematical techniques to study and solve problems of interest in both biological and medical sciences. Much of my research has focused on the evolution of drug resistance in cancer chemotherapy, but I have also worked on problems related to epidemiology, synthetic biological circuits, collective motion, and statistical modeling. In my work I apply a diverse set of mathematical tools and techniques, including but not limited to ordinary and partial differential equations, control theory, differential geometric methods, stochastic processes, statistics, and machine learning applied to dynamical systems. Almost all of my work is model driven, with a goal of utilizing mathematical techniques to help understand and solve important problems in biology and science at large. I also have a deep interest in undergraduate education related to mathematical biology, and generally fostering collaborations at the interface of mathematics and biology.

RESEARCH GRANTS

FUNDED GRANTS

2024: New York State Department of Environmental Conservation (DEC) Grant

Project title: Milfoil Monitoring and Control

PI: Diana White (Clarkson Mathematics)

CO-PI: James Greene (Clarkson Mathematics)

CO-PI: Stefanie Kring (Clarkson Biology)

Project period: 2024 – present

Amount awarded: \$69,904

2022: NSF REU Site

Project title: Mathematical Biology Team Science (MBioTS) Research Experience for Undergraduates (REU) Program at Clarkson University

PI: James Greene (Clarkson Mathematics)

CO-PI: Susan Bailey (Clarkson Biology)

Project period: Summers 2022 – 2024 (3 years)

Amount awarded: \$324,104

INTERNAL (CLARKSON) AWARDED PROPOSALS

2023: CREST Graduate Research Fellowship Grant

Project title: *Quantifying the Effect of Space on Antibiotic Resistance Evolution*

PI: James Greene (Clarkson Mathematics)

CO-PI: Susan Bailey (Clarkson Biology)

Amount awarded: One year of a funded graduate RA, and \$5,000 for equipment purchases

Note: **Renewed for 2024 year**

2023: David A. Walsh '67 Mini-Conference Grant

Project title: A Mini-Conference on *Incorporating Data and Mathematical Modeling to Understand the Dynamics and Risk Factors in Infectious Diseases: What We Learned from the COVID-19 Pandemic and Beyond*

PI: James Greene (Clarkson Mathematics)

CO-PI: Shantanu Sur (Clarkson Biology)

CO-PI: Sumona Mondal (Clarkson Mathematics)

Amount awarded: \$2,000

2023: Associated Colleges of the St. Lawrence Valley

Project title: Mathematics Conference and Competition of Northern New York (MCCNNY) 2024

PI: Guangming Yao (Clarkson Mathematics)

CO-PI: James Greene (Clarkson Mathematics)

CO-PI: Joel Foisy (SUNY Potsdam Mathematics)

CO-PI: Blaire Madore (SUNY Potsdam Mathematics)

CO-PI: Jesse Clark-Stone (SUNY Canton Mathematics)

CO-PI: Daniel Look (St. Lawrence University Mathematics)

Amount awarded: \$500

UNFUNDED PROPOSALS

2026: Mathers Foundation

Project title: Therapy-Induced Cellular State Transitions and the Control of Drug Resistance in Cancer

PI: James Greene (Clarkson Mathematics)

2026: NYS Center of Excellence in Healthy Water Solutions

Project title: Monitoring and Modeling Large-Scale Invasions of the Aquatic Invasive Eurasian Watermilfoil

PI: Diana White (Clarkson Mathematics)

CO-PI: James Greene (Clarkson Mathematics)

CO-PI: Stefanie Kring (Clarkson Biology)

CO-PI: Allan Gontz (Clarkson Geology)

CO-PI: Bahram Salehi (SUNY ESF)

2025: New York State Department of Environmental Conservation (DEC) Grant

Project title: Good Bay Eurasian Watermilfoil Monitoring and Predictive Modeling

PI: Diana White (Clarkson Mathematics)

CO-PI: James Greene (Clarkson Mathematics)

CO-PI: Stefanie Kring (Clarkson Biology)

CO-PI: Allan Gontz (Clarkson Geology)

2025: NSF Applied Mathematics

Project title: Collaborative Research: A Unified Learning Framework for Deterministic and Stochastic Systems

PI: James Greene (Clarkson Mathematics)

CO-PI: Ming Zhong (University of Houston)

2024: NSF Applied Mathematics

Project title: Collaborative Research: Efficient Learning from High Dimensional Structured Stochastic Systems

PI: James Greene (Clarkson Mathematics)

CO-PI: Ming Zhong (Illinois Institute of Technology)

2023: NSF Applied Mathematics

Project title: Collaborative Research: Control and Learning of Collective Behaviors in Complex Systems of Interacting Agents

PI: James Greene (Clarkson Mathematics)

CO-PI: Ming Zhong (Illinois Institute of Technology)

2023: NSF Emerging Mathematics in Biology (eMB)

Project title: Collaborative Research: Analysis Guided Data Driven Modeling and Control of Collective Motion of Living Matter

PI: Ming Zhong (Illinois Institute of Technology)

CO-PI: James Greene (Clarkson Mathematics)

CO-PI: Siming He (University of South Carolina)

2020: NSF Mathematical Biology

Project title: Collaborative Research: Therapy Optimization: The Impact of Selection Versus Induction in the Evolution of Drug Resistance

PI: Jana Gevertz (The College of New Jersey)

CO-PI: James Greene (Clarkson Mathematics)

CO-PI: Eduardo Sontag (The College of New Jersey)

Note: scored competitive

2019: NSF Mathematical Biology

Project title: Collaborative Research: Therapy Optimization: The Impact of Selection Versus Induction in the Evolution of Drug Resistance

PI: Jana Gevertz (The College of New Jersey)

CO-PI: James Greene (Clarkson Mathematics)

CO-PI: Eduardo Sontag (The College of New Jersey)

Note: scored competitive

2019: Sloan Research Fellowship Proposal

PEER-REVIEWED PUBLICATIONS

- [J1] Dalton, M, Asante-Asamani E, **Greene JM**, 2026. Antigen presenting cells determine response to regulatory T cell therapy in type 1 diabetes, *npj Systems Biology and Applications*, accepted.
- [J2] Dalton, M, Asante-Asamani E, **Greene JM**, 2026. A simple mechanistic model for insulin-glucose-glucagon dynamics and its implications for diabetes management *Mathematical Biosciences and Engineering* **23** (6). <https://doi.org/10.3934/mbe.2026060>
- [J3] Gevertz JL, **Greene JM**, Prosperi S, Comandante-Lou, N, Sontag ED, 2025. Understanding therapeutic tolerance through a mathematical model of drug-induced resistance *npj Systems Biology and Applications* **11**. <https://doi.org/10.1038/s41540-025-00511-3>
- [J4] Poudyal S, Lindquist A, Smullen N, York V, Lotfi A, **Greene JM**, Meysami M, 2024. Unveiling wildfire dynamics: a Bayesian county-specific analysis in California *J* **7**: 3. <https://doi.org/10.3390/j7030018>
- [J5] **Greene JM**, Tadmor E, Zhong M, 2023. The emergence of lines of hierarchy in collective motion of biological systems *Physical Biology* **20**: 5. <https://doi.org/10.1088/1478-3975/acdc79>
- [J6] Meysami M, Kumar V, Pugh M, Lowery ST, Sur S, Mondal S, **Greene JM**, 2023. Utilizing logistic regression to compare risk factors in disease modeling with imbalanced data: a case study in vitamin D and cancer. *Frontiers Oncology* **13**. <https://doi.org/10.3389/fonc.2023.1227842>
- [J7] Dalton M, Dougall P, Amoah Darko FL, Annan W, Asante-Asamani E, Bailey S, **Greene JM**, White D, 2022. Modeling optimal reopening strategies for COVID-19 and its variants by keeping infections low and fixing testing capacity *PLoS One* **17**: 11. <https://doi.org/10.1371/journal.pone.0274407>
- [J8] Gevertz JL, **Greene JM**, Sanchez-Tapia CH, Sontag ED, 2021. A novel COVID-19 epidemiological model with explicit susceptible and asymptomatic isolation compartments reveals unexpected consequences of timing social distancing *Journal of Theoretical Biology* **510**. <https://doi.org/10.1016/j.jtbi.2020.110539>
- [J9] Sadeghi M, **Greene JM**, Sontag ED, 2021. Universal features of epidemic models under social distancing guidelines. *Annual Reviews in Control* **51**. <https://doi.org/10.1016/j.arcontrol.2021.04.004>
- [J10] **Greene JM**, Sanchez-Tapia C, Sontag ED, 2020. Mathematical details on a cancer resistance model. *Frontiers in Bioengineering and Biotechnology* **8**. <https://doi.org/10.3389/fbioe.2020.00501>
- [J11] **Greene JM**, Gevertz JL, Sontag ED., 2019. Mathematical approach to differentiate spontaneous and induced evolution to drug resistance during cancer treatment. *JCO Clinical Cancer Informatics* **3**. <https://doi.org/10.1200/CCI.18.00087>
- [J12] Silva A, Silva MC, Sudalagunta P, Distler A, Jacobson T, Collins A, Nguyen T, Song J, Chen DT, Chen L, Cubitt C, Baz R, Perez L, Gatenby R, Dalton W, **Greene JM**, Sontag ED, Gillies R, Rebatchouk D, Shain KH, 2017. An ex vivo platform for the prediction of clinical response in multiple myeloma. *Cancer Research* **77**: 12. <https://doi.org/10.1158/0008-5472.CAN-17-0502>.
- [J13] Nagaraj VH, **Greene JM**, Sengupta AM, Sontag ED, 2017. Translation inhibition and resource balance in the TX-TL cell-free gene expression system. *Synthetic Biology* **2**: 1. <https://doi.org/10.1093/synbio/ysx005>
- [J14] **Greene JM**, Levy D, Herrada SP, Gottesman MM, Lavi O, 2016. Mathematical modeling reveals that changes to local cell density dynamically modulate baseline variations in cell growth and drug response. *Cancer Research* **76**: 10. <https://doi.org/10.1158/0008-5472.CAN-15-3232>
- [J15] **Greene JM**, Levy D, Fung KL, Souza PS, Gottesman MM, Lavi O., 2015. Modeling intrinsic heterogeneity and growth of cancer cells. *Journal of Theoretical Biology* **367**. <https://doi.org/10.1016/j.jtbi.2014.11.017>
- [J16] Lavi O, **Greene JM**, Levy D, Gottesman MM., 2014. Simplifying the complexity of resistance heterogeneity in metastasis. *Trends in Molecular Medicine* **20**: 3. <https://doi.org/10.1016/j.molmed.2013.12.005>
- [J17] **Greene JM**, Lavi O, Gottesman MM, Levy D, 2014. The impact of cell density and mutations in a model of multidrug resistance in solid tumors. *Bulletin of Mathematical Biology* **76**. <https://doi.org/10.1007/s11538-014-9936-8>
- [J18] Lavi O, **Greene JM**, Levy D, Gottesman MM, 2013. The role of cell density and intratumoral heterogeneity in multidrug resistance. *Cancer Research* **73**: 24. <https://doi.org/10.1158/0008-5472.CAN-13-1768>

CONFERENCE PROCEEDINGS

- [C1] **Greene JM**, Sontag ED, 2022. Minimizing the infected peak utilizing a single lockdown: a technical result regarding equal peaks. *2022 American Control Conference (ACC)*. <https://doi.org/10.23919/ACC53348.2022.9867521>

- [C2] **Greene JM**, Sanchez-Tapia C, Sontag ED., 2018. Control structures of drug resistance in cancer chemotherapy. *2018 IEEE Conference on Decision and Control (CDC)*.
<https://doi.org/10.1109/CDC.2018.8618653>

UNDER REVIEW

- [R1] Fatima R, Imadh AS, **Greene JM**, Almeida B, 2026. Mold surface chemistry and evaporation kinetics govern hydrogel gelation behavior.
- [R2] Dodamgodage S, Senarathna D, Sathiyakumar T, Andreescu S, **Greene JM**, Sur S, Mondal S, 2025. Univariate and interaction effects of risk factors on COVID-19 in the United States during the pre-vaccination period using a negative binomial regression model.
- [R3] Wijenayake C, **Greene JM**, Meysami M, 2026. An adaptive spatio-temporal scan for irregular cluster detection.

PREPRINTS

- [P1] Guo Z, **Greene JM**, Zhong M, 2025. Learning stochastic dynamical systems with structured noise. arXiv. <https://doi.org/10.48550/arXiv.2503.01077>.
- [P2] Gevertz JL, **Greene JM**, Sontag ED, 2019. Validation of a mathematical model of cancer incorporating spontaneous and induced evolution to drug resistance. *bioRxiv*.
<https://doi.org/10.1101/2019.12.27.889444>

IN PREPARATION

- [W1] Sahoo S, Jolly MK, Imadh AS, **Greene JM**, West J, 2026. Mathematical modeling of dose-time response of persister cell populations.
- [W2] de Silva N, Zhong M, **Greene JM**, 2026. Learning environmental and collective dynamics.
- [W3] Guo Z, Greene JM, Zhong, M, 2026. An integrated framework for learning stochastic differential equations.
- [W4] Dias U, Bailey S, **Greene JM**, 2026. A birth-death process with limited nutrients and its implication on mutation dynamics.
- [W5] Ngwa J, Bailey S, **Greene JM**, 2026. A simple model for inferring the impacts of mutation, drift, and selection on populations from evolve and re-sequence experiments.
- [W6] Sheehe K, Mondal S, **Greene JM**, 2026 Quantifying drug synergy in melanoma cell populations: dynamic modeling of time-dependent division and death rates.

SEMINAR AND CONFERENCE PRESENTATIONS

INVITED PRESENTATIONS AT CONFERENCE AND WORKSHOPS

- *A unified learning approach for deterministic and stochastic differential equations* October 2026 (to occur)
 Conference on Complex Systems
 Binghamton, NY, USA
- *Mathematical models of diabetes and the immune system* October 2026 (to occur)
 AMS Fall Central Sectional Meeting
 Duluth, MN, USA
- *Learning environmental and interaction dynamics in collective behavior* July 2026
 SIAM Conference on the Life Sciences
 Cleveland, OH, USA
- *A mathematical model of the immune system to understand response to regulatory T cell therapy in type 1 diabetes* October 2025
 MAA Seaway Sectional Annual Meeting
 Canton, NY, USA
- *Learning both internal and external dynamics in collective motion* September 2025
 Recent Advances in Data-Driven Methods for Time-Evolutionary Systems
 SIAM TX-LA 2025 Conference
 Austin, Texas, USA
- *Understanding therapeutic tolerance through a mathematical model of drug-induced resistance* May 2025
 Society of Mathematical Biology (SMB) Annual Meeting
 Edmonton, Canada

- *Experiences running a math AND biology REU* May 2025
SIAM Conference on Applications of Dynamical Systems
Denver, Colorado, USA
- *Learning methods in collective motion* March 2025
SIAM Conference on Computational Science and Engineering
Fort Worth, Texas, USA
- *Modeling and control of drug resistance in cancer dynamics* May 2024
Biology and Medicine Through Mathematics
Virginia Commonwealth University
Richmond, Virginia, USA
- *Modeling and control of induced drug resistance in cancer chemotherapy* October 2023
Computational modeling of cancer biology and treatment
SIAM New York-New Jersey-Pennsylvania Sectional Meeting
Newark, New Jersey, USA
- *Modeling and learning methods applied to collective motion in biology* August 2023
Data Driven Stochastic Dynamical Systems as Interpretable
Data Science Tools
International Congress on Industrial and Applied Mathematics (ICIAM)
Tokyo, Japan
- *Minimizing the infected peak utilizing a single lockdown: a technical result regarding equal peaks* July 2022
Modeling, Testing, and Control of Epidemic Processes
American Control Conference (ACC)
Atlanta, Georgia, USA
- *Combining modeling and data to understand the effect of induced chemoresistance therapy outcome* March 2021
Verification, Validation, and Uncertainty Quantification in the Medical Sciences
SIAM Conference on Computational Science and Engineering
Fort Worth, Texas, USA (virtual)
- *Drug resistance in cancer: the role of induction* December 2020
Cancer Adaptive Therapy Models (CATMO2020)
- *A novel COVID-19 model reveals unexpected consequences of social distancing strategies* August 2020
Society of Mathematical Biology (SMB) Annual Meeting
Heidelberg, Germany (virtual)
- *Combining modeling and data to understand the effect of induced chemoresistance on therapy outcome* July 2020
Model calibration and uncertainty quantification of cancer treatment models
SIAM Conference on the Life Sciences
Garden Grove, California, USA (virtual)
- *The impact of induced drug resistance in cancer chemotherapy* January 2019
AMS Special Session on Recent Advancements in Mathematical Modeling of Cancer
Joint Mathematics Meetings
Baltimore, MD, USA
- *Control structures in cancer chemotherapy* July 2018
Mathematical Strategies to Overcome Resistance to Anticancer Drugs
Society of Mathematical Biology (SMB) Annual Meeting
Sydney, Australia
- *Induced drug resistance in cancer chemotherapy: identifiability and control* June 2018
Integrative Cell Models for Disease Intervention
Banff, Canada
- *The role of induced drug resistance in cancer chemotherapy* July 2017
Mathematical Models in Biology and Medicine
Vienna, Austria
- *Tumor heterogeneity and its implication in drug resistance* July 2016
Predicting Therapeutic Outcomes using Mathematical
Models of Cancer
SIAM Conference on the Life Sciences
Boston, Massachusetts, USA

- *The cell-cycle and drug resistance: a spatial mechanism* January 2015
Joint Mathematics Meetings
San Antonio, Texas, USA
- *Modeling intrinsic heterogeneity and growth of cancer* September 2014
Workshop 1: Ecology and Evolution of Cancer
MBI Emphasis Year on Cancer and Its Environment
Ohio State University, OH, USA
- *The mathematics of stem cells, drug resistance, and cancer* May 2014
CNSF Annual Exhibition on Capitol Hill
Washington DC, USA
- *Modeling drug resistance in metastatic cancer* January 2014
UMD-NCI Cancer Technology and Epidemiology
Symposium
College Park, MD, USA
- *The effects of cellular density and mutations on a mathematical model of multidrug resistance* August 2013
MBI Workshop for Young Researchers in Mathematical
Biology
Columbus, OH, USA

COLLOQUIUM AND SEMINAR TALKS

- *Understanding therapeutic tolerance through a mathematical model of drug-induced resistance* October 2024
Biology Seminar
Clarkson University
Potsdam, New York, USA
- *Mathematical models and control strategies related to the COVID-19 pandemic and infectious diseases generally* April 2024
Utilizing Data and Mathematical Modeling to Understand COVID-19 Dynamics
David A. Walsh '67 Arts & Sciences Mini-Conference
Clarkson University
Potsdam, New York, USA
- *Modeling and control of drug resistance in cancer dynamics* January 2024
Mathematics Colloquium
University of Rhode Island
Kingston, Rhode Island, USA
- *Induced drug resistance in cancer: modeling and control* July 2023
Summer Undergraduate Research Experience (SURE)
Illinois Institute of Technology
Chicago, IL, USA (virtual)
- *Mathematical models and control strategies related to the COVID-19 pandemic and infectious diseases generally* July 2022
Stochastics+Dynamics+Data Seminars
Illinois Institute of Technology
Chicago, IL, USA (virtual)
- *Mathematical models and control strategies related to the COVID-19 pandemic and infectious diseases generally* May 2022
Interdisciplinary Center for Quantitative Modeling in Biology (ICQMB) Seminar
University of California Riverside
Riverside, CA, USA (virtual)
- *Induced drug resistance in cancer chemotherapy: a control-theoretic perspective* October 2021
Mechanical and Aeronautical Engineering Seminar
Clarkson University
Potsdam, NY, USA
- *Induced drug resistance in cancer: modeling and control* April 2021
Center for Quantitative Biology (CQB) Seminar
Rutgers University, New Brunswick
New Brunswick, NJ, USA (virtual)

- *Drug resistance in cancer: open problems and mathematical approaches* November 2020
Clarkson Mathematics Colloquium
Potsdam, NY, USA
- *Mathematical modeling spontaneous and induced drug resistance in cancer chemotherapy* February 2020
Biology Seminar Series
Clarkson University
Potsdam, NY, USA
- *Cancer and control for undergraduates* February 2019
Mathematics Seminar
University of Dallas
Dallas, TX, USA
- *Cancer dynamics, drug resistance, and control* January 2019
Loyola University Chicago
Mathematics Seminar
Chicago, IL, USA
- *Cancer dynamics, drug resistance, and control* January 2019
Clarkson University
Mathematics Seminar
Potsdam, NY, USA
- *Geometric control of an induced model of drug resistance* November 2018
Kolchin Seminar in Differential Algebra
CUNY, NY, USA
- *Some applications of mathematics to cancer* October 2017
Mathematics Postdoc Colloquium
Rutgers University New Brunswick
New Brunswick, NJ, USA
- *Mathematical model of drug resistance and tumor heterogeneity* March 2016
UPenn Math Bio Seminar
University of Pennsylvania
Philadelphia, PA, USA
- *Drug resistance and cancer: a structured population approach* May 2013
Monroe-Martin Talks
University of Maryland
College Park, MD, USA

OTHER TALKS

- *The effects of spatial heterogeneity on the spread of disease* May 2012
Project Talk
MBI Summer Graduate School on Stochastics Applied to
Biology Systems
Ohio State University
Columbus, OH, USA
- *An omnivore brings chaos* June 2008
Joint Mathematics Meetings
San Diego, CA, USA
- *Scavenger models and chaos* June 2008
Joint Mathematics Meetings
San Diego, CA, USA
- *Scavenger models and chaos* June 2008
Conference on Undergraduate Research in Mathematics
Penn State University
University Park, PA, USA

STUDENT PRESENTATIONS

STUDENT PRESENTATION AND POSTER AWARDS

- **Oral Presentation Award** April 2026

Chamodi Wijenayake (doctoral) — *Data driven spatiotemporal scan (DD-STScan) method*,
Mathematics Conference and Competition of Northern New York

- **Second Place Poster Award** March 2024
Mackenzie Dalton (doctoral) — *Evaluating the importance of glucagon in the insulin-glucose regulatory system*, Boston QSP Summit
- **Oral Presentation Award** March 2024
Uresha Dias (doctoral) — *Dynamics for stochastic interacting particle systems*, Mathematics Conference and Competition of Northern New York
- **Third Prize, Applied Mathematics Section** October 2022
Samuel Lowery and McKayah Pugh (undergraduate) — *A statistical analysis of the effect of vitamin D on cancer incidence and mortality*, JMU Math & Stat SUMS Conference
- **High Scoring Presentation, Undergraduate Mathematics** July 2022
Eileen Yizzi (undergraduate) — *Mathematical modeling of collective behavior in epithelial cells*, Research and Projects Showcase, Clarkson University
- **High Scoring Presentation, Graduate Data Analytics and Statistics** July 2022
Sucharitha Dodamgodage (doctoral) — *COVID-19 in the United States during the pre-vaccination period*, Research and Projects Showcase, Clarkson University

INVITED PRESENTATIONS AT CONFERENCE AND WORKSHOPS (graduate students italicized, undergraduate students indicated with *)

- *Uresha Dias*, Susan Bailey, and James Greene August 2026
Stochastic modeling of bacterial evolution under nutrient limitation (poster)
Joint Statistical Meetings
Boston, MA, USA
- *Ziheng Guo*, James Greene, and Ming Zhong July 2026
Learning drift and noise from observing stochastic dynamics with complex noise
SIAM Conference on the Life Sciences
Cleveland, OH, USA
- *Nipuni de Silva*, Ming Zhong, and James Greene October 2025
Learning interactions in collective dynamics
MAA Seaway Sectional Annual Meeting
Canton, NY, USA
- *Uresha Dias*, Susan Bailey, and James Greene October 2025
Quantifying the effect of space on antibiotic resistance
MAA Seaway Sectional Annual Meeting
Canton, NY, USA
- JasonFred Ngwa*, *Chimaroke Onyeaghala*, Susan Bailey, and James Greene October 2025
Using a statistical modeling approach to quantify the processes driving Parallel evolution in populations of bacteria (poster)
MAA Seaway Sectional Annual Meeting
Canton, NY, USA
- *Uresha Dias*, Susan Bailey, and James Greene July 2025
Quantifying the effect of space on antibiotic evolution (poster)
Society for Mathematical Biology Annual meeting
Edmonton, Alberta, Canada
- *Nipuni de Silva*, *Uresha Dias*, and James Greene March 2026
Learning interaction and environmental forces in collective dynamics (poster)
Emergent Behavior in Complex Systems of Interacting Agents
The Institute for Mathematical and Statistical Innovation (IMSI)
Chicago, IL, USA
- Soleil Demick*, James Greene, and Diana White January 2025
Modeling growth of invasive watermilfoil in a column
Nebraska Conference for Undergraduate Women in Mathematics
Lincoln, NE, USA

- Sabrina Ingram*, Amanda Barlow*, Natalie Dando*,
 Mahfuza Akter, Susan Bailey, and James Greene
Impacts of spatial structure on motility and fitness of antibiotic-resistant *Pseudomonas aeruginosa*
 Joint Mathematics Meeting
 Seattle, Washington, USA
 January 2025
- Sabrina Ingram*, Amanda Barlow*, Natalie Dando*,
 Mahfuza Akter, Susan Bailey, and James Greene
Impacts of spatial structure on motility and fitness of antibiotic-resistant *Pseudomonas aeruginosa*
 SIAM New York, New Jersey, Pennsylvania Sectional Meeting
 Rochester, NY, USA
 November 2024
- Mackenzie Dalton, Emmanuel Asante-Asamani, and James Greene
Evaluating the Importance of Glucagon in the Insulin-Glucose Regulatory System: A Mechanistic Modeling Approach (poster)
 American Conference on Pharmacometrics (ACoP15)
 Phoenix, AZ, USA
 November 2024
- Soleil Demick*, James Greene, and Diana White
Modeling watermilfoil growth using advection equations
 SIAM New York, New Jersey, Pennsylvania Sectional Meeting
 Rochester, NY, USA
 November 2024
- Mackenzie Dalton, Emmanuel Asante-Asamani, and James Greene
Evaluating the Importance of Glucagon in the Insulin-Glucose Regulatory System: A Mechanistic Modeling Approach
 Boston QSP Summit
 Boston, MA, USA
 Note: second place poster award
 March 2024
- Alexander Haywood*, Olivia Varricchione*, Mohammad
 Meysami, Sumona Mondal, Shantanu Sur, and James Greene
Adverse effects as a predictor of tumor response in maintenance therapy of advanced lung cancer by pemetrexed and bevacizumab
 SIAM New York, New Jersey, Pennsylvania Sectional Meeting
 Newark, NJ, USA
 October 2023
- Uresha Dias, Nipuni Senani de Silva Rammini, and
 James Greene
Dynamics and learning for stochastic interacting particle systems (poster)
 SIAM New York, New Jersey, Pennsylvania Sectional Meeting
 Newark, NJ, USA
 October 2023
- Samuel Lowery*, McKayah Pugh*, Vijay Kumar,
 James Greene, and Sumona Mondal
A statistical analysis of the effect of vitamin D on cancer incidence and mortality
 Joint Mathematics Meetings
 Boston, MA, USA
 January 2023
- Samuel Lowery*, McKayah Pugh*, Vijay Kumar,
 James Greene, and Sumona Mondal
A statistical analysis of the effect of vitamin D on cancer incidence and mortality
 JMU Math & Stat: SUMS Conference
 Harrisonburg, VA, USA
 Note: third prize in Applied Mathematics section
 October 2022
- Mackenzie Dalton, Paul Dougall, Frederick L. Amoah-Darko,
 William Annan, Emmanuel Asante-Asamani, Susan Bailey,
 James Greene, and Diana White
Modeling the spread of COVID-19 in response to various surveillance testing strategies
 SMB Annual Meeting
 University of California Riverside
 July 2021

LOCAL CONFERENCES WITH STUDENTS (graduate students italicized, undergraduate students indicated with *)

- Colden Damour*, *, Tirzah Ramsay*, Stefanie Kring, James Greene, and Diana White July 2026
Monitoring Eurasian watermilfoil populations in Goose Bay
 Research and Projects Showcase (RAPS)
 Clarkson University
- JasonFred Ngwa*, James Greene, and Susan Bailey April 2026
Quantifying the process of parallel evolution in populations of *Pseudeomonas Aeruginosa*
 Research and Projects Showcase (RAPS)
 Clarkson University
- *Kelsey Sheehee*, Sumona Mondal, and James Greene April 2026
Quantifying drug synergy in melanoma cell populations
 Mathematics Conference and Competition of Northern New York (MCCNNY)
 Potsdam, NY, US
- *Chamodi Wijenayake*, James Greene, and Mohammad Meysami April 2026
Data driven spatiotemporal scan (DD-STScan) Method
 Mathematics Conference and Competition of Northern New York (MCCNNY)
 Potsdam, NY, US
 Note: oral presentation award
- *Uresha Dias*, Susan Bailey, and James Greene April 2026
Quantifying the effect of spatial structure on antibiotic resistance evolution
 Mathematics Conference and Competition of Northern New York (MCCNNY)
 Potsdam, NY, US
- Hayden Ide*, Rylee Bourgeois*, Stefanie Kring, James Greene, and Diana White July 2025
Monitoring the growth of *Myriophyllum spicatum* in the presence and absence of an herbicide treatment through biomass sampling and environmental variable collection
- *Nipuni de Silva*, *Uresha Dias*, and James Greene July 2024
Dynamics and learning of interacting particle systems
 Research and Projects Showcase (RAPS)
 Clarkson University
- Sabrina Ingram*, Amanda Barlow*, Natalie Dando*, Mahfuza Akter, Susan Bailey, and James Greene July 2024
Impacts of spatial structure on motility and fitness of antibiotic-resistant *Pseudomonas aeruginosa*
 Research and Projects Showcase (RAPS)
 Clarkson University
- Madison Witt*, Brodie Lanoue*, Joseph Tally*, Stefanie Kring, James Greene, and Diana White July 2024
Watermilfoil growth study in northern New York waterways with math modeling
 Research and Projects Showcase (RAPS)
 Clarkson University
- Soleil Demick*, James Greene, and Diana White July 2024
Modeling watermilfoil growth using advection equations
 Research and Projects Showcase (RAPS)
 Clarkson University
- *Uresha Dias* and James Greene March 2024
Dynamics for stochastic interacting particle systems
 Mathematics Conference and Competition of Northern New York (MCCNNY)
 Potsdam, NY, US
 Note: oral presentation award
- *Nipuni de Silva* and James Greene March 2024
Learning for stochastic interacting particle systems
 Mathematics Conference and Competition of Northern New York (MCCNNY)
 Potsdam, NY, US

- *Mackenzie Dalton*, Emmanuel Asante-Asamani, and James Greene March 2024
Evaluating the Importance of Glucagon in the Insulin-Glucose Regulatory System: A Mechanistic Modeling Approach
 Mathematics Conference and Competition of Northern New York (MCCNNY)
 Potsdam, NY, US
- *Lavanya Shri Seplanatham Anjapuli*, Jeremie Fish, Mahesh Banavar, and James Greene July 2023
A SIIRS Model for COVID-19
 Research and Projects Showcase (RAPS)
 Clarkson University
- Alexander Haywood*, Olivia Varricchione*, Mohammad Meysami, Sumona Mondal, Shantanu Sur, and James Greene July 2023
Adverse effects as a predictor of tumor response in maintenance therapy of advanced lung cancer by pemetrexed and bevacizumab
 Research and Projects Showcase (RAPS)
 Clarkson University
- Al-Sadh Imadh*, Saanvi Dhaniyala*, Bethany Almeida, Guangming Yao, and James Greene July 2023
Understanding ECM Stiffness effects on MSC morphology with a convolutional neural net
 Research and Projects Showcase (RAPS)
 Clarkson University
- Eileen Yizzi*, James Greene, and Shantanu Sur July 2022
Mathematical modeling of collective behavior in epithelial cells
 Research and Projects Showcase (RAPS)
 Clarkson University
 Note: [high scoring presentation in undergraduate Mathematics section](#)
- McKayah Pugh*, Samuel Lowery*, Mohammad Meysami, James Greene, Sumona Mondal, and Shantanu Sur July 2022
A statistical analysis of the effect of vitamin D on cancer incidence and mortality
 Research and Projects Showcase (RAPS)
 Clarkson University
- Kathleen Trang*, James Greene, and Shantanu Sur July 2022
Evaluating the effectiveness of anticancer drug candidates by measuring cellular morphodynamic changes
 Research and Projects Showcase (RAPS)
 Clarkson University
- *Sucharitha Dodamgodage*, Stephannie Andreescu (HS student) July 2022
 Sumona Mondal, James Greene, and Shantanu Sur
COVID-19 in the United States during the pre-vaccination period: impact of sociodemographic and socioeconomic factors
 Research and Projects Showcase (RAPS)
 Clarkson University
 Note: [high scoring presentation in graduate Data Analytics and Statistics section](#)
- *Thevasha Sathiyakumar*, Irini Konstantinou*, Christian Bernal*, Sumona Mondal, James Greene, and Shantanu Sur July 2022
Data-centric approach to Rheumatoid Arthritis (RA): exploring the association with socioeconomic and dietary risk factors
 Research and Projects Showcase (RAPS)
 Clarkson University

TEACHING EXPERIENCE

COURSE INSTRUCTOR, CLARKSON UNIVERSITY (2019 – PRESENT)

- *MA131: Calculus 1* Fall 2021, Fall 2022, Fall 2023, Spring 2025
- *MA131S: Calculus 1 (advanced section)* Fall 2025
- *MA321/501: Advanced Calculus 1* Fall 2021, Fall 2022, Fall 2025

- MA322: *Advanced Calculus 2* Spring 2022, Spring 2024, Spring 2026
- MA312/512: *Introduction to Differential Geometry* Spring 2023, Spring 2025
Note: **Course creator (new course to Clarkson University)**
- MA313: *Abstract Linear Algebra* Fall 2024
- MA330: *Advanced Engineering Mathematics* Fall 2019, Fall 2020
- MA514: *Sets and Topology* Fall 2020
- MA521: *Classical Complex Analysis* Spring 2020
- MA525: *Applied Functional Analysis* Spring 2026
- MA533: *Ordinary Differential Equations* Fall 2023, Fall 2024
- MA563: *Applied Dynamical Systems* Spring 2024
- STAT318: *Biostatistics* Spring 2022

SEMINAR INSTRUCTOR, CLARKSON UNIVERSITY (2019 – PRESENT)

- MA725: *Graduate Seminar in Applied Mathematics* Spring 2020, Spring 2024, Spring 2026
- MA739: *Graduate Mathematical Biology Seminar* Fall 2021, Fall 2022, Fall 2023, Fall 2024

OTHER TEACHING, CLARKSON UNIVERSITY (2019 – PRESENT)

- MA401: *Directed Study in Mathematics (Research)* Fall 2022
Undergraduate directed study (2 students) in topology
Undergraduate directed study (1 student) in elliptic curves

INSTRUCTOR, RUTGERS UNIVERSITY NEW BRUNSWICK (2015 – 2019)

- MATH495: *Mathematics of Cancer* Spring 2017, Spring 2018, Spring 2019
Note: **Course creator**
- MATH336: *Dynamical Models in Biology* Fall 2015, Spring 2016, Fall 2016, Fall 2017
- MATH252: *Elementary Differential Equations* Fall 2016, Fall 2017
- MATH388: *Discrete and Probabilistic Models in Biology* Spring 2019
- MATH350: *Advanced Linear Algebra* Fall 2018
- MATH421: *Advanced Calculus for Engineering* Spring 2016

TEACHING ASSISTANT, UNIVERSITY OF MARYLAND (2008 – 2015)

- MATH246: *Introductory Differential Equations* Fall 2008, Summer 2011, Spring 2015
Note: **Lecturer and TA (Spring 2015); Grader (Summer 2011)**
- MATH461: *Linear Algebra for Scientists and Engineers* Summer 2009, Spring 2010, Summer 2010
Note: **Course Chair for summer session (Summer 2010); Grader (Summer 2009)**
- MATH141: *Calculus 2* Spring 2011, Spring 2012
- MATH140: *Calculus 1* Fall 2010
- MATH241: *Calculus 3* Fall 2009
- MATH410: *Advanced Calculus 1* Spring 2009
Note: **Grader**

OTHER TEACHING

- *Immunology and Cancer RIT Organizer* September 2011 – December 2014
Co-organizer, Research Interaction Team (RIT) on mathematical biology
University of Maryland

- *Directed Reading Program*
Mentor, undergraduate students on advanced mathematics topics

January 2012 – May 2015

PROFESSIONAL SERVICE

CONFERENCE AND WORKSHOP ORGANIZATION

- **Co-organizer:** Modeling, learning, and control of collective biological systems July 2026
SIAM Conference of the Life Sciences
Cleveland, OH, USA
- **Co-organizer:** Mathematics Conference and Competition April 2026
Clarkson University
Potsdam, NY, USA
- **Co-organizer:** Emergent behavior in complex systems of interacting agents March 2025
Institute for Mathematical and Statistical Innovation (IMSI)
University of Chicago
Chicago, IL, USA
- **Co-organizer:** Student research in mathematical biology: mechanistic November 2024
modeling and data science approaches
SIAM Sectional Meeting (NY, NJ, PA)
Rochester, NY, USA
- **Co-organizer:** Utilizing Data and Mathematical Modeling to April 2024
Understand COVID-19 Dynamics
David A. Walsh '67 Arts & Sciences Mini-Conference
Clarkson University
Potsdam, New York, USA
- **Co-organizer:** Mathematics Conference and Competition March 2024
Clarkson University
Potsdam, NY, USA
- **Co-organizer:** Computational modeling of cancer biology and treatment October 2023
SIAM Sectional Meeting (NY, NJ, PA)
Newark, NJ, USA
- **Co-organizer:** Data Science for Dynamical Systems (minisymposium) May 2023
SIAM Conference on Applications of Dynamical Systems
Portland, OR, USA
- **Co-organizer:** Mathematics Conference and Competition March 2022
Clarkson University
Potsdam, NY, USA
- **Co-organizer:** Bridging the Gap Between Cancer Modeling and August 2020
Clinical Outcomes (minisymposium)
Society of Mathematical Biology (SMB) Annual Meeting
Heidelberg, Germany (*cancelled due to COVID-19 pandemic*)
- **Co-organizer:** Utilizing Mathematical Models to Understand Tumor Heterogeneity January 2020
and Drug Resistance (minisymposium)

PROFESSIONAL MEMBERSHIPS

- *Society of Mathematical Biology* January 2012 – present
- *Society for Industrial and Applied Mathematics (SIAM)* September 2015 - present
- *American Mathematical Society* January 2012 - present

PAPER REVIEWER

- *American Control Conference*

- *Annual Reviews in Control*
- *Bulletin of Mathematical Biology*
- *Communications Biology*
- *Frontiers Physiology*
- *Journal of Theoretical Biology*
- *Mathematical Biosciences*
- *Mathematical Biosciences and Engineering*
- *Multidisciplinary Digital Publishing Institute (MDPI)*
- *Nonlinear Science*
- *npj Systems Biology*
- *PLOS Computational Biology*
- *Scientific Reports*

ACADEMIC SERVICE

CLARKSON UNIVERSITY

- *Mathematics Graduate Chair* July 2024 - present
- *Graduate Research Council* January 2024 - present
- *Mathematics Graduate Committee* January 2020 - present
 - Assistant for Recruitment (June 2022 – July 2024)
 - Curriculum Review chair (September 2022 – July 2024)
- *Mathematics Hiring Committee Chair* Summer 2025
- *Student Organization Advisory Committee* Fall 2024 - present
 - Math club co-advisor
- *CEASEC Building & Steering Committee* Spring 2025 - present
 - Mathematics representative
- *Co-chair, Mathematics Colloquium Committee* June 2020 – June 2022
- *COMAP Competition Faculty co-advisor* October 2022 - present
- *Mathematics Hiring Committee* Fall 2021
- *SIAM Faculty Advisor* January 2020 – December 2021
- *Mathematics Department Open House Representative* October 2020
- *Putnam Competition advisor* October 2019 – present

GRADUATE THESIS AND DISSERTATION PROPOSAL COMMITTEES

- Uresha Dias June 2026
 - *Quantifying the effect of spatial structure on antibiotic resistance evolution*
- Chimaroke Onyeaghala November 2025
 - *Adaptive evolution in spatially structured heterogeneous environments*
- Sucharitha Dodamgodage May 2025
 - *On the maximum likelihood estimation and goodness-of-fit for the Dirichlet distribution in microbiome compositional analysis*
- Olaoluwa Ogunleye May 2025
 - *Homotopy for multi-objective optimization*
 - **Successfully defended thesis: April 2026**

- Faiza Fatima April 2025
The role of alternative splicing in drought tolerance in the Brassica system
- Nipuni de Silva February 2025
Learning interactions in collective dynamics
Successfully defended thesis: July 2026
- William Annan October 2023
Modeling the spread of retinal detachment and its effects on the dynamics of rod outer segment renewal
Successfully defended thesis: May 2025
- S. H Dinuka Sewwandi de Silva October 2023
Modeling bleb-based chemotaxis in confined eukaryotic cells
Successfully defended thesis: July 2024
- Daniel Fuller February 2023
Inferences on the Dirichlet distribution for differential abundance analysis of bacterial microbiome data
Successfully defended thesis: December 2024
- Dinushani Senarathna November 2022
Order restricted inference to optimize the sample size and power in ANOVA and Regression
Successfully defended thesis: October 2023
- Thevasha Sathiyakumar September 2022
Identifying transitions between collective motion regimes using statistical significance tests of the time-varying persistence homology
Successfully defended thesis: June 2024
- Vijay Kumar July 2022
Application of time series and spatial analysis for accurate Prediction of air quality from low-cost sensor data
Successfully defended thesis: July 2023
- Sathsara Dias June 2022
Tracking of buffet oscillations in transient simulations of a transonic airfoil using sliding window Dynamic Mode Decomposition
Successfully defended thesis: July 2024
- Frederick Amoah-Darko October 2021
A continuous model for microtubule dynamic instability with pausing
Successfully defended thesis: July 2023

STUDENT RESEARCH SUPERVISION

GRADUATE STUDENT RESEARCH SUPERVISION

- Nipuni Senani de Silva Rammini June 2023 – August 2026
Advisor, doctoral student (Clarkson Mathematics)
Thesis: *Learning environmental and collective dynamics*
- Mackenzie Dalton November 2022- May 2025
Co-advisor, doctoral student (Clarkson Mathematics)
Thesis: *Understanding type 1 diabetes through mathematical modeling: insights into glucose regulation and immune dynamics*

- Kelsey Sheehee May 2025 – May 2026
Co-advisor, master's student (Clarkson Mathematics)
Thesis: *Quantifying drug synergy in melanoma cell populations: dynamic modeling of time-dependent division and death rates*
- Uresha Dias September 2022 – present
Advisor, doctoral student (Clarkson Mathematics)
Project: Antibiotic resistance evolution in spatial environments
- Aaptha Saroja June 2025 – present
Co-advisor (Diana White), doctoral student (Clarkson Mathematics)
Project: Dynamics of outer rod segments
- Chamodi Wijenayake August 2025 – present
Advisor, doctoral student (Clarkson Mathematics)
Project: Statistics for spatial clustering methods
- Al-sadh Imadh September 2025 – present
Advisor, doctoral student (Clarkson Mathematics)
Project: Mathematical control of persister cells in cancer
- Sahba Safari June 2026 – present
Co-advisor (Sumona Mondal, Shantanu Sur), doctoral student (Clarkson Mathematics)
Project: Predicting efficacy of drug combinations in cancer
- Nitul Singha June 2026 – present
Co-advisor (Sumona Mondal, Shantanu Sur), doctoral student (Clarkson Mathematics)
Project: Methods of analysis for microbiome data
- Stacy Brenes August 2020 – May 2021
Co-advisor, master's student (Clarkson)
Project title: *An early introduction to cancer mathematics for students in Algebra I and II*
- Andy Cook January 2020 – June 2020
Mentor, masters in Data Analytics (Clarkson)
Capstone project: *Mortality of multiple primary Malignancies*

UNDERGRADUATE STUDENT RESEARCH SUPERVISION

- Tirzah Ramsay (Clarkson University) May 2026 – August 2026
Co-advisor, DEC Watermilfoil grant
Project: *Monitoring Eurasian watermilfoil populations in Goose Bay*
- Colden Damour (Clarkson University) May 2026 – August 2026
Co-advisor, DEC Watermilfoil grant
Project: *Monitoring Eurasian watermilfoil populations in Goose Bay*
- Minh-Ngoc Huynh (Clarkson University) September 2025 – January 2026
Co-advisor, undergraduate research for data science capstone (STAT 488)
Project: *Quantifying variability in rake toss samples to estimate biomass of invasive species in freshwater*
- JasonFred Ngwa (Clarkson University) July 2024 – May 2026
Co-advisor, undergraduate honors student
Project: Quantifying the process of parallel evolution in populations of *Pseudeomonas Aeruginosa*
- Hayden Ide (Clarkson University) May 2025 – August 2025
Co-advisor, DEC Watermilfoil grant
Project: *Monitoring the growth of Myriophyllum spicatum in the presence and absence of an herbicide treatment through biomass sampling and environmental variable collection*

- Rylee Bourgeois (Clarkson University)
Co-advisor, DEC Watermilfoil grant
Project: *Monitoring the growth of Myriophyllum spicatum in the presence and absence of an herbicide treatment through biomass sampling and environmental variable collection*
May 2025 – August 2025
- Amanda Barlow (BYU Idaho)
Advisor, MBioTS REU Scholar at Clarkson University
Project: *The effect of spatial structure on evolution in bacterial populations*
May 2024 – August 2024
- Natalie Dando (Youngstown State University)
Advisor, MBioTS REU Scholar at Clarkson University
Project: *The effect of spatial structure on evolution in bacterial populations*
May 2024 – August 2024
- Soleil Demick (Skidmore College)
Co-advisor, MBioTS REU Scholar at Clarkson University
Project: *Modeling watermilfoil growth using advection equations*
May 2024 – August 2024
- Madison Witt (Clarkson University)
Co-advisor, DEC Watermilfoil grant
Project: *Watermilfoil growth and spread in northern New York*
May 2024 – August 2024
- Brodie Lanoue (Clarkson University)
Co-advisor, DEC Watermilfoil grant
Project: *Watermilfoil growth and spread in northern New York*
May 2024 – August 2024
- Olivia Varricchione (St. Lawrence University)
Co-advisor, MBioTS REU Scholar at Clarkson University
Project: *Adverse effects as a predictor of tumor response in maintenance therapy of advanced lung cancer by pemetrexed and bevacizumab*
May 2023 – August 2023
- Alexander Haywood (Amherst College)
Co-advisor, MBioTS REU Scholar at Clarkson University
Project: *Adverse effects as a predictor of tumor response in maintenance therapy of advanced lung cancer by pemetrexed and bevacizumab*
May 2023 – August 2023
- Al-Sadh Imadh (University of Central Florida)
Co-advisor, MBioTS REU Scholar at Clarkson University
Project: *Understanding ECM Stiffness effects on MSC*
May 2023 – August 2023
- Eileen Yizzi (The College of New Jersey)
Advisor, MBioTS REU Scholar at Clarkson University
Project: *Mathematical modeling of collective behavior in epithelial cells*
May 2022 – August 2022
- Kathleen Trang (The University of Florida)
Co-advisor, MBioTS REU Scholar at Clarkson University
Project: *Evaluating the effectiveness of anticancer drug candidates by measuring cellular morphodynamic changes*
May 2022 – August 2022
- McKayah Pugh (University of Northern Colorado)
Co-advisor, MBioTS REU Scholar at Clarkson University
Project: *A statistical analysis of the effect of vitamin D on cancer incidence and mortality*
May 2022 – August 2022
- Samuel Lowery (Slippery Rock University)
Co-advisor, MBioTS REU Scholar at Clarkson University
Project: *A statistical analysis of the effect of vitamin D on cancer incidence and mortality*
May 2022 – August 2022

- Irini Konstantinou (Clarkson University) May 2022 – August 2022
Co-advisor, NSA REU at Clarkson University
Project: *Data-centric approach to Rheumatoid Arthritis (RA): exploring the association with socioeconomic and dietary risk factors*
- Christian Bernal (California State University) May 2022 – August 2022
Co-advisor, NSA REU at Clarkson University
Project: *Data-centric approach to Rheumatoid Arthritis (RA): exploring the association with socioeconomic and dietary risk factors*
- Samantha Sun (Rutgers University) September 2017 – May 2019
Honor thesis advisor
Thesis title: *Using mathematics to understand the combined effects of Imatinib and Interferon on the treatment of Chronic Myeloid Leukemia*
- Daniel Greenfield (Rutgers University) September 2017 – May 2018
Honors thesis committee
Thesis title: *Applications of an automated virtual screening pipeline for drug discovery*

AWARDS AND HONORS

- Nominated for PHALANX November 2025
- High teaching evaluation (all 5s) June 2020
Received for MA521 (graduate, Classical Complex Analysis)
Spring 2020 semester
- Harold H. Martin Postdoctoral Fellowship September 2015 – June 2019
Department of Mathematics
Rutgers University, New Brunswick
- NCI/UMD Partnership in Cancer September 2012 – December 2014
Technology Fellowship
National Institutes of Health (NIH)
- Research Assistantship June 2011 – September 2012
Department of Mathematics
University of Maryland
- Teaching Assistantship September 2008 – December 2014
Department of Mathematics
University of Maryland
- Jabir Shipley Memorial Award for Outstanding May 2007
Achievements in Mathematics
Department of Mathematics
The Pennsylvania State University
- Faculty Scholarship for Academic Excellence September 2007
The Pennsylvania State University
- National Society of Collegiate Scholars
- Phi Beta Kappa Society

CONFERENCES AND WORKSHOPS ATTENDED

- Control Systems Society (CSS) Day October 2022
IEEE Controls Systems Society (virtual)

- Summer 2020 Workshop in Pathway Modeling June 2020
University of Washington (virtual)
- Northeastern University 2018 Summer Systems Biology Day August 2018
Boston, MA, USA
- Workshop on Mathematical Methods in Cancer Evolution and Heterogeneity June 2017
Columbia University Center for Topology of Cancer Evolution
- The Governor's Conference on Effective Partnering in Cancer Research June 2017
The Interface of Clinical and Translational Science
Institute for Advanced Study, Princeton, NJ, USA
- Frontiers in Mathematical Oncology: Young Investigators Conference April 2017
University of Maryland, MD, USA
- Joshua Lederberg – John von Neuman Symposium: Towards Quantitative Biology December 2015
Institute for Advanced Study, Princeton, NJ, USA
- Modern Perspectives in Applied Mathematics: Theory and Numerics of PDEs May 2014
Bethesda, MD, USA
- Physical Sciences and Oncology Symposium April 2014
NIH Campus, Bethesda, MD, USA
- PIMS IGTC Mathematical Biology Summer School: The Mathematics Behind Biological Invasions May 2013
University of Alberta, Edmonton, Canada
- MBI Summer Graduate School on Stochastics Applied to Biological Systems May 2012
Ohio State University, OH, USA
- Frontiers in Mathematical Oncology: Young Investigators Conference March 2012
University of Maryland, MD, USA