

School of Bio Sciences and Technology

Biobroadcast



DEAN'S MESSAGE

Greetings from the SBST family!

I am happy to present to you the cumulative efforts put in by SBST fraternity in the last quarter. It is a noteworthy credit that, in the 2022 updated list by Stanford University and Elsevier, SBST faculty have once again been recognised and honored amongst the world's top 2% scientists. This is indeed a commendable feat. SBST is on the right track to take VIT higher up in the world rankings.

Happy reading



Dr. Siva Ramamoorthy
Professor and Dean

School of BioSciences and Technology

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Conferences/workshops/Symposiums

1.The School of Bio Sciences and Technology (SBST) conducted a hands-on training session on “Response surface Methodology”, on 17th Aug 2022. **Dr. Karthik Loganathan**, Project Lead, Synthetic Biology, Salem Microbes Pvt Ltd served as the resource person. **Dr. V. Mohanasrinivasan** and **Dr. Subathradevi** served as the organisers.

2.The School of Bio Sciences and Technology (SBST) organised “Research Development Series – Lecture 6” on 30th Aug 2022. **Dr. P. K. Suresh** and **Dr. Jayanthi Abraham** served as the organisers. **Dr. Vinod Jyothikumar**, Operations, and risk management consultant, DSS Plus, Bangaluru, delivered a lecture titled “Biotechnology operations, valuations and biosecurity”.

3.The School of BioSciences and Technology (SBST) conducted a “One-day workshop on Advances in Forensics” on the 07th of September 2022. **Dr. Kalai Selvi**, Senior Assistant Professor and Head, Department of Forensic Medicine, Government Vellore Medical College, Adukamparai, Vellore, **Dr.Latif Rajesh Johnson**, Assistant Professor, Department of Forensic Medicine, Christian Medical College, Vellore, **Mr. Dinesh Paranthangan**, Founder, Hackup Technology Pvt. Ltd. Coimbatore served as the resource persons. **Dr. Danie Kingsley** and **Dr. Jayanthi Abraham** served as the organizers.

4.The School of Bio Sciences and Technology (SBST) organised “Research Development Series – Lecture 7” on 7th Sep 2022. **Dr. P. K. Suresh** and **Dr. Jayanthi Abraham** served as the organisers. **Dr. Kavitha A. Iyer** delivered a lecture titled “Cryo-electron microscopy unravels molecular mechanisms of disease mutations in RyR1”.

5.The School of Bio Sciences and Technology (SBST) conducted a two-day lecture cum workshop on “Recent Trends in Food Science and Technology” from 9th Sep to 10th Sep 2022. A total of 9 resource persons from various industries and research institutes across the country delivered a series of insightful lectures focussing on innovations in food science and technology, advances in food biotechnology, microbial applications in food and fermentation and new frontiers in human nutrition. **Dr. Vino S**, **Dr. Jeevitha G.C.**, **Dr. Jabez Osborne W**, **Dr. Sandeep Singh Rana**, **Dr. Vidisha Tomer**, **Dr. Rahul Vashishth** served as organisers.

ADD 2 CERTIFICATES

FACULTY OUTREACH

- **Dr. Everette Jacob Remington N** delivered a talk entitled “Deconvolution Microscopy Principle and Applications” an event organized by Kamaraj College of Engineering and Technology, Vellakulam, India on 9 July 2022.
- **Dr. Sivakumar A** delivered a lecture on the topic "DRUG TARGETS IN MTB" an event organized by Periyar College of Pharmaceutical Sciences, Trichy, India, on 13 July 2022.
- **Dr. Arnold Emerson I** delivered a lecture on the topic “Complex analysis of big data in cancer genetics” an event organized by Osmania University, Hyderabad, India, on 20 July 2022.
- **Dr. Anand A** presented a lecture on the topic “Understanding infectious diseases and anti-microbial resistance through bioinformatics applications” organized by Osmania University, Hyderabad, India, on 20 July 2022.
- **Dr. Gothandam K. M** delivered an invited talk on “Cyanobacterial research in CIIMAR, Porto, Portugal” to Vellore Institute of Technology India, Vellore, India, on 27 July 2022.
- **Dr. Subhashree V** delivered a lecture on the topic “Recent Trends in Functional Foods” an event organized by Auxilium College, Vellore, India on 25 August 2022.
- **Dr. Anand A** presented a lecture on the topic “In-silico protocols to combat AMR in bacterial pathogens” organized by Assam University, Silchar, India, on 7 September 2022.
- **Dr. Everette Jacob Remington N** delivered a talk entitled “Regulatory Considerations for Gene and Cell Therapies” organized by Narayana Nethralaya Foundation, Bengaluru, India on 9 September 2022.
- **Dr.Siva Ramamoorthy** delivered a Plenary/Invited lecture in the Broad -Field of Life Sciences in the DST-PURSE Satellite Symposium held at Bharathiar University during 13th -15th ,September 2022.
- **Dr. Anand A** delivered a talk on the topic “Computational studies to understand the mechanism of antibiotic resistance in pathogens of medical importance” to Bharathiyar University, Coimbatore, India on 14 September 2022.
- **Dr. Rajiniraja M** delivered a lecture on the topic “Basics in molecular modelling” an event organized by Vellore Institute of Technology, Vellore, India on 17 September 2022.
- **Dr. Sudhakaran R** presented a lecture on “In vitro gene amplification” to Thiruvalluvar University, Vellore, India on 27 September 2022.
- **Dr. Anand Prem Rajan** delivered an invited talk on “Recent Trends in Geomicrobiology & Its Biotechnological Applications” during the National Level Seminar on Biotechnology and its Applications in Science and Technology held at the Central University of Tamilnadu, Thiruvarur on the 29th and 30th of September 2022.
- **Dr. Danie Kingsley J** delivered an invited talk on “Pulses Your Fuel For Life” during the National Level Seminar on Biotechnology and its Applications in Science and Technology held at the Central University of Tamilnadu, Thiruvarur on the 29th and 30th of September 2022.

FACULTY ACHIEVEMENTS

PATENTS

A patent entitled “Pharmaceutical Composition for comprising 8-shogaol” (Application number – 0019190) was filed in South Korea involving **Prof. Rasool M** and **Ms. Snigdha Samarpita** from VIT, Vellore and Dr.Sanquine Byun and Dr. Seongin Jo from Yonsei University



Prof. Rasool M

CONSULTANCIES

Antimicrobial activity of the effective molecules against pathogens
Funding Agencies - Manushyaa Blossom Private Limited, India
Faculty - **Prof. Jabez Osborne W**
Amount – 25000/-



Prof. Jabez Osborne W

AWARDS

Dr.M.Rasool, has been conferred on Life Time Achievement Award 2020 By
Society of Chemical and Synthetic Biology



MEMORANDUM OF UNDERSTANDING (MOU)

1. SDUAHER-VIT MoU

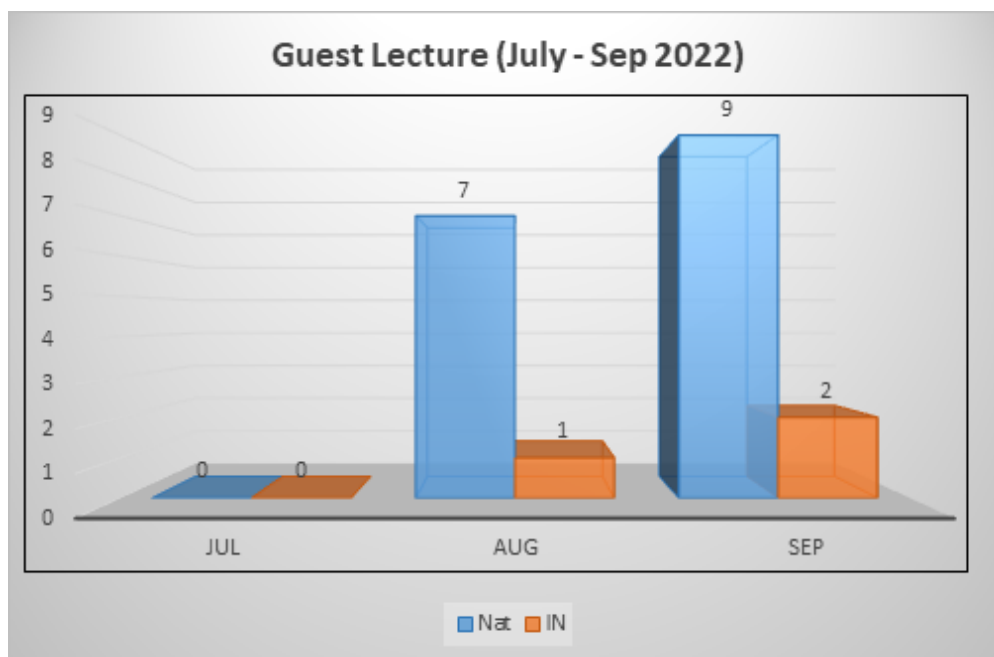
Sri Devaraj Urs Academy of Higher Education and Research signed an MoU with VIT in the month of September 2022



2. MoU was signed in the month of August between Indian Institute of Millets Research (IIMR) an ICAR Institute and VIT.



GUEST LECTURES JULY- SEPTEMBER 2022



NATIONAL GUEST LECTURE REPORT (JULY- SEPTEMBER 2022)

The School of Bio Sciences and Technology organized 16 National expert guest lectures from the academia, the biotech industries and alumni on various emerging topics, which was organized by the SBST faculty members. The Guest lecture was conducted both in offline and in Online platform MS Team's with the participation of the enthusiastic students in gaining updated knowledge in the field of Biotechnology

INTERNATIONAL GUEST LECTURE REPORT (JULY - SEPTEMBER 2022)

| Sl. No. | Title | Speaker | Address | Faculty Convenor |
|---------|--|---------------------------|--|----------------------|
| 1 | Variant interpretation and reporting | Ms. Chinmayee B Nagaraj, | Genetic counselor, Ohio, USA | Dr. Radha Saraswathy |
| 2 | Electroceuticals - A new era in precision medicine | Dr. Bharadwaj Nandhakumar | Research scientists, University of minnesota school, USA | Dr. Tamilselvzhi .R |
| 3 | Neuro immune response during cerebral malaria | Dr. Tarun Keswani | Research Fellow in Medicine, Massachusetts General Hospital, Harvard University, Boston. | Dr. Danie kingsley |
| | | | | |

WORKSHOPS

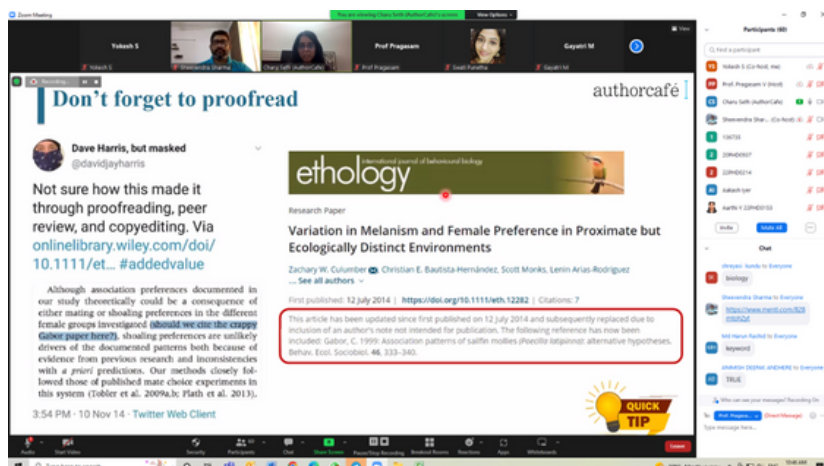
Two-days Lecture cum workshop were conducted on Recent Trends in Food Science and Technology from 9th September 2022 to 10th September 2022 from 9.30 am organised by **Dr. S. Vino** , **Dr. V. Pragasam**, **Dr. C. Ramalingam**, **Dr. Jeevitha G.C** .

| Sl.No | Speaker | Address |
|-------|-----------------------------|--|
| 1. | Dr. H. Umesh Hebbar | Chief Scientist CSIR- CFTRI, Mysuru |
| 2. | Dr. P. Prabhasankar | Senior Principal Scientist CSIR-CFTRI, Mysuru |
| 3. | Dr. Mahendra Mehta | Vice President, Food & Nutraceutical Chemvera Specialty Chemicals Pvt. Ltd. Mumbai |
| 4. | Dr. Alka Chauhan | Manager – Regulatory Affairs Amway India Pvt. Ltd., Gurugram (HO) |
| 5. | Dr. Ram Saran Chaurasiya | Scientist String Bio Private Limited, Bengaluru |
| 6. | Ft. Arnab Guha Founder, | Director & Chief Visionary Officer Impeccable Innovations Pvt. Ltd., Bengaluru |

| | | |
|----|------------------------------|--|
| 7. | Dr. Prabhakaran Ravichandran | Research Scientist, ITC, Bengaluru |
| 8. | Mr. Hemant Giri | Business Development Manager- Food industry Biomerieux |
| 9. | Ms. Vinusha MK | Founder Four Seasons Pastry, Chennai |

RESEARCH AND DEVELOPMENT SERIES

- 1.Dr.K.M.Gothandam**, Department Of Biotechnology, conducted a talk on 'Cyanobacterial research In CIIMAR, Porto Portugal dated 27th July 2022, organized by **Dr.Jayanthi Abraham**.
- 2.Dr. K. Sudhakaran**, Assistant Professor, Department of Integrative Biology, gave a lecture on Aquaculture research in CIIMAR, Porto Portugal on 27th July 2022 organized by **Dr.Jayanthi Abraham**.
- 3.Dr. V. Pragasam** and **Dr. Jayanthi Abraham** organized online session on Manuscript writing by **Dr. Charu seth** Product marketing lead, Authorcafe, Chennai, dated 28th August 2022



4. Dr. P. K. Suresh and Dr. Jayanthi Abraham organized a session on Biotechnology operations, Valuation and biosecurity, talk given by **Dr. Vinod Jyothikumar** operations & Risk management, Consultant, DSS Plus Bengaluru, Karnataka on 30th August 2022.



5. Dr. Kavita A Iyer Ph.D. Mumbai, India conducted a guest lecture on Cryo-electron microscopy unravels molecular mechanisms of disease mutations in RyR1 organized by **Dr. P. K. Suresh and Dr. Jayanthi Abraham** on 7th September 2022.



JOURNAL CLUB PRESENTATIONS (JULY - SEPTEMBER 2022)

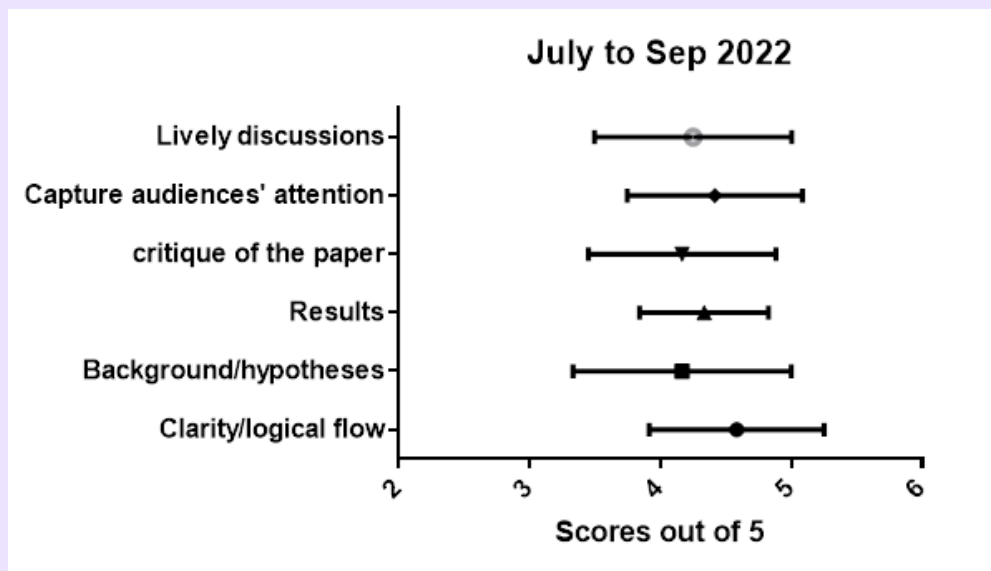
Co-ordinator: Dr. Debasish Mishra

Total number of presentations from July 2022 to Sep 2022

12

In each journal club meeting, a moderator evaluates the presenters by six criteria on a scale of 1 to 5. Overall analysis of the evaluations done for presentations done between July 2022 to Sep 2022 is given below

Areas such as critical analysis of the paper, a vibrant presentation to capture diverse audiences' attention and ability to generate lively discussions need to be improved



PUBLICATION LIST

July

1. Kumar, M., Selvasekaran, P., Kapoor, S., Barbhai, M. D., Lorenzo, J. M., Saurabh, V., ... & Kennedy, J. F. (2022). *Moringa oleifera* Lam. seed proteins: Extraction, preparation of protein hydrolysates, bioactivities, functional food properties, and industrial application. *Food Hydrocolloids*, 107791. <https://doi.org/10.1016/j.foodhyd.2022.107791> **IF: 11.504**
2. Dey, T., Chakraborty, A., Kapoor, A., Warriar, A., Nag, V. L., Sivashanmugam, K., & Shankar, M. (2022). Unusual Hypermucoviscous Clinical Isolate of *Klebsiella pneumoniae* with No Known Determinants of Hypermucoviscosity. *Microbiology Spectrum*, e00393-22. <https://doi.org/10.1128/spectrum.00393-22> **IF: 9.043**
3. Ravichandran, S. R., Venkatachalam, C. D., Sengottian, M., Sekar, S., Ramasamy, B. S. S., Narayanan, M., ... & Raja, R. (2022). A review on fabrication, characterization of membrane and the influence of various parameters on contaminant separation process. *Chemosphere*, 135629. <https://doi.org/10.1016/j.chemosphere.2022.135629> **IF: 8.943**
4. Bommakanti, V., Banerjee, M., Shah, D., Manisha, K., Sri, K., & Banerjee, S. (2022). An overview of synthesis, characterization, applications and associated adverse effects of bioactive nanoparticles. *Environmental Research*, 113919. <https://doi.org/10.1016/j.envres.2022.113919> **IF: 8.431**
5. Chakraborty, R., Renu, K., Eladl, M. A., El-Sherbiny, M., Elsherbini, D. M. A., Mirza, A. K., ... & Gopalakrishnan, A. V. (2022). Mechanism of chromium-induced toxicity in lungs, liver, and kidney and their ameliorative agents. *Biomedicine & Pharmacotherapy*, 151, 113119. <https://doi.org/10.1016/j.biopha.2022.113119> **IF: 7.419**
6. Famurewa, A. C., Mukherjee, A. G., Wanjari, U. R., Sukumar, A., Murali, R., Renu, K., ... & Gopalakrishnan, A. V. (2022). Repurposing FDA-approved drugs against the toxicity of platinum-based anticancer drugs. *Life Sciences*, 120789. <https://doi.org/10.1016/j.lfs.2022.120789> **IF: 6.780**
7. Kumar S U., Balasundaram A., Cathryn R H., Varghese R.P., R S., R G., Younes S., Zayed H., Doss C G.P (2022). Whole-exome sequencing analysis of NSCLC reveals the pathogenic missense variants from cancer-associated genes. *Computers in Biology and Medicine*, 105701. <https://doi.org/10.1016/j.compbimed.2022.105701> **IF: 6.698**
8. Manochkumar, J., Singh, A., Efferth, T., & Ramamoorthy, S. (2022). Untapping the protective role of carotenoids against respiratory diseases. *Phytomedicine*, 154286. <https://doi.org/10.1016/j.phymed.2022.154286> **IF: 6.656**
9. Mukherjee, A. G., Wanjari, U. R., Bradu, P., Murali, R., Kannampuzha, S., Tamizhini, L., ... & Gopalakrishnan, A. V. (2022). The crosstalk of the human microbiome in breast and colon cancer: A metabolomics analysis. *Critical Reviews in Oncology/Hematology*, 103757. <https://doi.org/10.1016/j.critrevonc.2022.103757> **IF: 6.625**
10. Renu, K., Veeraraghavan, V. P., Patil, S., & Gopalakrishnan, A. V. (2022). The peroxisome proliferator-activated receptor-alpha (PPAR- α): A new therapeutic target for oral cancer. *Oral oncology*, 132, 106007. <https://doi.org/10.1016/j.oraloncology.2022.106007> **IF: 5.972**
11. Wilson Alphonse, C. R., Rajesh Kannan, R., & Nagarajan, N. (2022). PITRM1 interaction studies with amyloidogenic nonapeptide mutants of familial Alzheimer's disease. *Journal of Biomolecular Structure and Dynamics*, 1-12. <https://doi.org/10.1080/07391102.2022.2092554> **IF: 5.235**

12. Pandiselvam, R., Kaavya, R., Martinez Monteagudo, S. I., Divya, V., Jain, S., Khanashyam, A. C., ... & Cozzolino, D. (2022). Contemporary Developments and Emerging Trends in the Application of Spectroscopy Techniques: A Particular Reference to Coconut (*Cocos nucifera* L.). *Molecules*, 27(10), 3250. <https://doi.org/10.3390/molecules27103250> **IF: 4.927**
13. Lopes, B. S., Hanafiah, A., Nachimuthu, R., Muthupandian, S., Md Nesran, Z. N., & Patil, S. (2022). The Role of Antimicrobial Peptides as Antimicrobial and Antibiofilm Agents in Tackling the Silent Pandemic of Antimicrobial Resistance. *Molecules*, 27(9), 2995. <https://doi.org/10.3390/molecules27092995> **IF: 4.927**
14. Shobana, N., Prakash, P., Samrot, A. V., Jane Cypriyana, P. J., Kajal, P., Sathiyasree, M., ... & Visvanathan, S. (2022). Purification and characterization of gum-derived polysaccharides of *Moringa oleifera* and *Azadirachta indica* and their applications as plant stimulants and bio-pesticidal agents. *Molecules*, 27(12), 3720. <https://doi.org/10.3390/molecules27123720> **IF: 4.927**
15. Subramanian, K., Balaraman, D., Kaliyaperumal, K., Devi Rajeswari, V., Balakrishnan, K., Ronald Ross, P., ... & Velmurugan, S. (2022). Preparation of an Intelligent pH Film Based on Biodegradable Polymers for Monitoring the Food Quality and Reducing the Microbial Contaminants. *Bioinorganic Chemistry and Applications*, 2022. <https://doi.org/10.1155/2022/7975873> **IF: 4.724**
16. Tayubi, I. A., Kumar S, U., & Doss C, G. P. (2022). Identification of potential inhibitors, conformational dynamics, and mechanistic insights into mutant Kirsten rat sarcoma virus (G13D) driven cancers. *Journal of Cellular Biochemistry*. <https://doi.org/10.1002/jcb.30305> **IF: 4.480**
17. Priyamvada, P., Debroy, R., Anbarasu, A., & Ramaiah, S. (2022). A comprehensive review on genomics, systems biology and structural biology approaches for combating antimicrobial resistance in ESKAPE pathogens: computational tools and recent advancements. *World Journal of Microbiology and Biotechnology*, 38(9), 1-14. <https://doi.org/10.1007/s11274-022-03343-z> **IF: 4.253**
18. Miryala, S. K., Anbarasu, A., & Ramaiah, S. (2022). Organ-specific host differential gene expression analysis in systemic candidiasis: A systems biology approach. *Microbial pathogenesis*, 169, 105677. <https://doi.org/10.1016/j.micpath.2022.105677> **IF: 3.848**
19. Fred, A. L., Kumar, S. N., Kumar Haridhas, A., Ghosh, S., Purushothaman Bhuvana, H., Sim, W. K. J., ... & Gulyás, B. (2022). A Brief Introduction to Magnetoencephalography (MEG) and Its Clinical Applications. *Brain Sciences*, 12(6), 788. <https://doi.org/10.3390/brainsci12060788> **IF: 3.333**

August

1. Beirag, N., Kumar, C., Madan, T., Shamji, M. H., Bulla, R., Mitchell, D., ... & Kishore, U. (2022). Human surfactant protein D facilitates SARS-CoV-2 pseudotype binding and entry in DC-SIGN expressing cells, and downregulates spike protein induced inflammation. *Frontiers in immunology*, 13, 960733. <https://doi.org/10.3389/fimmu.2022.960733> **IF: 8.786**
2. Vellingiri, B., Chandrasekhar, M., Sabari, S. S., Gopalakrishnan, A. V., Narayanasamy, A., Venkatesan, D., ... & Dey, A. (2022). Neurotoxicity of pesticides—A link to neurodegeneration. *Ecotoxicology and Environmental Safety*, 243, 113972. <https://doi.org/10.1016/j.ecoenv.2022.113972> **IF: 7.129**
3. Vellingiri, B., Suriyanarayanan, A., Abraham, K. S., Venkatesan, D., Iyer, M., Raj, N., & Gopalakrishnan, A. V. (2022). Influence of heavy metals in Parkinson's disease: an overview. *Journal of Neurology*, 1-14. <https://doi.org/10.1007/s00415-022-11282-w> **IF: 6.682**
4. Naha, A., Banerjee, S., Debroy, R., Basu, S., Ashok, G., Priyamvada, P., ... & Ramaiah, S. (2022). Network metrics, structural dynamics and density functional theory calculations identified a novel Ursodeoxycholic Acid derivative against therapeutic target Parkin for Parkinson's disease. *Computational and structural biotechnology journal*, 20, 4271-4287. <https://doi.org/10.1016/j.csbj.2022.08.017> **IF: 6.155**

5. Ibezim, A., Onuku, R., Ottih, C., Ezeonu, I., Onoabedje, E., Ramanathan, K., & Nwodo, N. (2022). New sulphonamide-peptide hybrid molecules as potential PBP 2a ligands and methicillin resistant *Staphylococcus aureus* actives. *Journal of Biomolecular Structure and Dynamics*, 1-11. <https://doi.org/10.1080/07391102.2022.2111359> **IF: 5.235**
6. Kuttykattil, A., Raju, S., Vanka, K. S., Bhagwat, G., Carbery, M., Vincent, S. G. T., ... & Palanisami, T. (2022). Consuming microplastics? Investigation of commercial salts as a source of microplastics (MPs) in diet. *Environmental Science and Pollution Research*, 1-13. <https://doi.org/10.1007/s11356-022-22101-0> **IF: 5.190**
7. Arumugam, S. N., Manohar, P., Sukumaran, S., Sadagopan, S., Loh, B., Leptihn, S., & Nachimuthu, R. (2022). Antibacterial efficacy of lytic phages against multidrug-resistant *Pseudomonas aeruginosa* infections in bacteraemia mice models. *BMC microbiology*, 22(1), 1-7. <https://doi.org/10.1186/s12866-022-02603-0> **IF: 4.465**
8. Ansari, M. J., Rajendran, R. R., Mohanto, S., Agarwal, U., Panda, K., Dhotre, K., ... & Pramanik, S. (2022). Poly (N-isopropylacrylamide)-based hydrogels for biomedical applications: A review of the state-of-the-art. *Gels*, 8(7), 454. <https://doi.org/10.3390/gels8070454> **IF: 4.432**
9. Shah, U. J., Alsulimani, A., Ahmad, F., Mathkor, D. M., Alsaieedi, A., Harakeh, S., ... & Haque, S. (2022). Bioplatfroms in liquid biopsy: Advances in the techniques for isolation, characterization and clinical applications. *Biotechnology and Genetic Engineering Reviews*, 1-45. <https://doi.org/10.1080/02648725.2022.2108994> **IF: 4.200**
10. Basu, S., Varghese, R., Debroy, R., Ramaiah, S., Veeraraghavan, B., & Anbarasu, A. (2022). Non-steroidal anti-inflammatory drugs ketorolac and etodolac can augment the treatment against pneumococcal meningitis by targeting penicillin-binding proteins. *Microbial Pathogenesis*, 170, 105694. <https://doi.org/10.1016/j.micpath.2022.105694> **IF: 3.848**
11. Barman, J., Tirkey, A., Batra, S., Paul, A. A., Panda, K., Deka, R., & Babu, P. J. (2022). The Role of Nanotechnology Based Wearable Electronic Textiles in Biomedical and Healthcare Applications. *Materials Today Communications*, 104055. <https://doi.org/10.1016/j.mtcomm.2022.104055> **IF: 3.662**
12. Shakilanishi, S., Mrudula, P., & Shanthi, C. (2022). Production of dehairing protease by *Bacillus cereus* VITSN04: a model cradle-to-cradle approach for sustainable greener production of leathers. *Environmental Technology*, 1-12. <https://doi.org/10.1080/09593330.2022.2102938> **IF: 3.475**

September

1. Chakraborty, P., Das, S. S., Dey, A., Chakraborty, A., Bhattacharyya, C., Kandimalla, R., ... & Dewanjee, S. (2022). Quantum dots: The cutting-edge nanotheranostics in brain cancer management. *Journal of Controlled Release*, 350, 698-715. <https://doi.org/10.1016/j.jconrel.2022.08.047> **IF: 11.467**
2. Padinharayil, H., Varghese, J., John, M. C., Rajanikant, G. K., Wilson, C. M., Al-Yozbaki, M., ... & George, A. (2022). Non-small cell lung carcinoma (NSCLC): Implications on molecular pathology and advances in early diagnostics and therapeutics. *Genes & Diseases*. <https://doi.org/10.1016/j.gendis.2022.07.023> **IF: 7.243**
3. Hemalatha, M., & Devi, C. S. (2022). A statistical optimization by response surface methodology for the enhanced production of riboflavin from *Lactobacillus plantarum*-HDS27: A strain isolated from bovine milk. *Frontiers in Microbiology*, 13. <https://doi.org/10.3389/fmicb.2022.982260> **IF: 6.064**
4. Summers, S., Pek, Y. S., Vinod, D. P., McDougald, D., Todd, P. A., Birch, W. R., & Rice, S. A. (2022). Bacterial biofilm colonization and succession in tropical marine waters are similar across different types of stone materials used in seawall construction. *Frontiers in microbiology*, 13. <https://doi.org/10.3389/fmicb.2022.928877> **IF: 6.064**

5. Ramasubbu, K. (2022). A novel target approach for epithelial-mesenchymal transitioning oral squamous cell carcinoma and their involvement of PI3K/Akt/mTOR and Hedgehog signaling pathway. *Oral Oncology*, 134, 106119-106119. <https://doi.org/10.1016/j.oraloncology.2022.106119> **IF: 5.972**
6. Gainor, K., Castillo Fortuna, Y., Alakkaparambil, A. S., González, W., Malik, Y. S., & Ghosh, S. (2022). Detection and Complete Genome Analysis of Porcine Circovirus 2 (PCV2) and an Unclassified CRESS DNA Virus from Diarrheic Pigs in the Dominican Republic: First Evidence for Predominance of PCV2d from the Caribbean Region. *Viruses*, 14(8), 1799. <https://doi.org/10.3390/v14081799> **IF: 5.818**
7. Govindasamy, R., Govindarasu, M., Alharthi, S. S., Mani, P., Bernaurdshaw, N., Gomathi, T., ... & Thiruvengadam, M. (2022). Sustainable green synthesis of yttrium oxide (Y2O3) nanoparticles using *Lantana camara* leaf extracts: Physicochemical characterization, photocatalytic degradation, antibacterial, and anticancer potency. *Nanomaterials*, 12(14), 2393. <https://doi.org/10.3390/nano12142393> **IF: 5.719**
8. Debroy, R., & Ramaiah, S. (2022). MurC ligase of multi-drug resistant *Salmonella Typhi* can be inhibited by novel Curcumin derivative: Evidence from molecular docking and dynamics simulations. *The International Journal of Biochemistry & Cell Biology*, 151, 106279. <https://doi.org/10.1016/j.biocel.2022.106279> **IF: 5.652**
9. Nath, S., Ghosh, N., Ansari, T. A., Mundhra, A., Patil, M. T., Mane, A., ... & Dey, A. (2022). Genetic diversity assessment and biotechnological aspects in *Aristolochia* spp. *Applied Microbiology and Biotechnology*, 1-16. <https://doi.org/10.1007/s00253-022-12152-1> **IF: 5.560**
10. Abrahamse, H., Hamblin, M. R., & George, S. (2022). Structure and functions of Aggregation-Induced Emission-Photosensitizers in anticancer and antimicrobial theranostics. *Frontiers in Chemistry*, 10. <https://doi.org/10.3389/fchem.2022.984268> **IF: 5.545**
11. Shri Preethi, M., Premkumar, K., & Asha Devi, S. (2022). Molecular docking study on vitamin D supplements to understand their interaction with VDR-RXR α heterodimer and VDRE of TAGAP gene. *Journal of Biomolecular Structure and Dynamics*, 1-10. <https://doi.org/10.1080/07391102.2022.2114939> **IF: 5.235**
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17. Asfha, D., Mishra, T., & Vuppu, S. (2022). Teff Grain-Based Functional Food for Prevention of Osteoporosis: Sensory Evaluation and Molecular Docking Approach. *Plant Foods for Human Nutrition*, 1-9. <https://doi.org/10.1007/s11130-022-01012-y> **IF: 4.124**
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STUDENT ACHIEVEMENTS


| Award | Student | Faculty | Event | University |
|---|---|--------------------------------|---|--|
| Best paper presentation award |  Ms. Jyoti Singh (14PHD0486) | Dr. Alka Mehta | ISMYCO 2022 & ICM 2022 (International Symposium of Mycotoxicology 2022 & International Conference on Mycotoxicology and Food Security) | Kasetsart University, Bangkok, Thailand from 6th to 9th September 2022 |
| Best poster award - Reported in the News column of Current Science (10th Sep 2022 issue) |  Ms. Finola Priyadharshini C (20PHD0937)  Mr. Senthil Kumar H (17MTR0002) | Dr. Everette Jacob Remington N | Advances in Molecular Diagnostics and Precision Medicine 2022 | Anna University, Chennai from 15th to 17th September 2022 |

| | | | | |
|------------------------------|--|-----------------|--|---|
| Best oral presentation award |  Ms. Sowptika Pal - (16PHD0415) | Dr. Anilkumar G | 62nd Annual International Conference of Association of Microbiologists of India | University of Mysore during from 21st to 23rd September 2022 |
| Training |  Ms. Toshika Mishra - 21PHD0218 | Dr. Suneetha V | Workshop and hands-on training on Bacterial Transformation, Protein Purification, Analysis, and Animal Studies | Pentavalent Bio Sciences Private Limited, Bangalore from 22nd to 27th August 2022 |

CONGRATULATIONS



Congratulations to all the Rank Holders

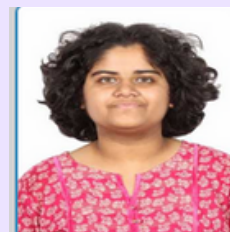
| Batch | Branch and Programme | Rank | Reg. No | Student |
|-------|-------------------------|------|-----------|--|
| 2018 | B.Tech Biotechnology | 1 | 18BBT0022 |  Sneha Suchit Kelkar |

2018

B.Tech
Biotechnology

2

18BBT0128



Pranjali Bhana

2018

B.Tech
Biotechnology

3

18BBT0020



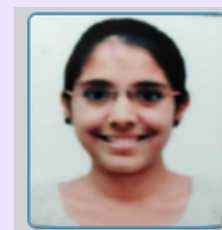
Niniva Ghosh

2020

M.Sc Applied
Microbiology

1

20MSM0010



Rana Jahnavi
Punitkumar

2020

M.Sc Applied
Microbiology

2

20MSM0065



Nimitha Rose Mathew

2020

M.Sc Applied
Microbiology

3

20MSM0001



Sneha Rathore

2020

M.Sc . Biomedical
Genetics

1

20MSG0014



Avanthika R Rani

2020

M.Sc . Biomedical
Genetics

2

20MSG0032



Myla Isha Pereira

2020

M.Sc . Biomedical
Genetics

3

20MSG0066



Ushneet Chhabra

2020

M.Sc Biotechnology

1

20MSB0092



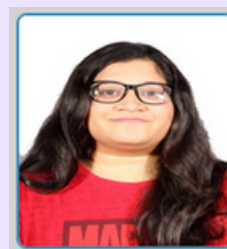
Cheshta Chawra

2020

M.Sc Biotechnology

2

20MSB0008



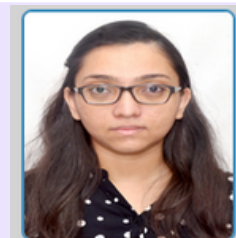
Padgaonkar Mrunali
Mayuresh Siddhi

2020

M.Sc Biotechnology

3

20MSB0007

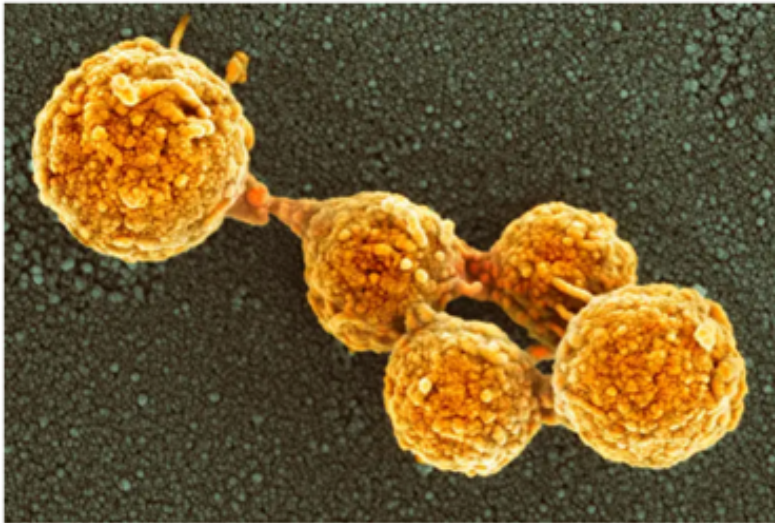


Kasturi Banerjee

| | | | | |
|------|---------------------------------|---|-----------|---|
| 2017 | M.Sc. (Integ.) Biotechnology | 1 | 17MSI0040 |  Aditya Roshan |
| 2017 | M.Sc. (Integ.) Biotechnology | 2 | 17MSI0104 |  Vishnuvarthan Thangarathnam |
| 2017 | M.Sc. (Integ.) Biotechnology | 3 | 17MSI0097 |  Megala U |
| 2020 | M.Tech. Biotechnology | 1 | 20MBT0004 |  Prathik Chatterjee |
| 2020 | M.Tech. Biotechnology | 2 | 20MBT0007 |  Subhadeep Banerjee |
| 2020 | M.Tech. Biotechnology | 3 | 20MBT0043 |  Shivanika C |

STUDENT'S CORNER

SYNTHETIC cells - Artificial life made in the lab can grow and divide like natural bacteria



Some of the first synthetic Mycoplasma bacteria produced by Craig Venter and his colleagues
THOMAS DEERINCK, NOWRYSOURCE PHOTO LIBRARY

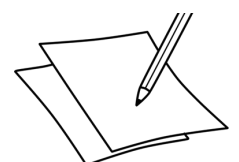
SYNTHETIC cells made by combining components of Mycoplasma bacteria with a chemically synthesized genome can grow and divide into cells of uniform shape and size, just like most natural bacterial cells. In 2016, researchers led by Craig Venter at the J. Craig Venter Institute in San Diego, California, announced that they had created synthetic “minimal” cells. The genome in each cell contained just 473 key genes thought to be essential for life. The cells were named JCVI-syn3.0 after the institute and they were able to grow and divide on agar to produce clusters of cells called colonies.

But on closer inspection of the dividing cells at the time, Venter and his colleagues noticed that they weren’t splitting uniformly and evenly to produce identical daughter cells as most natural bacteria do. Instead, they were producing daughter cells of bizarre shapes and sizes. “[The creators of JCVI-syn3.0] had thrown out all the parts of the genome that they thought was not essential for growth,” says Elizabeth Strychalski at the US National Institute of Standards and Technology. But their definition of what was necessary for growth turned out to be what was needed to make beautiful colonies growing on an agar plate, she says, rather than what was needed to produce cells that divide in a uniform and lifelike way.

“The potential applications are vast, in agriculture, nutrition, biomedicine, and environmental remediation,” says Jef Boeke at New York University. “The ability to correct and refine biological code like this is a crucial step to getting us there.”

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By **Pousali Das -19BBT0228**



PROGRAMMES OFFERED

B. Tech Biotechnology
M. Tech Biotechnology
**M.Sc Integrated Food Science
and Technology**
M.Sc Biomedical Genetics
M.Sc Applied Microbiology
**M.Sc Integrated Biotechnology
(5 years)**
M.Sc Biotechnology
Doctor of Philosophy (Ph.D)
Integrated Ph.D

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