

# Dr. Vidya Niranjana, Professor

| Dr. Vidya Niranjana, Professor |                                                                 |          |
|--------------------------------|-----------------------------------------------------------------|----------|
| Educational Qualification      | MSc, PhD                                                        |          |
| Experience                     | Teaching                                                        | 22 Years |
|                                | Industrial                                                      | 10 Years |
|                                | Research                                                        | 31 Years |
| Area of Interest               | NGS Data Analysis, Structural Bioinformatics and Drug Discovery |          |
| Date of joining RVCE           | 19-09-2013                                                      |          |
| Email ID                       | vidya.n@rvce.edu.in                                             |          |



## Project Guided:

Number of UG projects guided : 78

Number of PG projects guided : 50

Number of Ph.D guided : 06

Number of Ph.D guiding : 05

MS By Research Guiding: 01

Number of Post DOC mentoring: 01

## Publications:

National Journal :10

National Conference : 04

International Journal: 107

International Conference: 19

## National Journal:

1. **V Niranjana**, A Malini. Antimicrobial resistance pattern in *Escherichia coli* causing urinary tract infection among inpatients. The Indian journal of medical research. 2014, 139 (6), 945.

2. M.S. Vijayabaskar, **Vidya Niranjana** and Saraswathi Vishveshwara. GraProStr—graphs of protein structures: a tool for constructing the graphs and generating graph parameters for protein structures. The Open Bioinformatics Journal.2011.(5)53-58.
3. **V Niranjana**, R Mahmood, Kamaljeet Kaur Arpit Saxena, MM Ravikumar, A Bhaskar, M Thiagarajan, S Samundeeswari, MZ Shaikh, SF Kodad, BC Jinaga, Nagaratna P Hegde, IV Muralikrishna, KV Chalapatirao, Shivani Gupta, KS Patnaik, KS Pandya, SK Joshi, P Manoj, NS Banerjee, P Ravichandran. Studies On Human X-Chromosomal Disorder. Journal of Theoretical & Applied Information Technology.2008, 4(5), 2008/5/1.
4. **Niranjana.V**, R.Mahmood, M.Balamurugan, Nitesh Kumar Roy, Subho Ghosh. Analysis of plasma proteins encoded by the X chromosome. Journal of Theoretical and Applied Information Technology.2008 pp 31-55.
5. **V. Niranjana**, R. Mahmood, Arpit Saxena and A. KalaiVani. UTR Mutation Analysis. Journal of Computational Intelligence in Bioinformatics.2008.1(1) pp. 55-63.
6. **Niranjana.V**, Mahmood.R, B.A.Rahiman, Jayaram Reddy, Stanley A, Novel Algorithm For Predicting Pseudo Genes In Human Xq22.1 Chromosomal Region, Biovistas 2006 Feb; Vol-1.
7. **Niranjana.V**, Mahmood.R, B.A.Rahiman, Jayaram Reddy,K.Palaniappan Sivakumar.D, A Study Of Apg4a And Its Role In Autophagy Using Bioinformatics Approach, Biovistas 2006 Feb; Vol-1.
8. **Vidya. N**, Mahmood. R,Shivakumar. D and Alex. S (2006) Prediction of 3D-structure of Autophagin 2. (Structure registered) Protein Databank, ID 5o. 2FUY.
9. **Niranjana, V.**; Rajesh, R.; Pandian, J.S.; Prathap, K. Structure of thioredoxin peroxidase 1 protein of filarial parasites. -. PDB ID - 2A5N.
10. **Vidya, N**, Rajesh, R.; Prathap, K. Insilico 3d modeling of gamma-hemolysin of *Staphylococcus aureus* bacteria.- PDB ID – 2ERN.

#### National Conference:

1. Karishma Kapoor and Vidya Niranjana “Integrated transcriptomic and proteomic analysis to study cells” “Genomics In Health And Diseases” (GHD, 2014), at Central Research Institute of Unani Medicine (CRIUM), A. G. Colony road, Erragadda, Hyderabad, India on August 22nd and 23rd, 2014.
2. Priyanka Premnath, K B Ramesh ,Vidya Niranjana, Mallikarjunaswamy, Puttaiah “Biomarkers for Prognosis and Early Diagnosis of Rheumatic Arthritis.
3. Rheumatic arthritis Disease” National Conference n research challenges in power control communication and instrumentation leading to sustainable technologies (NCPCCI-2015).
4. Varna Prasad and Vidya Niranjana, MatQC- Matlab tool for qualitycontrol of NGS data. 7th National Symposium cum Workshop on"Recent Trends in Structural Bioinformatics and Computer Aided Drug Design" 24th –27th February, 2015 SBCADD’2015.

#### International Journal:

1. Akshay Uttarkar, Swarna M. Patra & Vidya Niranjana, Targeting the G-quadruplex structure in the hTERT promoter for telomerase activity: in silico screening of phyto-compounds and long timescale replica exchange molecular dynamic simulations, 2024, Molecular Simulation 50 (16): 1465–79. [View article](#)
2. Sen M, Priyanka BM, Anusha D, Puneetha S, Setlur AS, Karunakaran C, Tandur A, Prashant CS, Niranjana V. Computational targeting of iron uptake proteins in Covid-19 induced mucormycosis to identify inhibitors via molecular dynamics, molecular mechanics and density function theory studies. In Silico Pharmacology. 2024 Sep 29;12(2):90. [View article](#)

3. Bhat SS, Kulkarni SR, Uttarkar A, Niranjana V. Computational Insights into Papaveroline as an In Silico Drug Candidate for Alzheimer's Disease via Fyn Tyrosine Kinase Inhibition. *Molecular Biotechnology*. 2024 Jul 14:1-5. [View article](#)
4. Setlur AS, Niranjana V, Karunakaran C, Sambanni VS, Sharma D, Pai K. Unified Aedes aegypti Protein Resource Database (UAAPRD): An Integrated High-Throughput In Silico Platform for Comprehensive Protein Structure Modeling and Functional Target Analysis to Enhance Vector Control Strategies. *Molecular Biotechnology*. 2024 Jul 24:1-9. [View article](#)
5. Setlur AS, Niranjana V, Balaji A, Chandrashekar K. ProteoDockNet: Novel GNN-based ligand binding affinities prediction architecture via SMILES to key liver, kidney and brain proteins using QSAR data. *Computational and Structural Biotechnology Reports*. 2024 Aug 13:100011. [View article](#)
6. Setlur AS, Karunakaran C, Panhalkar V, Sharma S, Sarkar M, Niranjana V. Multifaceted Computational Profiling of Thymol and Geraniol Against the Human Proteome for Bio-Repellent Alternatives: Toxicity Predictions, Degradation Analysis, and Quantum Mechanical Approaches. *Acta Tropica*. 2024 Aug 12:107359. [View article](#)
7. Akshay Uttarkar, Vidya Niranjana (2024). Quantum synergy in peptide folding: A comparative study of CVaR-variational quantum eigensolver and molecular dynamics simulation. *International Journal of Biological Macromolecules*. Volume 273, Part 1, 2024, 133033, ISSN 0141-8130. [View article](#)
8. Zameer F, Jain P, Khan K, Pramod Kumar P, Harish Prashanth KV, Niranjana V, Ravish H. Unraveling the regulatory landscape of Parkinson disease: A molecular symphony of miRNAs, transcription factors, and high-risk genes. *Neurosci Lett*. 2024 Apr 25:137792. [View article](#)
9. Akshay Uttarkar, Vibha Rao, Dhrithi Bhat & Vidya Niranjana, Disaggregation of amyloid-beta fibrils via natural metabolites using long timescale replica exchange molecular dynamics simulation studies. *J Mol Model* 30, 61 (2024). [View article](#)
10. Chandrashekar Karunakaran, Vidya Niranjana, Anagha S Setlur, Dhanya Pradeep and Jitendra Kumar, "Exploring the Role of Non-synonymous and Deleterious Variants Identified in Colorectal Cancer: A Multi-dimensional Computational Scrutiny of Exomes", 2024, *Current Genomics* [View article](#)
11. Chandrashekar K, Vidya Niranjana, Adarsh Vishal and Anagha S Setlur, "Integration of Artificial Intelligence, Machine Learning and Deep Learning Techniques in Genomics: Review on Computational Perspectives for NGS Analysis of DNA and RNA Seq Data", 2024, *Current Bioinformatics* (Accepted) [View article](#)
12. Yogesh Dashrath Naik, Chuanzhi Zhao, Sonal Channale, Spurthi N. Nayak, Karma L. Bhutia, Ashish Gautam, Rakesh Kumar, Vidya Niranjana, Trushar M. Shah, Richard Mott, Somashekhar Punnuri, Manish K. Pandey, Xingjun Wang, Rajeev K. Varshney & Mahendar Thudi (2024) *Bioinformatics for Plant Genetics and Breeding Research*. In: Pandey, M.K., Bentley, A., Desmae, H., Roorkiwal, M., Varshney, R.K. (eds) *Frontier Technologies for Crop Improvement. Sustainability Sciences in Asia and Africa()*. Springer, Singapore. [View article](#)
13. Vidya Niranjana, Pooja Sureshkumar, Likitha Shankara, Gulab Khedkar and Jitendra Kumar (2024) *Insights on Mechanism of Plant Related Bacteria Producing Phytohormones, New Insights Into Phytohormones*, Intechopen. [View article](#)
14. Akshay Uttarkar, Vidya Niranjana (2024) A comparative insight into peptide folding with quantum CVaR-VQE algorithm, MD simulations and structural alphabet analysis. *Quantum Inf Process* 23, 48 (2024). [View article](#)
15. Niranjana V, Setlur AS, Skariyachan S, Chandrashekar K. Applications of Microbial Consortia and Microbiome Interactions for Augmenting Sustainable Agrobiological. In *Sustainable Agrobiological: Design and Development of Microbial Consortia* 2023 Mar 21 (pp. 275-316). Singapore: **Springer Nature Singapore**. [View article](#)

16. Sowmya H. S., Guruprasad V., Ningaraju T. M., Anagha S. Setlur, Chandrashekar K., Jitendra Kumar & Vidya Niranjana (2023) Comprehending interaction mechanism of natural actives of *Colchicum autumnale* L. for rheumatoid arthritis using integrative chemoinformatic approaches, *Journal of Biomolecular Structure and Dynamics*. [View article](#)
17. Aloor LJ, Skariyachan S, Raghavamenon AC, Kumar KM, Narayanappa R, Uttarkar A, Niranjana V, Cherian T. BRCA1/TP53 tumor proteins inhibited by novel analogues of curcumin—Insight from computational modelling, dynamic simulation and experimental validation. *International Journal of Biological Macromolecules*. 2023 Sep 21:126989. [View article](#)
18. Niranjana V, Rao P, Uttarkar A, Kumar J Protocol for the development of coarse-grained structures for macromolecular simulation using GROMACS. *Plos One* 2023 J18(8): e0288264. [View article](#)
19. Niranjana, V., Uttarkar, A., Kaul, A., Varghese, M (2023). A Machine Learning-Based Approach Using Multi-omics Data to Predict Metabolic Pathways. In: Selvarajoo, K. (eds) *Computational Biology and Machine Learning for Metabolic Engineering and Synthetic Biology*. *Methods in Molecular Biology*, vol 2553. Humana, New York, NY. [View article](#)
20. Vidya Niranjana, Sanjana Jayaprasad, Akshay Uttarkar, Raviraj Kusanur and Jitendra Kumar, (2023). Design of Novel Coumarin Derivatives as NUDT5 Antagonists That Act by Restricting ATP Synthesis in Breast Cancer Cells, *Molecules*,28(1):89 [View article](#)
21. Niranjana, V.; Uttarkar, A.; Ramakrishnan, A.; Muralidharan, A.; Shashidhara, A.; Acharya, A.; Tarani, A.; Kumar, J(2023). Novo Design of Anti-COVID Drugs Using Machine Learning-Based Equivariant Diffusion Model Targeting the Spike Protein. *Curr. Issues Mol. Biol.* 45, 4261-4284. [View article](#)
22. Kavya N, Prasannakumar MK, Venkateshbabu G, Niranjana V, Uttarkar A, Buella Parivallal P, Banakar SN, Mahesh HB, Devanna P, Manasa KG, Shivakumara TN. Insights on Novel Effectors and Characterization of Metacaspase (RS107\_6) as a Potential Cell Death-Inducing Protein in *Rhizoctonia solani*. *Microorganisms*. 2023; 11(4):920 [View article](#)
23. Skariyachan, S., Praveen, P.K.U., Uttarkar, A. and Niranjana, V. (2023), Computational design of prospective molecular targets for *Burkholderia cepacia* complex by molecular docking and dynamic simulation studies. *Proteins*. 2023; 1- 15 [View article](#)
24. Niranjana Vidya, R Vibha, Philip Sarah, Uttarkar Akshay, Kusanur Raviraj and Kumar Jitendra (2023), Design of novel Imidazopyrazine derivative against breast cancer via targeted NPY1R antagonist, *Anti-Cancer Agents in Medicinal Chemistry* 2023; 23(15) [View article](#)
25. C Lavanya, S Pooja, Kashyap AH, Rahaman A, Niranjana S, Niranjana V (2023), Novel Biomarker Prediction for Lung Cancer Using Random Forest Classifiers. *Cancer Informatics*; 22 [View article](#)
26. Rana S, Skariyachan S, Uttarkar A, Niranjana V. Carboxymuconolactone decarboxylase is a prospective molecular target for multi-drug resistant *Acinetobacter baumannii*-computational modeling, molecular docking and dynamic simulation studies. *Comput Biol Med*. 2023 Mar 16;157:106793. [View article](#)
27. Chandrashekar K, Anagha S Setlur, Adithya Sabhapathi C, Satyam Suresh Raiker, Satyam, Singh and Vidya Niranjana, Decision support system and web-application using supervised machine learning algorithms for easy cancer classifications, *Cancer Informatics*, 2023. [View article](#)
28. Anagha S Setlur, Chandrashekar K, Ritwija Bhattacharjee, Jitendra Kumar & Vidya Niranjana (2023) Deciphering the interaction mechanism of natural actives against larval proteins of *Aedes aegypti* to identify potential larvicides: a computational biology analysis, *Journal of Biomolecular Structure and Dynamics* [View article](#)
29. Sujitha, D.; Kumar, H. G. J.; Thapliyal, G.; Pal, G.; Vanitha, P. A.; Uttarkar, A.; Patil, M.; Reddy, B. H. R.; Niranjana, V.; Rayalcheruvu, U.; Govind, G.; Udayakumar, M.; Vemanna, R. S., (2023)

Transcription factors controlling the expression of oxidative stress associated genes in rice (*Oryza sativa* L.). *Plant Biotechnol Rep* [View article](#)

30. Sumeer Ahmed, Ummer Muhammed Rafi, Raju Senthil Kumar, Ajmal Rashid Bhat, Malika Berredjem, Vidya Niranjana, Lavanya C. & Aziz Kalilur Rahiman (2023) Theoretical, antioxidant, antidiabetic and in silico molecular docking and pharmacokinetics studies of heteroleptic oxovanadium(IV) complexes of thiosemicarbazone-based ligands and diclofenac. *Journal of Biomolecular Structure and Dynamics* [View article](#)
31. Sara Grine, Faiza Taibi, Malika Berredjem\*, Ali Dekir, Fouzia Benaliouche, Khadidja Otmane Rachedi, Anissa Acidi, Nasir Iqbal, Ajmal R. Bhat, Vidya Niranjana, Lavanya C, Nouredine Soltani (2023) Antifungal activity of the essential oil of *Pelargonium graveolens*. Molecular docking, molecular dynamics, DFT, and in silico ADMET studies of five derivatives. *Journal of Molecular Structure* Vol 1294 (2), 136546 [View article](#)
32. Sumeer Ahmed, Ajmal R. Bhat, Aziz Kalilur Rahiman, Rajendra S. Dongre, Aso Hameed Hasan, Vidya Niranjana, Lavanya C, S. A. Sheikh, Joazaizulfazli Jamalis, Malika Berredjem & Sarkar M. A. Kawsar (2023) Green synthesis, antibacterial and antifungal evaluation of new thiazolidine-2,4-dione derivatives: molecular dynamic simulation, POM study and identification of antitumor pharmacophore sites. *Journal of Biomolecular Structure and Dynamics* [View article](#)
33. Anagha S Setlur, Chandrashekar Karunakaran, V Anusha, Aditya A Shendre, Akshay Uttarkar, Vidya Niranjana, H.G. Ashok Kumar (2023) Investigating the molecular interactions of Quinoline derivatives for antibacterial activity against *Bacillus subtilis*: Computational biology and in-vitro study interpretations. *Molecular Biotechnology* (Accepted) [View article](#)
34. Abdu Rehaman Pasha Syed, Rahul Anbalagan, Anagha S. Setlur, Chandrashekar Karunakaran, Jyoti Shetty, Jitendra Kumar & Vidya Niranjana (2022), Implementation of ensemble machine learning algorithms on exome datasets for predicting early diagnosis of cancers. *BMC Bioinformatics* 23, 496 [View article](#)
35. Garima Pal, Rahul Bakade, Sanjay Deshpande, V. Sureshkumar, Swathi S. Patil, Akashata Dawane, Subham Agarwal, Vidya Niranjana, M. K. Prasanna Kumar and Ramu S. Vemanna (2022), Transcriptomic responses under combined bacterial blight and drought stress in rice reveal potential genes to improve multi-stress tolerance. *BMC Plant Biology*, 22:349 [View article](#)
36. Niranjana V, Uttarkar A, Murali K, Niranjana S, Gopal J, Kumar J. *Mycobacterium* Time-Series Genome Analysis Identifies AAC2' as a Potential Drug Target with Naloxone Showing Potential Bait Drug Synergism. *Molecules*. 2022; 27(19):6150. [View article](#)
37. Gullahalli Swathantraiah, Jagadeesha; Srinivasa, Sudhanva; Belagal Motatis, Anil Kumar; Uttarkar, Akshay; Bettaswamygowda, Shwetha; Bilgumba Thimmaiah, Sridhar; Niranjana, Vidya; Rangappa, Shobith; Subbegowda, Rangappa; Naraganahalli Ramegowda, Thimmegowda, Novel 1,2,5-tri substituted Benzimidazoles Potentiate Apoptosis by Mitochondrial Dysfunction in Panel of Cancer Cells, *ACS Omega*, 2022. (Accepted) [View article](#)
38. Anagha S Setlur, Chandrashekar K, Shruti Pandey, Manas Sarkar and Vidya Niranjana, Molecular interaction studies of thymol via molecular dynamic simulations and free energy calculations using multi-target approach against *Aedes aegypti* proteome to decipher its role as mosquito repellent, *Molecular Simulation*, 2022. [View article](#)
39. Anagha S Setlur, Chandrashekar K, Shruti Pandey, Manas Sarkar & Vidya Niranjana (2022) Comprehensive Molecular Interaction Studies to Construe the Repellent/Kill Activity of Geraniol During Binding Event Against *Aedes aegypti* Proteins, *Molecular Biotechnology* [View article](#)
40. Vanitha, P., Vijayaraghavareddy, P., Uttarkar, A., Dawane, A., Sujitha, D., Ashwin, V., Babitha, K., Niranjana, V., Sheshshayee, M., Anuradha, C., Makarla, U. and Vemanna, R.S. (2022), Novel small

molecules targeting bZIP23 TF improve stomatal conductance and photosynthesis under mild drought stress by regulating ABA. *FebsJ*, April 2022. [View article](#)

41. Vidya Niranjana, Anagha Shamsundar Setlur, Chandrashekar Karunakaran, Akshay Uttarkar, Kalavathi Murugan Kumar & Sinosh Skariyachan (2022), Scope of repurposed drugs against the potential targets of the latest variants of SARS-CoV-2. *Structural Chemistry*, August 2022. [View article](#)
42. Akshay Uttarkar, Alice Preethi Kishore, Sudhanva M. Srinivas, Shobith Rangappa, Raviraj Kusanur, Vidya Niranjana "Coumarin derivative as a potent drug candidate against triple negative breast cancer targeting the frizzled receptor of wingless-related integration site signaling pathway", *Journal of Biomolecular Structure and Dynamics*, 2022 [View article](#)
43. Vanitha Adhinarayanreddy, Preethi Vijayraghavadreddy, Ashwin Vargheese, Sujitha Dadi, Akshay Uttarkar, Vidya Niranjana, Anuradha C V, Sheshshayee M. Sreeman, Ramu Vemanna "Simple and Rapid Oxidative Stress Screening Method of Small Molecules for Functional Studies of Transcription Factor", *Rice Science*, 2022, Vol 29(5): 402-406 [View article](#)
44. Padmavathi, P., Chandrashekar, K., Setlur, A. S., & Niranjana, V. (2022). MutaXome: A Novel Database for Identified Somatic Variations of In silico Analyzed Cancer Exome Datasets. *Cancer Informatics*. [View article](#)
45. Shaban Ahmad, Piyush Bhanu, Jitendra Kumar, Ravi Kant Pathak, Dharmendra Mallick, Akshay Uttarkar, Vidya Niranjana & Vachaspati Mishra "Molecular dynamics simulation and docking analysis of NF- $\kappa$ B protein binding with sulindac acid", *Bioinformation* 18(3): 170-179 (2022) [View article](#)
46. Lavanya C, Aajnaa Upadhyaya, Arpita guha neogi, Vidya Niranjana "Identification Of Novel Regulatory Pathways Across Normal Human Bronchial Epithelial Cell Line (Nhbe) And Peripheral Blood Mononuclear Cell Line (Pbmc) In Covid-19 Patients Using Transcriptome Analysis", *Informatics in Medicine Unlocked*, 2022, 100979, [View article](#)
47. Haritha Rajaram, N. Harshitha, Shweta A. Ram, Swarna M. Patra, Vidya Niranjana, K.A. Vishnumurthy, "Targeting non-structural proteins and 3CLpro in SARS-CoV-2 virus using phytochemicals from medicinal plants - In-silico approach, 2022, *Journal of the Indian Chemical Society*, Vol 99 (6), 100488. [View article](#)
48. Vidya Niranjana and Akshay Uttarkar, (2022), "Triple-Negative Breast Cancer and Recent Advancements in Treatment". *J Oncol Res Treat* 7(2):182. [View article](#)
49. Vidya Niranjana, Akshay Uttarkar and Jitendra Kumar (2022), "Recent Advancement in Drug Delivery for Treatment of Leukemia". *J Leuk*. 10:298. [View article](#)
50. Priyaranjini Rao, Ashwini S, Ghazala Masood, Raviraj Kusanur, Vidya Niranjana, and Swarna M. Patra, (2022), *Bioinformatics Study of Pioglitazone Analogues as Potential Anti-Diabetic Drugs*. *Russian Journal of Bioorganic Chemistry*, ISSN 1068-1620 - Accepted
51. Uttarkar A and Niranjana V. Brefeldin A variant via combinatorial screening acts as an effective antagonist inducing structural modification in EPAC2. (2022) *Molecular Simulation*, DOI:10.1080/08927022.2022.2110271
52. Vidya Niranjana, Amulya Rao, B Janaki, Akshay Uttarkar, Anagha S Setlur, Chandrashekar K & Udayakumar M "Molecular Docking and Interaction Studies of Identified Abscissic Acid Receptors in *Oryza sativa*: An In-Silico Perspective on Comprehending Stress Tolerance Mechanisms" (2021), *Current Genomics* [View article](#)
53. Padmavathi P, Anagha S Setlur, Chandrashekar K, Vidya Niranjana "A comprehensive in-silico computational analysis of twenty cancer exome datasets and identification of associated somatic variants reveals potential molecular markers for detection of varied cancer types", *Informatics in Medicine Unlocked*, Volume 26, 2021, 100762, [View article](#)

54. Akshatha Prasanna and Vidya Niranjana "MutVis: Automated framework for analysis and visualization of mutational signatures in pathogenic bacterial strains", *Infection, Genetics and Evolution*, 2021, 104805, [View article](#)
55. Sinosh Skariyachan, Dharshini Gopal, Dhrithi Deshpande, Anusha Joshi, Akshay Uttarkar, Vidya Niranjana, "Carbon fullerene and nanotube are probable binders to multiple targets of SARS-CoV-2: Insights from computational modeling and molecular dynamic simulation studies", *Infection, Genetics and Evolution*, 2021, 105155, [View article](#)
56. Vidya Niranjana, Akshay Uttarkar, Sujitha Dadi, Akashata Dawane, Ashwin Vargheese, Jalendra Kumar H. G., Udayakumar Makarla, and Vemanna S. Ramu "Stress-Induced Detoxification Enzymes in Rice Have Broad Substrate Affinity", *ACS Omega*, 2021, [View article](#)
57. Sinosh Skariyachan, Dharshini Gopal, Aditi G. Muddebihalkar, Akshay Uttarkar, Vidya Niranjana, "Structural insights on the interaction potential of natural leads against major protein targets of SARS-CoV-2: Molecular modelling, docking and dynamic simulation studies", *Computers in Biology and Medicine*, 2021, 104325, [View article](#)
58. Ishu Khangwal, Sinosh Skariyachan, Akshay Uttarkar, Aditi G. Muddebihalkar, Vidya Niranjana and Pratyosh Shukla, "Understanding the Xylooligosaccharides Utilization Mechanism of *Lactobacillus brevis* and *Bifidobacterium adolescentis*: Proteins Involved and Their Conformational Stabilities for Effectual Binding", *Molecular Biotechnology*, 2021, [View article](#)
59. Harini Subramaniam, P Dhruthi, Devashish, V Suchithra and Vidya Niranjana, "MutaCheck: A novel pipeline to check for single nucleotide polymorphism (SNP) and associated diseases in mitochondrial DNA", *Informatics in Medicine Unlocked*, 2021, Vol 25, 100671, [View article](#)
60. Dayanand Patagar, Akshay Uttarkar, Swarna M. Patra, Jagadish H. Patil, Raviraj Kusanur, Vidya Niranjana, and H. G. Ashok Kumar "Spiro Benzodiazepine Substituted Fluorocoumarins as Potent Anti-Anxiety Agents" *Russian Journal of Bioorganic Chemistry*, 2021, [View article](#)
61. Akshay Uttarkar, Vidya Niranjana, Shivam Pandit and Srividya Subash, "Study of SARS-nCoV2 Indian isolates gaining insights into mutation frequencies, protein stability and prospective effect on its pathogenicity", *Coronaviruses*, 2021, Volume 2(10), [View article](#)
62. Rajeev R, Marathe SD, Niranjana V, Sharma B, Sarojini S. In silico Analysis of Stigmasterol from *Saraca asoca* as a Potential Therapeutic Drug Against Alzheimer's Disease. *Journal of Biologically Active Products from Nature*. 2021;11(5-6):516-29. [View article](#)
63. Sinosh Skariyachan, Dharshini Gopal, Shweta Chakrabarti, Priya Kempanna, Akshay Uttarkar, Aditi G. Muddebihalkar, Vidya Niranjana, "Structural and molecular basis of the interaction mechanism of selected drugs towards multiple targets of SARS-CoV-2 by molecular docking and dynamic simulation studies-Deciphering the scope of repurposed drugs", *Computers in Biology and Medicine*, 2020, 104054, <https://doi.org/10.1016/j.compbiomed.2020.104054>.
64. Pooja Ramesh, Vidhyavathy Nagarajan, Vartika Khanchandani, Vasanth Kumar Desai, Vidya Niranjana "Proteomic variations of esophageal squamous cell carcinoma revealed by combining RNA-seq proteogenomics and G-PTM search strategy", *Heliyon*, Volume 6, Issue 8, 2020, <https://doi.org/10.1016/j.heliyon.2020.e04813>.
65. Akshatha Prasanna and Vidya Niranjana, "Clin-mNGS: Automated Pipeline for Pathogen Detection from Clinical Metagenomic Data" *Current Bioinformatics*, 2020, doi:10.2174/15748936159992006081300294.
66. Skariyachan S, Ravishankar R, Gopal D, Muddebihalkar AG, Uttarkar A, Praveen PKU, et al. Response regulator GacA and transcriptional activator RhlR proteins involved in biofilm formation of *Pseudomonas aeruginosa* are prospective targets for natural lead molecules: Computational modelling,

- molecular docking and dynamic simulation studies. *Infection, Genetics and Evolution*. 2020;85:104448. <https://doi.org/10.1016/j.meegid.2020.104448>
67. Sinosh Skariyachan, Ishu Khangwal, Vidya Niranjana, Naveen Kango and Pratyosh Shukla, “Deciphering effectual binding potential of xylo-substrates towards xylose isomerase and xylokinase through molecular docking and molecular dynamic simulation”, *Journal of Biomolecular Structure and Dynamics*, 2020, accepted, <https://doi.org/10.1080/07391102.2020.17728826>.
  68. Skariyachan, S., Muddebihalkar, A. G., Badrinath, V., Umashankar, B., Eram, D., Uttarkar, A., & Niranjana, V. “Natural epiestriol-16 act as potential lead molecule against prospective molecular targets of multidrug resistant *Acinetobacter baumannii*-Insight from in silico modelling and in vitro investigations. *Infection*”, *Genetics and Evolution*, 82, 104314, 2020, doi: <https://doi.org/10.1016/j.meegid.2020.104314>
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  70. Darshani Gopal, Aditi G Muddebihalkar, Sinosh Skariyachan, Akshay Uttarkar C, Prarithi Kaveramma, Ulluvangada Praveen, Roshini Ravishankar, Tejaswini V and **Vidya Niranjana**, “Mitogen activated protein kinase-1 and cell division control protein-42 are putative targets for the binding of novel natural lead molecules: a therapeutic intervention against *Candida albicans*”, *Journal of biomolecular structure and dynamics*, 2019, accepted. DOI: [10.1080/07391102.2019.1682053](https://doi.org/10.1080/07391102.2019.1682053)
  71. Pooja Ramesh and **Vidya Niranjana**, “An integrative proteogenomics approach study to identify peptides and protein coding genes in esophageal squamous cell carcinoma”, *Current topics in peptide and protein research*, Vol 20, 2019
  72. Akshatha prasanna, Pooja R, Suchithra V, Akhil Ravikumar, Vidya Niranjana, “Cloud Based Solutions for Genome Informatics: Challenges and Applications” *Materials Today: Proceedings* 5 (2018) 10652–10659, 2018 **View article**
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  75. Sunil S, K B Ramesh, **Vidya Niranjana**. Detection of Rheumatic Arthritis Disease Based on Genomic Analysis by Applying Wavelet transform. *Journal of Signal Processing*. 2017, 3 (2, 3).
  76. Sanjay Deshpande, Vidya Niranjana, Varsha Nagarajan, Phylogenetic profiling from metagenomic data of isolates from hot springs, Vol-5, ICGSTE-2016
  77. Dr. Sushma-Nagaraja Grellscheid\*, Vidya Niranjana, Ming-Hung Wong, Jayarama Reddy, Akshatha Prasanna, Sanjay Deshpande, A metagenomic analysis of soil samples to find the distribution of microflora in different soil types, Vol-6, ICGSTE-2016
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80. Vidya Niranjana, Jayarama Reddy, Suchithra V, Pooja R, Amshumala S. Role of informatics in bioremediation—a biological solution to environmental issues. Vol-6,ICGSTE-2016
81. Pooja R, Prarthana A, Srivindya G, Suchithra V, Sneha S, Amshumala S, Vidya N “Green solution for improving indoor air quality”, Biovistas-International Journal of Biological Research - IJBR. Vol-6,ICGSTE-2016
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91. Seenivasagam, Hemavathi,Sivakumar,**NiranjanVidya**. Discovering novel carriers for Oral insulin tablets: a pharmacoinformatics approach .International Journal of Bioinformatics Research and Applications 2013;9(2):184-206
92. PavuluriPandurangaRao,Y. Narasinma Reddy, **VidyaNiranjan** and Nagendra R Hegde. Deep sequencing as a method of typing bluetongue virus isolates. Journal of Virological methods, 2013;193(2):314-9
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94. Ramasamy S. Annadurai, RamprasadNeethiraj,VasanthanJayakumar, Anand C. Damodaran, SudhaNarayanaRao, Mohan A. V. S. K. Katta, SreejaGopinathan, Santosh Prasad Sarma, VanithaSenthilkumar, **VidyaNiranjan**, Ashok Gopinath, Raja C. Mugasimangalam. De Novo Transcriptome Assembly (NGS) of *Curcuma longa* L. Rhizome Reveals Novel Transcripts Related to Anticancer and Antimalarial Terpenoids.BMC Genomics; 2012, 8(2):e56217

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reference database as an initial platform for approaching systems biology in humans. *Genome Research*. 2003;13(10):2363-71.

#### **International Conference:**

1. Vidya Niranjana and Lavanya C, Enhancement of crop quality and soil health through comprehensive metagenome and Metabolome Profiling at BiotechMicroCon : Shaping the sustainable future, International conference 23rd December 2023.
2. Vidya Niranjana and S Pooja, Insights on neonatal postbiotics and enhancement of nutrimix at BiotechMicroCon : Shaping the sustainable future, International conference 22nd December 2023.
3. Vidya Niranjana, SNP Genotyping and Genome-Wide Association Mapping for economic traits of silkworm, *Bombyx mori* L at 26th International Sericulture sericulture (ISC) congress, 2022
4. Vidya Niranjana, Computational analysis of Sericin peptides extracted from *Bombyx mori* (Nistari) cocoons to explore its role as drug delivery peptide at 26th International Sericulture sericulture (ISC) congress, 2022
5. Vidya Niranjana, State machine based framework for Genomic Analysis at International journal of Engineering research and technology, 2021
6. Vidya Niranjana and Akshay uttarkar, Shambhawi, Angha, SARS-CoV2 main protease inhibition by compounds isolated from Sarsaparilla using molecular docking at ICGCP, 2021
7. Vidya Niranjana Alice preethi, Re-profiling of phytochemicals to prospective targets in novel Wnt signalling pathway against Triple Negative Breast Cancer at ICGCP, 2021
8. Vidya Niranjana, Sinsha P S, Development of indian specific mulberry database at ICC NSB, 2021
9. Vidya Niranjana, Lakshmi Bharati, Identification of SNPs in *Bombyx mori* at ICCNSB, 2021
10. Akhilesh Pandey, Salil Sharma, Shubha Suresh, RaghothamaChaerkady and VidyaNiranjana Plasma Proteome Database HUPO 3rd Annual World Congress, October 25–27, Beijing, China.
11. Shashi Kumar, Naveen Kumar N, Manuj K. S and VidyaNiranjana, Portable Bioinformatics Tools Using Beagle BoneProc. of the Intl. Conf. on Advances In Bio-Informatics,Bio-Technology And Environmental Engineering-ABBE 2014.ISBN: 978-1-63248-009-5 doi: 10.15224/978-1-63248-009-5-97.
12. VidyaNiranjana, Archana V Pawar, Manasa D A, Reshma Mane, Sukanya V K, BEADS The Indian Specific Mutation DatabaseProc. of the Intl. Conf. on Advances In Bio-Informatics,Bio-Technology And Environmental Engineering-ABBE 2014.ISBN: 978-1-63248-009-5 doi: 10.15224/978-1-63248-009-5-97.
13. Vidya N , ChetanaShetty, Deepa Mohan, MayuriRane, Padmavathi P, Sandhya S, Open Source Drug Discovery For Chikungunya Proc. of the Intl. Conf. on Advances In Bio-Informatics,Bio-Technology And Environmental Engineering-ABBE 2014.ISBN: 978-1-63248-009.
14. Ramakrishnan G. S, Kamath M. M, and Niranjana V. Increasing Microbial Biofuel Production by In-silico Comparative Genomic Studies.IJBBB 2014 Vol.4(5): 386-390 ISSN: 2010-3638 DOI: 10.7763/IJBBB.2014.V4.375.
15. Padmavathi.P,VidyaNiranjana,Amogh,SinduraGopinath, MalavikaG,Nanditha SNP analysis of cancer exomes.GLOBAL CANCER SUMMIT,International Collaborative Conference-2015.
16. Pooja Ramesh and VidyaNiranjana. Identification of peptides and proteins responsible for esophageal cancer using proteogenomic approach in 2nd International Conference on Structural and Functional Genomics 2016, SASTRA University, Thanjavur, Tamil Nadu.
17. SuchithraVenkatesh, Siddharth Kothari, NilanjanaDutta and VidyaNiranjana. Functional clustering of human gut microbes using metagenomics data in 2nd International Conference on Structural and Functional Genomics 2016, SASTRA University, Thanjavur, Tamil Nadu.

18. AkshathaPrasanna, Sanjay Deshpande and VidyaNiranjan. NGS based analysis of *Streptococcus pyogenes* whole genome data to determine SNPs causing pathogenicity over evolution in 2nd International Conference on Structural and Functional Genomics 2016, SASTRA University, Thanjavur, Tamil Nadu.
19. Lakshmi T V, K.B Ramesh, Vidya Niranjan, Monica N, Aishwarya J Shetty, Aishwarya Rao. Design of a state-machine based genomic simulator and development of a genomic analysis algorithm and prediction system to predict the occurrence of Rheumatic Arthritis (RA) disease. C-CUBE 2017: IEEE International Conference on Circuits, Controls and Communication. 2017, ISBN: 978-1-5386-0615-5.

**FDP/Workshops/ Seminars/ Symposium attended:**

1. Organized Science and Power workshop, March 2023
2. Inauguration of RV-MERCK Certification Program on 9th June 2023 at BT seminar hall , RVCE
3. Purification Summit by Merck, 14th July 2023
4. Quantum Realm by Amazon AWS, 27th July 2023
5. Integration of Bioinformatics into Biology Curriculum (IISc), 20th July 2023
6. AI's Role in Indian Higher Education, August 7th, 2023
7. Invited talk on "Bioinformatics: An inherit life life for Biology" at Dayanand Sagar university, 5th May 2023
8. Invited talk on "Significance of Acquiring Research Skills" at ISE Seminar Hall, RVCE, 21st july 2023
9. The power of sharing detailed methods: credit, preservation, and reproducibility - Nov, 2023
10. 1st Open Seminar by PhD Student, Lakshmi Bharathi, April 2023
11. 1st Open Seminar by PhD Student, Sinsha V, April 2023
12. 2nd Open Seminar by PhD Student, Lakshmi Bharathi, 17th May 2023
13. 2nd Open Seminar by PhD Student, Sinsha V, 17th May 2023
14. PhD Defence of Thesis by Pooja Ramesh, 18th May 2023
15. Three days hands on Training on "GC-MS and HPLC", 23rd -25th March 2022
16. 2-day cloud-based hands-on Workshop on "Computational Structure-based Screening and Explicit Molecular Dynamics" - 18-04-2022, 19-04-2022
17. Inauguration of Indian Plastics Institute (IPI)–RVCE Student Chapter at R V College of Engineering At BT Seminar hall, 12-4-2022
18. Artificial Intelligence and Machine Learning in Applied Biotechnology (AIMLBIO) Conference, 8th to 10th of December, 2022
19. Applications of Bioinformatics in Horticulture, IIHR, 25th January
20. Role of Bioinformatics in Pharmaceuticals - What RVCE can proffer, Reckitt Benckiser Health Limited, Motavale, New Jersey, USA - 18-02-2022
21. QTL and linkage mapping in Mulberry, Central Silk Board, Bangalore - 19.05.2022
22. Role of Bioinformatics to assist Biotechnology Industry, San Diego Convention Centre, San Diego, USA - 13th of July, 2022
23. Decision support system using pattern recognition as an application of Machine learning for early diagnosis of genetic disease, Sir M.Visvesvaraya Institute of Technology , Bangalore - 01/07/2022
24. Whole genome analysis of *Mycobacterium tuberculosis* isolates to find signature mutation patterns in drug resistance, Genomics for Clinicians, Central Research Laboratory, KIMS, Bangalore - 26th of September 2022
25. AI/ML in Cancer Genomics & Personalized Medicine, Pondicherry University - 28-10-2022

26. Faculty Development Program on “Leadership and Excellence” by IES MANAGEMENT COLLEGE AND RESEARCH CENTRE (IES-MCRC) - 21-2-2022 to 25-2-2022
27. International Conference on Medical, Biological and Pharmaceutical Sciences (ICMBPS) Houston, United States of America - 23-02-2022 to 24-02-2022
28. BIO USA 2022, Sandiego Convention Centre, San Diego, California, USA - 12th of June 2022 to 15th June 2022
29. Crystallization and NMR studies on natural compounds, Center of Advanced Study in Crystallography & Biophysics, University of Madras Guindy Campus, Chennai - 600 025, INDIA - 29th and 30th July 2022
30. One-day workshop on Computational Material Modeling and Simulation, Hotel Royal Orchid, Bengaluru - 19th Oct 2022
31. Honorary Rosalind Member at London Journals Press (Membership ID: VB02859).
32. External expert member in Technical Advisory Research Group (TARG) at Bangalore Bioinnovation Center .
33. Guest faculty at Manipal institute of Regenerative studies (MAHE) on Biostatistics and Bioinformatics.
34. ATAL-FDP on “Cancer genomics in Healthcare system” from 15th to 21st Nov, 2021.
35. ATAL-FDP on “Leadership & Excellence Life Skill Management” from 21th to 26th Feb, 2021.
36. Member of Board of studies at Department of Biotechnology at Dayanand Sagar College of Engineering.
37. Member of Board of studies at Department of Biotechnology at NMKRV.
38. Invited as a member of Technical Program Committee at International Conference on Biomedical Informatics and Health Informatics (BIHI2021).

## **Interaction with outside world:**

### Industry connect with

- Reckitt benckiser (USA) Health LLC
  - Reckitt benckiser India Pvt Ltd
  - Reckitt benckiser Health (UK)
1. Collaboration with Amit Saxena, CDAC, Pune on National Quantum Mission
  2. Collaboration with SeqqAI, UK in Quantum Computing
  3. Member of C-CAMP cohort InDx program, Bangalore
  4. Research collaboration with Prayoga Education Research Institute, Bangalore
  5. MOU with Mediomix
  6. Collaboration with MERCK on various R&D projects related to pharma manufacturing.
  7. Collaboration with Hindustan Unilever on R&D projects.
  8. Material Transfer Agreement for small molecules in sustainable agriculture with BASF
  9. Facilitated on the eve of Inauguration of RV-MERCK Certification Program on 9th June 2023 at RVCE
  10. Jury for Elevate 2023, Karnataka Startup Cell, Department of Electronics, IT & Bt, Govt. of Karnataka.
  11. Invited Jury member at MSME IDEA HACKATHON 3.0, hosted by Bangalore Bioinnovation Centre.
  12. Life time member in Elevate Women Acceleration Programme, Bangalore Bioinnovation Centre
  13. Research project approved from ICMR on COVID-19 for Rs 7,20,341/-

14. Funding support from Bangalore Bioinnovation centre of Rs 7.50 lakhs to conduct a conference titled” Healthcare using Artificial Intelligence and Machine Learning
15. Consultancy with Symmetric Systems with a fees of Rs 28,000/-
16. Part of a delegation from GOK to attend BIO USA 2022 sponsored from Bangalore Bioinnovation for ~ 4.0 lakhs
17. MOU with Intergene Biosciences Pvt Ltd on 28th August 2021 for Research, Training and Internship.
18. MOU with Xome Lifesciences on 31st August 2021 for Research, Training, IP and publications.
19. Co-editor for the journal 'Frontiers in Big Data' with the topic focusing on ' Decoding Genome Sequencing Using AI and ML'.
20. Short term Fellowship at Wellcome Trust SANGER INSTITUTE, UK. ([Click Here](#))...
21. Conference on Public Health & Epidemic Diseases 2018, Dallas, USA. ([Click Here](#))...
22. Collaboration with Prabha Hegde working in 3M Pvt Ltd for paper publication and research work.
23. MOU- with Satva Healthcare System Pvt Ltd, Bangalore.
24. Interaction related to research work on prebiotics with Dr A K Samantha working in National Institute of Animal Nutrition and Physiology Bangalore.

#### Funded Projects and Collaborations:

#### In-House Projects:

#### Honors and Awards

1. Bioinformatics Scientist Award 2024 by Bangalore Bio-Innovation Centre (BBC)
2. Women Leaders in Automation & Data Science Award 2024 by Centre for Industry 4.0 LAB.
3. Awarded excellent performance and dedication during the PRiSM cycle for the year 2022-23.
4. Awarded excellent performance and dedication during the PRiSM cycle for the year 2021-22.
5. “Best researcher Award” at ISTE Chapter at RVCE 2018.
6. “Star Achiever Award” by Accenture India.
7. “Women of the year, 2019” by Lion's Club International.

#### Books/ Book Chapters Published:

1. Niranjana, V., Chandramouli, L., SureshKumar, P., & Kumar, J. (2024). Recent Advancement on In-Silico Tools for Whole Transcriptome Analysis.
2. Vidya Niranjana, Pooja Sureshkumar, Likitha Shankara, Gulab Khedkar and Jitendra Kumar (2024) Insights on Mechanism of Plant Related Bacteria Producing Phytohormones, New Insights Into Phytohormones, Intechopen. [View article](#)
3. Yogesh Dashrath Naik, Chuanzhi Zhao, Sonal Channale, Spurthi N. Nayak, Karma L. Bhutia, Ashish Gautam, Rakesh Kumar, Vidya Niranjana, Trushar M. Shah, Richard Mott, Somashekhar Punnuri, Manish K. Pandey, Xingjun Wang, Rajeev K. Varshney & Mahendar Thudi (2024) Bioinformatics for Plant Genetics and Breeding Research. In: Pandey, M.K.,
4. Bentley, A., Desmae, H., Roorkiwal, M., Varshney, R.K. (eds) Frontier Technologies for Crop Improvement. Sustainability Sciences in Asia and Africa(). Springer, Singapore. [View article](#)
5. Niranjana V, Setlur AS, Chandrashekar K, Uttarkar A, Skariyachan S. Deciphering the scope of in silico screening of novel natural lead molecules against putative molecular targets of multidrug-resistant bacterial pathogens. Nanotechnology and In Silico Tools 2024 Jan 1 (pp. 269-284). Elsevier. [View article](#)
6. Vidya Niranjana, Anagha S Setlur, Chandrashekar K, Sneha Kumkum, Sanjana Dasgupta, Varsha Singh, Vrushali Desai & Jitendra Kumar. Exploring the Synergistic Mechanism of AP2A2

Transcription Factor Inhibition via Molecular Modeling and Simulations as a Novel Computational Approach for Combating Breast Cancer: In Silico Interpretations. Mol Biotechnol (2023). [View article](#)

7. Niranjana, V., Setlur, A.S., Skariyachan, S., Chandrashekar, K. (2023). Applications of Microbial Consortia and Microbiome Interactions for Augmenting Sustainable Agrobiotechnology. In: Maheshwari, D.K., Dheeman, S. (eds) Sustainable Agrobiotechnology. Microorganisms for Sustainability, vol 43. Springer, Singapore. [https://doi.org/10.1007/978-981-19-9570-5\\_13](https://doi.org/10.1007/978-981-19-9570-5_13)
8. Human genome analysis and its impact on medical biotechnology “Medical Biotechnology” By Ankur Publication.
9. NoSQL: Database for storage and retrieval of data in cloud By Taylor and Francis.

#### **Patents:**

US20110040545, WO2009098717A

#### **Consultancy:**

Kaptronics Private Limited for Bacterial testing and analysis

Dextrose Technologies Pvt Ltd for HPLC analysis and industry certified internship.

#### **Consultancy Projects:**

1. Awarded NVIDIA Inception Grant with Intergene Biosciences Pvt Ltd worth 1.21 crores.
2. Awarded IonQ funding on quantum collaboration for 4980 USD.
3. enEclat- Principal Consultant- 6. 5 lakhs
4. Central Research Laboratory- NHS project ”Whole genome sequencing of drug resistant isolates” – Bioinformatics Consultant-Free lancer
5. OpCenter Consultants LLP - Lead of Industrial Liaison and also as Chief Skill Development Officer.

[Click here for more details about the Profile of Dr. Vidya Niranjana, Prof & HOD, Dept. of Biotechnology](#)