

Emerging Trends in Structural Biophysics: Integrating Structure, Dynamics and Function (CETSB 26)

Organized by
Department of Biotechnology,
National Institute of Technology Warangal



WEBSITE



cetsb26@nitw.ac.in



CONTACT

About the Conference

Structural biophysics is shifting from a static view of biomolecules toward an integrated understanding of their structure, dynamics, and function. Advances in dynamic structural biology—through techniques like time-resolved crystallography, NMR spectroscopy, cryo-EM, and molecular dynamics simulations—highlight the importance of molecular motions in biological mechanisms and drug discovery. At the same time, integrative and hybrid methods combining multiple experimental approaches are enabling the study of large, flexible, and transient biological assemblies with unprecedented detail.

The field is also being transformed by machine learning (ML) and artificial intelligence (AI), with breakthroughs like AlphaFold redefining structure prediction and data analysis, though critical interpretation remains essential. Additionally, a new understanding of allosteric networks and energy landscapes reveals that protein function often arises from shifts across ensembles of conformations rather than discrete states. This expanded view is reshaping research priorities, training needs, and therapeutic strategies, urging academicians to integrate dynamic, multi-method, and computational perspectives into modern structural biophysics education and scholarship.

This conference will serve as a vital platform to explore these emerging trends, equipping researchers, educators, and students with the knowledge and tools needed to navigate and lead in this evolving landscape. Through discussions, and expert insights, participants will gain a deeper appreciation of how dynamic, multi-method, and computational approaches are redefining the future of structural biophysics.

About NIT Warangal

National Institute of Technology Warangal (NIT Warangal), established in 1959, is one of India's premier engineering institutions. Located in Telangana, it was the first in the chain of NITs and has a rich legacy of academic excellence, research innovation, and vibrant campus life. Known for its strong programs in engineering, sciences, and management, NIT Warangal consistently ranks among the top technical institutes in the country. The campus is renowned for its lush greenery, state-of-the-art facilities, and an active student community that fosters holistic development.

Warangal is known for its rich historical and cultural heritage. It is situated at a distance of 190 km from Hyderabad airport. Warangal is well connected by rail and road. National Institute of Technology, Warangal campus is 2 km away from Kazipet railway station and 12 km away from Warangal railway station.

About Department of Biotechnology

The Department of Biotechnology at NIT Warangal is a premier center for innovation, research, and academic excellence, offering B.Tech, M.Tech, and Ph.D. programs in Biotechnology. Department of Biotechnology established in 2006 with the B.Tech in Biotechnology program under the TEQIP initiative, the department has continually expanded its academic offerings. The M.Tech program was introduced in 2021, and the Ph.D. program began in 2008. Our curriculum is meticulously crafted to meet the ever-evolving demands of the biotechnology industry and is regularly updated to align with the latest advancements.

With 20 dedicated faculty members specializing in diverse domains of biotechnology, the department fosters a vibrant academic and research environment. Our state-of-the-art laboratories provide students with hands-on experience and access to cutting-edge technologies, ensuring their readiness for academic, research, and industrial challenges.

The department has successfully executed numerous research projects and currently manages 10 ongoing research projects, funded by prominent agencies like DBT, DST, ICMR, and CSIR, under the Government of India. We actively support Research Associates through funding from various agencies and also undertake consultancy projects for industries, bridging the gap between academia and real-world applications.

Important dates

Abstract Submission Starts	15.10.2025
Abstract Submission Deadline	15.12.2025
Notification of abstract acceptance	24.12.2025
Registration Starts	01.11.2025
Registration Deadline	04.01.2026

Registration details

Students (Under- & Post-graduate)	₹1700/-*
Research scholars (PhD/Project/JRF/SRF)	₹3000/-*
Post-doctoral Fellows	₹4000/-*
Faculties/Scientists	₹6000/-*
Industry Professionals	₹10000/-*

(*18% GST applicable)

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