

SWAPNA BODAMPATI

|| sbodampati@leomail.tamuc.edu ||

EDUCATION:

Texas A&M University-Commerce

Jan 2022 – Dec 2023

Master of Science in Chemistry

- Research Area: Biochemistry
- GPA: 3.55/4.00 (Institutional GPA)
- Fellowship: Welch Foundation fellowship, Jai and Nagarkatti scholarship
- Thesis: Regulation of pyrimidine biosynthetic pathway on *Pseudomonas lemonnieri*
- Graduation date: December 15th 2023.

University College of Science, Saifabad, Osmania University

June 2018 - Nov 2020

Master of Science in Physical Organic Chemistry

- Area: Physical Chemistry and Organic Chemistry
- GPA: 8.35/10
- Awards: Two Gold medals

Sarojini Naidu Vanita maha Vidyalaya, Osmania University

June 2015 - May 2018

Bachelor of Science

- Area: Botany, Zoology, Chemistry
- GPA: 91.16%/100
- Awards: Nine gold medals

EXPERIENCE:

Graduate Assistant-Teaching:

Texas A&M University-Commerce, Commerce, Texas January 2021-present

- Organize, prepare, and oversee both upper and lower-level Chemistry laboratories.
- Grade, maintain, and update records of students' lab reports.
- Provide guidance and assistance to students during laboratory experiments and procedures.
- Test the Instruments before the experiment (Spectrophotometer, pH Meter, Centrifuge)
- Assist in grading undergrad Chemistry courses for professors.
- Offer financial support.

Graduate Assistant-Research:

Robert A. Welch Foundation Summer Graduate Research Fellowship, Texas A&M University-Commerce, Commerce, Texas (June-August 2022 and 2023).

- Working on the project with the research advisor and instructing students on the research project.
- Mentor for REU undergraduate and graduate symposium, Summer 2023 and 2022.
- Guide REU students in research methodologies, lab experiment techniques, and laboratory instrument use (Spectrophotometer, autoclave, incubator, orbital shaker, Sonicator).

RESEARCH EXPERIENCE: “West Lab”

Jun 2022 – Dec 2023

Research Advisor: Dr. Thomas West, Ph.D., Department Head and professor, Chemistry

Location: Texas A&M University, Commerce, TX.

Title: **Regulation of the pyrimidine biosynthetic pathway in *Pseudomonas lemonnieri***

- The project mainly focuses on investigating the influence of pyrimidine supplementation on the pyrimidine biosynthetic enzyme activities in the bacterium *Pseudomonas lemonnieri* ATCC 12983 to determine whether their enzyme synthesis is affected by the addition of exogenous pyrimidine bases.
- Bacterial cells were grown in a minimal medium containing 0.4% glucose or sodium succinate as a carbon source and either 50 milligrams/liter uracil or orotic acid.
- The wild-type strains underwent mutagenesis revealing two mutations in the pathway. OPRTase or OMP decarboxylase activity was observed to be deficient in the cell extracts of individual mutant strains.
- Characterization of the uracil requiring mutant strain's growth on solid glucose or succinate minimal medium revealed that either cytosine or uridine could also meet the pyrimidine auxotrophy of the strains.
- The mutant strains were able to grow in the uracil medium and were subsequently subjected to a 1-2 hour period of starvation by depriving them of uracil to assess the regulation of the pathway.
- The regulation of the known regulatory enzyme ATCase activity in vitro in *P. lemonnieri* was determined with the K_m value for L-aspartate being and carbamoyl phosphate. The study focused on the inhibition of ATCase activity in the presence of nucleotide effectors. The highest inhibition occurred in the presence of 5 mM PP_i , AMP, ADP, UMP, GMP, GTP, CMP, and CTP.
- In conclusion, this investigation demonstrates that the pyrimidine biosynthetic enzyme synthesis and transcarbamoylase activity were regulated in *P. lemonnieri*. Overall, this study provides new information regarding the regulation of pyrimidine biosynthesis by pyrimidines and related compounds in *P. lemonnieri*.
- A thesis has been submitted and is in the final review process with ProQuest.
- The Welch Foundation funded the research for the summer.

PRESENTATIONS:

- Isolation and characterization of a bacterial mutant strain deficient for the pyrimidine biosynthetic enzyme orotate phosphoribosyltransferase
Oklahoma City, Oklahoma | Nov 15-18, 2023
Topic: Presented the poster on the research work at the ACS SWRM.
- Diverse regulation of aspartate transcarbamoylase in taxonomically different *Pseudomonads*
Dallas College, North Lake campus | November 8, 2023
Topic: Invited as a speaker for STEM Day and co-presented on the research work experience gained and represented Texas A&M University-Commerce.
- Regulation of pyrimidine biosynthesis in *Pseudomonas lemonnieri*
Texas A&M University-Commerce | April 11, 2023
Topic: Presented a poster on the research project at the 2023 Annual Research Symposium at Texas A&M University-Commerce.
- Regulation of pyrimidine biosynthesis in *Pseudomonas lemonnieri*
Texas A&M University-Galveston | March 1-3, 2023
Topic: Presented a poster on the research project at the 2023 Pathways Research Symposium at Galveston.
- Regulation of pyrimidine biosynthesis in *Pseudomonas lemonnieri*
Baton Rouge, Louisiana | November 6-8, 2022
Topic: Presented a poster on the research project at the ACS SWRM Conference

PROFESSIONAL CERTIFICATES:

- I am currently taking an online course from Coursera on Writing in Sciences offered by Stanford University to develop writing skills useful for my thesis.
- Biosafety Retraining Course from a Collaborative institutional training initiative (CITI program) in 2023 which is a required course set by the TAMUC institution for students conducting research in labs and handling Biohazards.
- Basic biosafety training which is training for investigators, staff, and students handling Biohazards stage-1 from CITI program in 2022.
- Introduction to biosafety course from the CITI program in 2022 which is a required course set by the TAMUC institution for students conducting research in labs and handling Biohazards.
- Responsible Conduct of Research which is a physical science responsible conduct of research course 1 from the CITI program in 2022 which is a required course set by the TAMUC institution for students conducting research in labs.
- Advanced Chemistry from the University of Kentucky an online course on Coursera focuses on standard chemistry topics
- 3D SARS-CoV-19 Protein Visualization with Bio python guided project that helped learn a creative interactive 3D model and Data manipulation with Bio python.
- Programming foundation- Fundamentals of Python offered by LinkedIn learning online in 2021.

SKILLS:

- Technical Skills: Proficiency in Microsoft Office suite (including MS Word, MS Excel, MS PowerPoint), Data entry, and Python programming (Basics).
- Time management and prioritization: A completed research project within the confines of a rigorous two-year master's program.
- Mentoring and training: Actively participated in REU Symposiums, contributing to mentoring and training.
- Problem-solving and critical thinking: Demonstrated the ability to troubleshoot issues, such as bacterial growth problems in given conditions, by promptly identifying and rectifying the problem through medium adjustments.
- Adaptability: Successfully adapted to the nuances of a new culture and environment upon arrival in the United States.
- Verbal and written communication: Poster writing, collecting data, report drafting, thesis writing, and delivering presentations.
- Research skills: Data analysis, report generation, and data interpretation, literature reviews.
- Language proficiency: English, Hindi and Telugu.

AWARDS & ACHIEVEMENTS:

- Received the Welch Foundation Graduate Fellowship for the research projects 2022 and 2023.
- Awarded Jai & Susan Nagarkatti Fellowship Endowment for the fall 2022 & 2023 and spring 2023 & 2024 semesters.
- Awarded two gold medals for securing highest marks in MSC Chemistry & MSC-Physical Organic Chemistry Specialization from the Hon'ble Governor of Telangana State; Lieutenant Governor of Puducherry and Chancellor of Osmania University Dr. TAMILISAI SOUNDARARAJAN and Dr. G. SATEESH REDDY Secretary, Department of Defense R&D, Chairman of DRDO at 81st Convocation of Osmania University, India 2021.
- Received Cash prize from Kadiyam Srihari Garu, Former Deputy Chief Minister of Telangana state, India, and received a total of 9 Gold Medals & and 5 Cash prizes for the three academic years of BSC.

VOLUNTARY SERVICES:

- Community building is an opportunity for international students to meet resident communities through multicultural connections at the university (2023).
- Trained as an NCC cadet for three years and attended ATC (PRE RDC 1) camps at Bison Polo Grounds Secunderabad during my undergraduate.
- I participated in the White Cane Walk conducted by Friendly Environment for Disabled (FED) in 2016.
- Participated in Keerthi Kiranalu conducted by the Society for Training Awareness Recruitment & Social Services, a voluntary service extended towards the initiative aimed at children, youth, and community service in 2015.