



**RV College of
Engineering®**



CENTRE OF EXCELLENCE COMPUTATIONAL GENOMICS

ESTABLISHED AND FUNDED BY

Department of Biotechnology, Government of India
Indian Council of Medical Research (ICMR), Government of India
Ministry of Electronics and Information Technology, Government of India
Department of Science and Technology (DST), Government of India
NVIDIA
IonQ
Rashtreeya Sikshana Samithi Trust (RSST)

The Centre of Excellence in Computational Genomics (CoE-CG), established in January 2018, is a pioneering institution dedicated to advancing the field of computational biology. Under the visionary leadership of Dr. Vidya Niranjana, CoE-CG aims to provide innovative and efficient solutions to the scientific community, particularly in the realms of agriculture and healthcare. The centre emphasizes skill development and training for students, empowering them to enhance their research capabilities. With a remarkable funding of over 14.6 crores, CoE-CG has achieved significant milestones, including 156 publications and numerous collaborations with esteemed institutions. Committed to fostering a collaborative and interdisciplinary environment, the centre is at the forefront of cutting-edge research and technological advancements in genomics, bioinformatics, and related fields, driving impactful discoveries that address real-world challenges.

Vision : To frame a robust facility in computational biology to provide efficient solutions to the research community

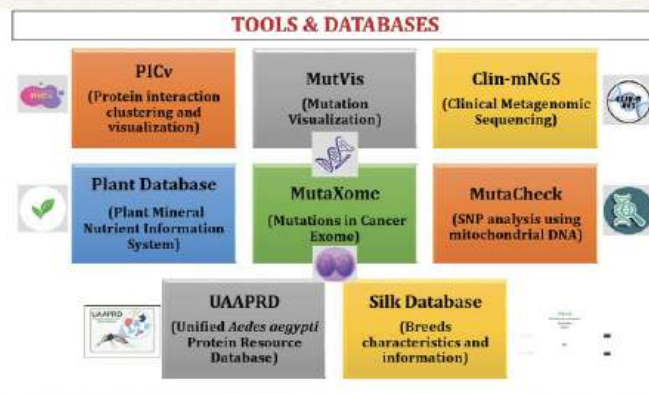
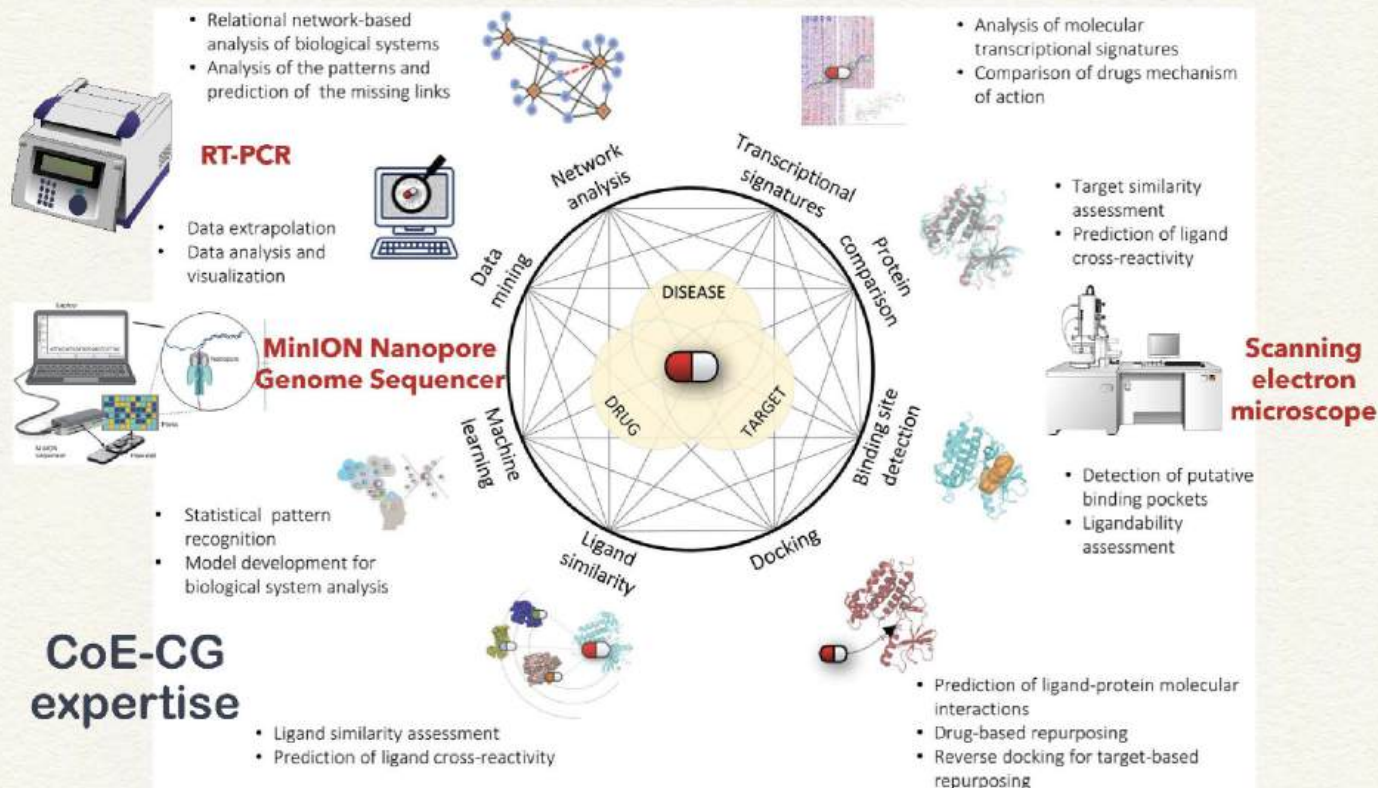
Mission : To provide skill development training to students leading to enhanced research ability. An integrated base to provide solutions in agriculture and healthcare research sectors.

Research Themes

1. **Metagenomics and Antimicrobial Resistance:** Exploring microbial diversity and functional profiling, and sustainable agricultural practices. Developing automated workflows for identifying AMR hotspots, utilizing clinical metagenomic pipelines for pathogen detection, and investigating antifungal agents through rice fermentation.
2. **Genomics and Biomarker Discovery:** Conducting comprehensive genomic analyses to identify novel biomarkers for early diagnosis of various cancers and other health conditions, leveraging proteogenomic approaches.
3. **Drug Discovery and Development:** Focusing on small molecule design for conditions like cystic fibrosis, drug repurposing to combat antimicrobial resistance, and nutritional interventions for telomere stability.
4. **Artificial Intelligence and Machine Learning:** Applying AI/ML techniques for cancer predictions, analysis of cancer exomes, and developing predictive models for ligand binding affinities in drug discovery.
5. **Quantum Computing:** Exploring the application of quantum computing in computational biology, including comparative analyses of variational quantum eigensolver for peptide folding and employing quantum algorithms to enhance the accuracy of density functional theory calculations in drug discovery.



RV College of Engineering®



For further details contact:
Dr Vidya Niranjana, HoD, Department of Biotechnology,
vidya.n@rvce.edu.in