

ARCHANA CHERUKAT

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RESEARCH INTEREST

My research interest primarily lies in Microbiology, Molecular Biology, and Marine Ecology. I aim to continuously better myself through hands-on experiences in molecular techniques to develop research and scientific skills to contribute to future advancements in the mentioned fields of interest.

EDUCATION

AUGUST 2023 – CURRENT

PhD in BIOLOGY, WAKE FOREST UNIVERSITY, NORTH CAROLINA

JULY 2019 – MAY 2023

BACHELOR OF SCIENCE (RESEARCH) IN BIOTECHNOLOGY, SHIV NADAR UNIVERSITY, DELHI NCR

RESEARCH PAPER

Malvika Modi, Menaka Thambiraja, **Archana Cherukat**, Ragothaman M Yennamalli and Richa Priyadarshini. Structure predictions and functional insights into Amidase_3 domain containing N-acetylmuramyl-L-alanine amidases from *Deinococcus indicus* DR1 (Submitted to BMC Microbiology)

TEACHING AND MENTORING

AUGUST 2023 – DECEMBER 2023

Teaching Assistant, BIO150L-Fa-2023, Wake Forest University, Winston Salem, NC

SCHOLARSHIPS, AWARDS AND GRANTS

SHIV NADAR UNIVERSITY SCHOLARSHIP BAND D

Got admission into SNU with a 100% scholarship leading to a 100% tuition waiver.

GRANT FOR OPPORTUNITY OF UNDERGRADUATE RESEARCH

A grant of Rs.30,000 was given for the procession of my research on the novel bacterium

Deinococcus indicus.

DEANS LIST MONSOON 2022

Got the honor of getting onto the Dean's list for the Monsoon Semester of 2022 and got a reward of Rs. 5000 due to being a perfect SGPA holder.

RESEARCH EXPERIENCE

AUGUST 2023- CURRENT

FLOGE LAB, WAKE FOREST UNIVERSITY

I am working in the Floge lab under the guidance of Dr. Sheri Floge on viral-host interactions in the marine environment and their effect on biogeochemistry. More specifically I am looking at how viral infection affects aggregation in cyanobacteria *Synechococcus* and how that in turn affects nutrient cycling.

AUGUST 2022- MAY 2023

UNDERGRADUATE THESIS, SHIV NADAR UNIVERSITY

In my thesis, I continue to work with the novel bacteria *Deinococcus indicus* under the guidance of Dr. Richa Priyadarshini. We are confirming the hydrolytic cleavage function of the amidases we previously characterized and creating site-directed mutants. We are also checking for another putative amidase gene of *D indicus* and its complementation with *E coli* amidases

1ST JULY 2022- 1ST AUGUST 2022

INDUSTRIAL TRAINING, CIPLA LTD

During my summer vacation, I applied for an internship in the microbiology department of the Baddi branch of the 3rd biggest pharmaceutical company in India, i.e., Cipla Ltd. Here I learned many staining techniques, water analysis, and microbe detection tests.

AUGUST 2021- MAY 2022

OPPORTUNITIES FOR UNDERGRADUATE RESEARCH PROJECT, SHIV NADAR UNIVERSITY

In this project, I worked on the functional characterization of amidases of the novel bacteria *Deinococcus indicus* by its Heterologous expression in the *Escherichia coli* system under the guidance of Dr. Richa Priyadarshini. I was able to present my research in front of esteemed scientists at the 8th OUR Conference.

16TH JUNE- 6TH AUGUST 2021

MICROARRAY SUMMER TRAINING

In this training program, my objective was to find Driver Genes in Alzheimer's Disease Using Multiple Tissue Datasets from The Hippocampus Region of the Brain using microarray data.

INTERNSHIPS AND WORKSHOPS

20TH SEPTEMBER – 2ND NOVEMBER 2021

YOUNG CONSERVATIONIST PROGRAMME, WORLD WIDE FUND FOR NATURE

Through this program, I worked as a WWF-India intern. I helped create awareness about the concerns regarding flora and fauna conservation as well as raise funds for this very purpose, gaining the highest honor of Eco Youth Leader.

19TH JULY- 27TH JULY 2021

NATIONAL WORKSHOP ON BIOINFORMATICS: RESOURCES TOOLS AND ITS APPLICATIONS, UNIVERSITY OF DELHI

The workshop conducted by the Department of Botany, Zakir Husain Delhi College, University of Delhi, was great exposure for me to the tools and resources required in my future endeavors in the bioinformatics field of biotechnology.

14TH MAY- 16TH JULY 2019

VOLUNTEER WORK, TAURUS 48 MILITARY VETERINARY HOSPITAL

This experience has acquainted me with the pathogens that affect domesticated animals and the measures to be taken against them. Overall, the work done in the veterinary hospital gave me a sense of purpose and satisfaction.

SKILLS

- Wet lab techniques:

Cloning Techniques (Plasmid isolation, PCR techniques, Digestion, Gel Extraction, PCR purification, Ligation, Transformation), Growth curve experiments, Fluorescence Microscopy, Phase Contrast microscopy, Protein Purification, Western Blotting, cell wall degradation assay

- Dry Lab Techniques:

Primer Design, NCBI BLAST, ChemSketch, ClustalW, Expasy, MultAlin, Windows, Linux, Cytoscape

RELEVANT KNOWLEDGE

- Zoology
- Botany
- Genetics
- Molecular Biology
- Microbiology
- Ecology
- Genomics, Proteomics and Systems Biology

- Immunology
- Bioinformatics
- Probability, Statistics, Elementary calculus
- Organic and Physical Chemistry
- Elementary Physics
- Biotechnology
- rDNA technology