SIVA NAGA SAI DAMARAJU

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Education

Ph.D. in Biochemistry and Molecular Biology **Aug 2024 – Present**
Michigan State University (MSU), Michigan, USA
3.8/4.0 CGPA (to date)

Master of Science in Plant Biology and Biotechnology **Oct 2021 – Jul 2023**
University of Hyderabad (UoH), Telangana, India
9.45/10.0 CGPA, Gold Medalist

Bachelor of Science in Botany, Zoology, and Chemistry **May 2018 – Aug 2021**
Sir C.R. Reddy Autonomous College, Adikavi Nannaya University, Andhra Pradesh, India
9.72/10.0 CGPA, Gold Medalist

Research Experience

Project Assistant **Jul 2023 – Jul 2024**
University of Hyderabad, India
Project Title: Unravelling the Mechanism of Nonphotochemical Quenching Dynamics in *Chlamydomonas reinhardtii* Under Abiotic Stress

- Investigated the molecular basis of nonphotochemical quenching (NPQ) as a critical photoprotective mechanism under abiotic stress conditions.
- Explored the dynamics of NPQ components in *Chlamydomonas reinhardtii*, focusing on photosynthetic efficiency and stress-induced structural reorganization of the thylakoid membrane.
- Analyzed changes in light-harvesting complexes and protein expression associated with thylakoid membrane adaptation.
- Generated insights into photoprotection and lipid remodeling mechanisms through confocal microscopy, PAM fluorometry, and HPLC-based pigment analysis.

Master's Dissertation **Jun 2022 – May 2023**

University of Hyderabad, India

Project Title: Molecular Characterization of Cyclic Electron Transport Mutants (*pgr5* and *pgrl1*) of *Chlamydomonas reinhardtii* Under Salt Stress

- Investigated the impact of mutations in cyclic electron transport (CET) pathways on photosynthetic adaptation under salinity stress.
- Examined physiological responses, including photosynthetic efficiency, thylakoid supercomplex stability, and protein expression in mutant strains (*pgr5* and *pgrl1*).
- Demonstrated the differential regulation of the LHCSR3 protein in maintaining photoprotection via nonphotochemical quenching under salt stress.
- Utilized advanced spectroscopy and microscopy techniques to investigate thylakoid membrane organization and CET-related protein expression.

Awards and Honors

Fellowships and Exams:

1. CSIR UGC (2023): Qualified Junior Research Fellowship and Lectureship Exam.
2. DBT Junior Research Fellowship (2023): Qualified for Junior Research Fellowship.
3. GATE – XL (Life Sciences) and BT (Biotechnology) (2023): Qualified for Junior Research Fellowship.

Medals and Scholarships:

1. KLN Reddy Medal (2024): Gold Medal for academic excellence in master's degree.
2. Kottapalli Narasayya Medal (2024): Gold Medal awarded for securing the highest grade in a master's degree.
3. Prof. Birbal Sahni Medal (2024): For excellence in the fourth semester of the master's degree.
4. Prof. Toppur Seethapathy Medal (2023): Awarded for academic excellence in the third semester of master's degree.
5. Prof. Sipra Guha-Mukherjee Medal (2023): Recognized for academic excellence in the second semester of master's degree.
6. Gold Medal (2022): Awarded for securing the first position in the bachelor's program.
7. Desodharaka Educational Endowment Scholarship (2020): Recognized for exceptional performance in Chemistry during undergraduate studies.
8. Dr. VVG Tilak Memorial Scholarship (2020): Awarded for outstanding overall academic performance in the undergraduate program.
9. Sri Kakarla Raghavendra Rao Memorial Scholarship (2020): Given for consistent excellence and securing top grades in multiple disciplines.

10. Smt Rambha Rajaratnam Memorial Scholarship (2020): Honored for significant academic excellence and leadership contributions.
11. Kalagara Venkata Ratnam – Mohd Aslam Educational Trust Scholarship (2020): Acknowledged for excellence in public speaking and effective communication skills.
12. Gutti Sri Rama Rao Educational and Charitable Trust Scholarship (2019 & 2020): Awarded for being the best overall performer during undergraduate studies.

Conferences and Workshops

1. Oral Presentation at the Plant Science Graduate Student Research Symposium, Michigan State University, 2025.
2. Poster Presentation at the 18th Midwest Conference on Protein Folding, Assembly, and Molecular Motions, University of Notre Dame, 2025.
3. Research Personnel at the International Workshop on Chloroplast Bioenergetics, University of Hyderabad, 2024.
4. Poster Presentation at the International Conference on Current Trends and Future Prospects of Plant Biology (CTFPPB), University of Hyderabad, 2023.

Professional Skills

Laboratory Techniques:

- Nucleic acid isolation, plasmid isolation, PCR (RT-PCR, qRT-PCR).
- SDS-PAGE, Western blotting, BN-PAGE.
- Cell culture, Microscopy (Confocal and TEM).
- HPLC, Spectroscopy (UV-Vis, CD, and Raman), PAM fluorometry, Handy PEA, and Hyperspectral Imaging.

Bioinformatics:

- Primer design and phylogenetic analysis.
- Molecular docking and MD simulations.
- Basics of R programming and Python.

Leadership and Volunteer Experience

President of Prof. Ramdeo Misra Nature Club, Sir C.R. Reddy College **2020 – 2021**
Led community outreach initiatives to promote awareness of wildlife conservation and sustainability.

Volunteer Member in National Service Scheme (NSS) **2019 – 2020**
Contributed to environmental cleanup drives and educational programs in rural areas.