

SHAILI MATHUR

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EDUCATION

PhD | *Biology*

Stanford University

Advised by Dmitri Petrov and Jonas Cremer

Sept. 2021 – present

Stanford, USA

Master of Science | *Bioinformatics*

University of California, Los Angeles

Advisor: Van Savage

Sept. 2019 – June 2021

Los Angeles, USA

Bachelor of Science | *Computational and Systems Biology & Mathematics (Minor)*

University of California, Los Angeles

Sept. 2017 – June 2021

Los Angeles, USA

SCIENTIFIC CONTRIBUTIONS

PAPERS

Shaili Mathur, Noah A. Rosenberg “All galls are divided into three or more parts: recursive enumeration of labeled histories for galled trees”, *Submitted*

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

Stanford University

PhD Student co-advised by Dr. Dmitri Petrov and Dr. Jonas Cremer.

Jan 2021 - present

Rotation Student, Rosenberg Lab

Stanford University

Rotation student supervised by Dr. Noah Rosenberg.

Sept - Dec 2021

Undergraduate Researcher, UCLA Bruins In Genomics

University of California, Los Angeles

Summer undergraduate research supervised by Dr. Van Savage.

June - Aug 2020

Undergraduate Researcher, Santa Fe Institute REU Program

Santa Fe Institute

Summer undergraduate research through the Santa Fe Institute Research Experiences for Undergraduates, supervised by Dr. Chris Kempes.

June - Aug 2019

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 <i>Organizer</i>	2022 - current
Stanford Biology Department Mentorship Committee <i>Committee Member</i>	2022 - current
Stanford Biology Department Orientation Committee <i>Committee Member</i>	2022 - current
Stanford Biology Department Interview Committee <i>Committee Member</i>	2021 - current
Letters to Pre-Scientists <i>Scientist Pen Pal</i>	2019 - 2021
Best Friends Animal Society <i>Volunteer and Foster</i>	Oct 2019 - current Los Angeles, USA
Computational and Systems Biology Undergraduate Seminar Series <i>Organizer</i>	2-18 - current Los Angeles, USA
Thubrahalli Government School <i>Volunteer Teacher and Curriculum Developer</i>	Summer, 2019 Bangalore, India
UCLA Undergraduate Research Center <i>UCLA Undergraduate Research Week Student Champion</i>	2018 Los Angeles, USA
UCLA Undergraduate Research Center - Sciences <i>Bruin Day Student Research Ambassador</i>	2018 Los Angeles, USA
UCLA Undergraduate Science Journal <i>Biological Review Board Member</i>	2017 Los Angeles, USA
APSA Dream School <i>Volunteer Teacher</i>	Summer, 2016 Bangalore, India