




## Mahamaya Biswal

Postdoctoral Scholar, Molecular and Cellular Physiology

 NIH Biosketch available Online

 Curriculum Vitae available Online

### Bio

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#### BIO

Mahamaya is a postdoctoral researcher in the Department of Molecular and Cellular Physiology at Stanford University, where she specializes in Cellular and structural biology with a focus on membrane protein biogenesis, quality control, and the development of innovative nanobody technologies. Her research integrates advanced cryo-electron microscopy (cryo-EM), cell biology, and nanobody engineering to unravel the mechanisms governing the assembly and maturation of membrane protein biogenesis factor hubs with a focus on Voltage gated ion channels as a model substrate.

Dr. Biswal's scientific journey began with an integrated M.Tech in Biotechnology degree from D.Y. Patil University, India, where she conducted foundational research on bacterial persister cell formation at BARC and characterized breast cancer proteins ZBRK1 and BRCA1 at ACTREC,. After spending a brief time in biotech industry at Yashraj Biotechnology Ltd., Mumbai, optimizing purification pipelines for cancer antigens used in diagnostic kits and facilitating technology transfer from R&D to manufacturing, she moved to US to join UC Riverside's PhD program under Department of Biochemistry and supervision of Dr. Jikui Song. She made significant advances in understanding the structural dynamics of SARS-CoV-2 proteins. Notably, she solved the X-ray crystal structure of the NSP7-8 complex, a key cofactor for the viral replicase, and also elucidated the interaction between the viral nucleocapsid protein and human G3BP1. Her doctoral and postdoctoral work has also contributed to studies on viral immune evasion, including the structural basis for STAT2 antagonization by DENV2 NS5.

At Stanford, Dr. Biswal has expanded her expertise to the structural and functional study of G protein-coupled receptors (GPCRs) and currently focusing on gaining mechanistic insights on Membrane protein biogenesis factor hubs by combining cell biology and structural biology expertise. She is also developing nanobody libraries targeting synaptic vesicles and bacterial death effectors for in situ tomography and potential therapeutic applications respectively. Dr. Biswal is a committed mentor, having supervised graduate and undergraduate students, and is dedicated to fostering diversity and inclusion in science through active involvement in organizations such as AWIS, BioAIMS, and BSS (India). Her scientific contributions have been recognized with honors including the HEERF Dissertation Year Fellowship, the Mary K. and Randolph T. Wedding Prize, and best poster awards at UC Riverside. Dr. Biswal's long-term vision is to lead a research program that translates structural insights into therapeutic strategies for neurological and infectious diseases, advancing both scientific knowledge and the next generation of scientists.

#### INSTITUTE AFFILIATIONS

- Member, Maternal & Child Health Research Institute (MCHRI)

#### HONORS AND AWARDS

- Best Poster Presentation Award, University of California Riverside (Fall 2018)
- Mary. K. Randolph Wedding Prize, University of California Riverside (Fall 2021)
- HEERF Dissertation Year fellowship, University of California riverside (Winter 2022)

## PROFESSIONAL EDUCATION

- Ph.D., University of California Riverside , Biochemistry and Molecular Biology (2022)
- M.Tech, D.Y Patil University , Biotechnology (2013)

## STANFORD ADVISORS

- Tino Pleiner, Postdoctoral Faculty Sponsor

## Research & Scholarship

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## LAB AFFILIATIONS

- Georgios Skiniotis, Skiniotis Lab (7/17/2023 - - 7/16/2024)