SHAILI MATHUR

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EDUCATION

PhD | ***Biology*** Sept. 2021 – present
Stanford University Stanford, USA
Thesis advisors: Dmitri Petrov and Jonas Cremer

Master of Science | ***Bioinformatics*** Sept. 2019 – June 2021
University of California, Los Angeles Los Angeles, USA
Thesis advisor: Van Savage

Bachelor of Science | ***Computational and Systems Biology & Mathematics (Minor)*** Sept. 2017 – June 2021
University of California, Los Angeles Los Angeles, USA

SCIENTIFIC CONTRIBUTIONS

PAPERS

1. **Shaili Mathur**, Noah A. Rosenberg "All galls are divided into three or more parts: recursive enumeration of labeled histories for galled trees" (2023), *Algorithms for Molecular Biology* Volume 18, 1 doi:10.1186/s13015-023-00224-4

POSTER PRESENTATIONS

1. **Shaili Mathur**, Portia M. Mira, Pamela J. Yeh, Christopher P. Kempes, Van M. Savage. "Allometric Scaling of Antibiotic Efficacy", UCLA QC Bio 4th Annual Retreat, 2018
2. **Shaili Mathur**, Portia M. Mira, Pamela J. Yeh, Christopher P. Kempes, Van M. Savage. "Size Effects on Antibiotic Susceptibility", UCLA Undergraduate Research Poster Day, 2017

TALKS

1. Santa Fe Institute REU: "A priori prediction of Antibiotic Susceptibility across Bacterial Diversity", Santa Fe, NM 2019
2. B.I.G. Summer Undergraduate Research Program: "A Model for Cell-Antibiotic Dynamics across Bacterial Diversity", Los Angeles, CA 2020

RESEARCH EXPERIENCE

Graduate Research Assistant Jan 2021 - present
Stanford University
PhD Student co-advised by Dr. Dmitri Petrov and Dr. Jonas Cremer.

Rotation Student, Rosenberg Lab Sept - Dec 2021
Stanford University
Rotation student supervised by Dr. Noah Rosenberg.

Undergraduate Researcher, UCLA Bruins In Genomics June - Aug 2020
University of California, Los Angeles
Summer undergraduate research supervised by Dr. Van Savage.

Undergraduate Researcher, Santa Fe Institute REU Program June - Aug 2019
Santa Fe Institute
Summer undergraduate research through the Santa Fe Institute Research Experiences for Undergraduates, supervised by Dr. Chris Kempes.

Quantitative Biology Undergraduate Research Assistant Oct 2017 - May 2021
University of California, Los Angeles

Supervised by Dr. Van Savage in the Department of Ecology and Evolution and Department of Biomathematics at UCLA.

Microbiology Undergraduate Research Assistant Oct 2017 - May 2021
University of California, Los Angeles

Supervised by Dr. Pamela Yeh in the Department of Ecology and Evolution at UCLA.

Summer Intern Summer 2015, Summer 2016
National Center for Biological Sciences, Bangalore

Supervised by Dr. Deepa Agashe at the National Center for Biology Sciences, Bangalore.

Honors and Awards

Stanford Graduate Fellowship, Gabilan Fellow
Department-nominated Stanford-wide fellowship; three years of funding

Dean's Honor List
Recognition of high scholastic recognition in any one term at UCLA; all quarters except Spring 2019

UCLA Undergraduate Research Scholars Program 2020
Merit based scholarship to support upperclassmen conducting advanced STEM research projects at UCLA

Whitcome Summer Undergraduate Research Fellowship Summer 2018
Merit based scholarship supporting summer research in ecology and evolutionary biology at UCLA

UCLA Undergraduate Research Fellows Program Winter, Spring 2018
Merit based scholarship supporting students doing STEM research at UCLA

Appointments

UCLA Computational & Systems Biology Interdepartmental Program Advisory Committee 2019-2021
Student Representative

Teaching

Bio 143: Quantitative Methods for Marine Ecology and Conservation Winter 2021
Teaching assistant with Dr. Giulio De Leo

Bio 165: Quantitative Cell Biology: from Molecules to Evolution Winter 2022
Teaching assistant with Dr. Jonas Cremer

Skills and Relevant Coursework

Languages: English (Native); Hindi (Native); Spanish (Beginner)
Programming: Python (NumPy, SciPy, Matplotlib, Pandas); MATLAB; Mathematica; R; Julia; C++; MySQL
Graduate Level Coursework at Stanford:
Introduction to Causal Inference; Topological Data Analysis; Principles of Cell Signalling
Graduate Level Coursework at UCLA :
Bioinformatics Courses (Graduate Level): Statistical Methods in Computational Biology; Machine Learning in Bioinformatics; Algorithms in Bioinformatics; Applied Bayesian Inference
Biomathematics Courses (Graduate Level): Structure, Function and Evolution of Biological Systems; Top Computational Algorithms; Evolutionary Ecology
Undergraduate Level Coursework at UCLA :
Mathematics Coursework (Upper Division Undergraduate Level): Mathematical Statistics; Linear Algebra; Linear and Non-linear Systems of Ordinary Differential Equations; Ordinary Differential Equations; Probability Theory I and II; Stochastic Processes; Mathematical Game Theory; Introduction to Networks; Real Analysis; Complex Analysis; Discrete Mathematics
Computer Science Courses: Data Structures; Algorithms and Complexity; Introduction to Data Mining

Life Science Coursework: Evolutionary Ecology (graduate level); Biological Modeling: Mathematical and Computational Approaches; Cell and Molecular Biology; Genetics; Ecology and Evolution; Physiology and Human Biology
UCLA QCB Collaboratory Technical Workshops: Machine Learning with Python; Advanced Python; Introduction to Modern Statistics Python for Data Science
Online (MOOC) classes: Python for Data Science (Online course through Microsoft on EdX); Relational Databases and SQL (Online course through StanfordOnline on EdX)

Outreach and Service

Stanford Ecology and Evolution Lunch Seminar Series 2022 - current
Organizer

Stanford Biology Department Mentorship Committee 2022 - current
Committee Member

Stanford Biology Department Orientation Committee 2022 - current
Committee Member

Stanford Biology Department Interview Committee 2021 - current
Committee Member

Letters to Pre-Scientists 2019 - 2021
Scientist Pen Pal

Best Friends Animal Society Oct 2019 - current
Volunteer and Foster Los Angeles, USA

Computational and Systems Biology Undergraduate Seminar Series 2-18 - current
Organizer Los Angeles, USA

Thubrahalli Government School Summer, 2019
Volunteer Teacher and Curriculum Developer Bangalore, India

UCLA Undergraduate Research Center 2018
UCLA Undergraduate Research Week Student Champion Los Angeles, USA

UCLA Undergraduate Research Center - Sciences 2018
Bruin Day Student Research Ambassador Los Angeles, USA

UCLA Undergraduate Science Journal 2017
Biological Review Board Member Los Angeles, USA

APSA Dream School Summer, 2016
Volunteer Teacher Bangalore, India