

Arjun K. Aditham
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Education

Stanford University

Ph.D. Student, Bioengineering
GPA: 3.927 (Cumulative)

6/2015-Present

University of California, Berkeley

B.S., Bioengineering, with *Honors*
GPA: 3.793 (Cumulative)

8/2011-5/2015

Research Experience

Graduate Student, Prof. Polly M. Fordyce Laboratory

6/2016-Present

Working with high-throughput microfluidic platforms to study transcription factor (TF) and DNA interactions. My main project is to develop a method with which to measure DNA binding across hundreds of protein mutants in tandem. We are using this data to understand which amino acids mediate TF binding affinity and specificity and how they do so.

Funding Awards:

Graduate Research Fellowship, National Science Foundation (2016-2019)
ChEM-H CBI Pre-Doctoral Program (2015)

Undergraduate Research Assistant, Prof. Carolyn R. Bertozzi Research Group

5/2012-5/2015

My work aims to characterize the bacterial cell wall to advance drug development. I am focusing specifically on the cross-links in the cell wall and how they are involved in infection. To do this, I have developed a method to create artificial cross-links in the cell wall using metabolically incorporated chemical reporters. I have also been exploring PG conformation using environmentally sensitive amino acids while cells are under osmotic pressure. I also computationally analyze peptidoglycan labeling in intracellular pathogens, notably *Listeria monocytogenes*. I developed laboratory skills including peptide synthesis, fluorescence microscopy, and microbial culturing.

Publications

- 3.) Le, DD; Shimko, TC; **Aditham, AK**; Keys, AM; Orenstein, Y; Fordyce, PM. Comprehensive, high-resolution binding energy landscapes reveal context dependencies of transcription factor binding. *bioRxiv*, 2017. (Under Review).
- 2.) Siegrist, MS; **Aditham, AK**; Espaillet, A; Cameron, TA; Whiteside, SA; Cava, F; Portnoy, DA; Bertozzi, CR. Host actin polymerization tunes the intracellular growth and division of *Listeria monocytogenes*. *Cell Rep.* **2015**.
- 1.) Siegrist, MS; Whiteside, S; Jewett, JC; **Aditham, A**; Cava, F; Bertozzi, CR. D-Amino Acid Chemical Reporters Reveal Peptidoglycan Dynamics of an Intracellular Pathogen. *ACS Chem. Biol.* **2012**.

Presentations

- 1.) **Aditham, AK**; Siegrist, MS; Espaillet, A; Shieh, P; Cava, F; Bertozzi, CR. Inducing Artificial Cross-links in Peptidoglycan. Saegerbarth Undergraduate Research Fair, UC Berkeley College of Chemistry. **2015**.

Achievements

National Science Foundation Graduate Research Fellowship
Trainee, ChEM-H CBI Pre-Doctoral Training Program
Dean's Honors List, College of Engineering, UC Berkeley

2016-2019

2015-Present

12/2013, 5/2014, 12/2014

Memberships

Advisory Panel, Bioengineering High School Competition (BioEHSC)	3/2017-Present
American Chemical Society	6/2015-Present
Tau Beta Pi-The Engineering Honor Society, UC Berkeley CA-A Chapter	5/2015-Present
Bioengineering Honor Society (BioEHS), UC Berkeley	12/2013-Present

University Activities

Graduate Activities

NSF Application Student Mentor, Stanford Biosciences Student Association (SBSA)	9/2016-Present
Serve as NSF GRFP Application mentor for graduate students. Mentored 1 student in the 2016 and 2017 cycles.	
Volunteer, East Palo Alto Tennis and Tutoring (EPATT)	9/2016-Present
Tutor minority high school students twice weekly in STEM courses. Academic year only.	
Co-coordinator, ChEM-H CBI Summer Seminar Series	7/2017-9/2017
With a fellow ChEM-H CBI trainee, I initiated and co-coordinated a seminar series for CBI students to present and discuss their research projects with fellow CBI trainees. We hosted 2 sessions in the 2017 summer, each featured 2 speakers and was attended by more than 10 other CBI students.	
Teaching Assistant, BioE Bootcamp, Stanford Institutes of Medical Research (SIMR)	2/2017-8/2017
Work in a team of Teaching Assistants for BioE Bootcamp (part of SIMR) for 20 high school students, half of whom are underrepresented demographics in STEM. Duties include advising students on their engineering projects, admissions for incoming class of SIMR students and assisting with various SIMR-wide activities. In 2016, I served as a student mentor and met weekly with teams to discuss project progress. Bioengineering faculty sponsor: Prof. Polly M. Fordyce.	
Teaching Assistant, Department of Bioengineering, Stanford University	9/2016-12/2016
Teaching Assistant for BioE301A, a graduate introductory laboratory course in molecular cloning. Worked with team of other Teaching Assistants during course. My duties included mentoring 2 student teams on separate projects, handling course logistics for reagent ordering. (Instructor: Prof. Michael Z. Lin)	

Undergraduate Activities

Competition Chair, Bioengineering High School Competition (BioEHSC)	12/2014-4/2015
BioEHSC exposes Bay Area high school students to the bioengineering process by having them devise a solution to a medical or human health concern. This competition is run by the Bioengineering Honor Society.	
I led the second iteration of BioEHSC by overseeing a planning committee, planning the BioEHSC budget, coordinating the final symposium, and recruiting judges and undergraduate students to mentor high school students. Under my direction, we recruited reached out to underrepresented demographics in STEM to recruit 80 high school participants, almost doubling our previous enrollment.	
This Competition was featured on the website of the UC Berkeley Department of Bioengineering (Link).	
Design Team Leader, Engineering World Health	8/2012-12/2013, 8/2014-5/2015
Study Group Co-Leader, Bioengineering Honor Society (BioEHS)	1/2013-5/2014, 2/2015-5/2015
Volunteer, Bay Area Scientists in Schools (BASIS)	10/2013-3/2015

Computer Skills

Proficient in MATLAB. Other software: MicrobeTracker, ImageJ, COMSOL Multiphysics, and AutoCAD.