



DR. SOUVIK ROY



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Ph.D. (Microbiology), **M.Phil.** (Microbiology), **M.Sc.** (Microbiology, **1st Class 1st, GOLD-MEDALIST**), **B.Sc.** (Microbiology, **1st Class 1st, GOLD-MEDALIST**), Joint CSIR-UGC NET qualified, GATE-qualified, 75th Rank Holder in Madhyamik Examination

PROFESSIONAL PROFILE-----

**‘TEACHING EXCELLENCE’,
‘MICROBIOLOGISTS SOCIETY INDIA
(MBSI) BEST TEACHER’ &
‘BHARAT JYOTI PURASKAR’ Awardee**

**STATE
COORDINATOR,
WEST BENGAL,
MBSI**

**Total Teaching
Experience:
22+ years**

- **Assistant Professor (Grade III)**, Post-Graduate & Research Department of Biotechnology, St. Xavier's College (Autonomous), 30, Mother Teresa Sarani, Kolkata – 700016.
- **Vice-Deputy President**, Entrepreneurship Development Cell & Incubation Centre (EDCIC), St. Xavier's College (Autonomous), Kolkata.
- **Secretary**, Animal Ethics Committee (AEC), St. Xavier's College (Autonomous), Kolkata.
- **Marketing Advisor (Faculty)**, Enactus, St. Xavier's College (Autonomous), Kolkata.
- **Member**, Xaverian Research Yearbook Committee, St. Xavier's College (Autonomous), Kolkata.
- **Member**, College Magazine Committee (CMC), St. Xavier's College (Autonomous), Kolkata.
- **Member**, Different NAAC Committees, St. Xavier's College (Autonomous), Kolkata.

EDUCATIONAL PROFILE-----

- **Ph.D.** in **Microbiology** (Specialization: **Medical Microbiology**) [Ph.D. Thesis Title: Assessment of the Potency of Garlic as a Natural, Anti-TB Phytomedicine]
- **M.Phil** in **Microbiology** (Specialization: **Food & Industrial Microbiology**) [M.Phil. Thesis Title: Microorganisms in Cut Cucumber and Their public health significance]
- **M.Sc** in **Microbiology** (**1st Class 1st – GOLD MEDALIST**) [M.Sc. Summer Research Project Thesis Title: Microbiological Studies of *Salmonella enterica* Serotype Typhimurium isolated from hospitalized pediatric Diarrhea cases in Kolkata]
- **B.Sc** in **Microbiology** (**1st Class 1st – GOLD MEDALIST**)
- **Joint CSIR-UGC NET (Life Sciences)** qualified
- **GATE (Life Sciences)** qualified

ACADEMIC HONORS AND AWARDS

- Recipient of **TEACHING EXCELLENCE AWARD 2025** from Nozarax Audentias (OPC) Pvt. Ltd., an ISO 9001:2015 certified Academic Organization registered under **Ministry of Corporate Affairs and Ministry of Micro, Small and Medium Enterprises, Government of India**.
- Appointed as the **STATE COORDINATOR** of **THE MICROBIOLOGISTS SOCIETY, INDIA (MBSI)** for the State Unit of West Bengal.
- Awarded with the **'BEST TEACHER AWARD 2020-21' (from the State of West Bengal) (NATIONAL-LEVEL AWARD)** from Microbiologists Society, India (MBSI; Reg. No. MAHA/4814/SAT), in recognition of **'Contribution towards Academics & Research for over the past 21 years'**.
- Awarded with the **'BHARAT JYOTI PURASKAR 2018' (NATIONAL-LEVEL AWARD)** from the Best Citizen Publishing House, New Delhi, in recognition of **'Exceptional Calibre and Outstanding Performance in Academics & Research'**.
- Received the **BEST ORAL PRESENTATION AWARD (INTERNATIONAL-LEVEL AWARD)** for the Original Research Paper "Pre-Treatment With Scopolamine Naturally Suppresses Japanese Encephalitis Viral Load In Embryonated Chick Through Modulation Of TLR & Type-I IFN Signaling Pathways" at Biospectrum 2020, an International Conference on Biotechnology and Biological Sciences, organized by the Department of Biotechnology, University of Engineering & Management (UEM), Kolkata in collaboration with SMART Society, USA, Indian Ecological Society and Microbiologists' Society India.
- Received the **BEST ORAL PRESENTATION AWARD (NATIONAL-LEVEL AWARD)** on "Assessing Public Health and Sanitation Status to promote Preventive Healthcare In India" at a National Conference on "Current Industrial Trends in Life Science Research", 2023, organized by ITLS Academy, Lucknow and Microbiologists Society, India (MBSI; Reg. No. MAHA/4814/SAT).
- Awarded with the **BEST POSTER AWARD (INTERNATIONAL-LEVEL AWARD)** in Poster Competition (entitled: "Packaged Drinking Water and Soft Drinks – A Second Thought!!") at the International Seminar on 'Frontiers in Biological Science (FIBS)', 2018, sponsored by the Department of Science & Technology, Govt. of West Bengal, and organized by the Department of Microbiology, St. Xavier's College (Autonomous), Kolkata.
- Received the **BEST POSTER AWARD (NATIONAL-LEVEL AWARD)** (entitled: "Green Pharmacy & Garlic – A Potential Cure for MDR-TB") at the National Symposium on 'Interface Areas between Chemical and Biological Sciences', 2018, organized by Advanced Research Centre, Department of Microbiology, Lady Brabourne College, Kolkata, in prestigious collaboration with Royal Society of Chemistry, Eastern India Section.
- Received the **3rd BEST POSTER AWARD (INTERNATIONAL-LEVEL AWARD)** on "Isolation and Characterization of Notorious Food-Borne Bacterial & Fungal Pathogens from Chocolates of Three Popular Brands of India: A Novel Look Through" at the International Conference on "Emerging Trends in Bio-engineering and Food Technology (ETBFT-2025)", organized by the Department of Food Technology, Guru Nanak Institute of Technology, Kolkata, India.
- Awarded with the **SECOND PRIZE (NATIONAL AWARD)** in the International Level Critical Essay Writing Competition on the Theme "How Science Should Be Taught?" at the India International Science Festival (IISF), 2020, organized by Ministry of Science and Technology, Ministry of Earth Sciences, and Ministry of Health and Family Welfare, Govt. of India, in collaboration with Vijnana Bharati (VIBHA) by Council of Scientific & Industrial Research (CSIR).
- Qualified in the **Joint CSIR-UGC NET Examination (in Life Sciences)** (All India Rank-47).
- Qualified in the **GATE Examination (in Life Sciences)** (All India Rank – 739 out of 10900 candidates appeared).
- **1st Class 1st in M.Sc. (2 year) Examination (in Microbiology)** from University of Calcutta (**GOLD MEDALIST**).
- **1st Class 1st in B.Sc. (3 year) Examination (in Microbiology)** from University of Calcutta (**GOLD MEDALIST**).
- Received a **'Merit Award'** from United Bank of India Employees' Cooperative Credit Society Limited for getting **Star-Marks in the H.S. Examination**.
- Received a **'Merit Award'** at the 'Kolkata Nagarik Sammelan, Ward No. 67' for the **75th All-Bengal Rank in the Madhyamik Examination**.

PROFESSIONAL COURSES COMPLETED

- ☐ Participated and successfully completed the **UGC-Sponsored Short Term Programme in Environmental Studies**, organized by the UGC-Malaviya Mission Teacher Training Centre (MMTTC), **Bharathidasan University**, from 5th August 2025 – 11th August 2025 with **Grade A**.
- ☐ Participated and successfully completed the **Faculty Development Programme (FDP) on ‘Generative AI Tools for Smart Teaching’**, organized by **All India Association for Christian Higher Education (AIACHE)**, **New Delhi**, from 9th June 2025 – 13th June 2025.
- ☐ Participated and successfully completed the **UGC-sponsored Short-Term Course on ‘Research Methodology in Science and Technology’**, organized by UGC-Human Resource Development Centre (HRDC), **University of Calcutta**, from 6th February 2024 – 12th February 2024.
- ☐ Participated and successfully completed the **UGC-sponsored Refresher Course in Life Science**, organized by UGC-Human Resource Development Centre (HRDC), **University of Calcutta**, from 5th January 2022 – 18th January 2022, with **Grade A⁺**.
- ☐ Participated and successfully completed the **UGC-sponsored Refresher Course in Biotechnology**, organized by UGC-Human Resource Development Centre (HRDC), **University of Calcutta**, from 6th November 2017 – 26th November 2017, with **Grade A**.
- ☐ Participated and successfully completed the **UGC-sponsored Orientation Programme (OP-112)**, organized by UGC-Human Resource Development Centre (HRDC), **University of Calcutta**, from 1st December 2015 – 30th December 2015, with **Grade A**.

ADMINISTRATIVE PROFILE

- ☐ **Vice-Deputy President**, Entrepreneurship Development Cell & Incubation Centre (EDCIC), St. Xavier’s College(Autonomous), Kolkata.
- ☐ **Secretary**, Animal Ethics Committee (AEC), St. Xavier’s College (Autonomous), Kolkata.
- ☐ **Marketing Advisor (Faculty)**, Enactus, St. Xavier’s College (Autonomous), Kolkata.
- ☐ **Member**, Xaverian Research Yearbook Committee, St. Xavier’s College (Autonomous), Kolkata.
- ☐ **Member**, College Magazine Committee (CMC), St. Xavier’s College (Autonomous), Kolkata.
- ☐ **Member**, different NAAC Committees, St. Xavier’s College (Autonomous), Kolkata.
- ☐ **Member**, different other Committees and Sub-Committees, St. Xavier’s College (Autonomous), Kolkata.
- ☐ **Member**, Executive Body of St. Xavier’s College Teachers’ Association (SXCTA), St. Xavier’s College (Autonomous), Kolkata (July 2017 – June 2018).
- ☐ **Head of the Department of Microbiology** (Honours and General courses), Sarsuna College, Kolkata, affiliated to University of Calcutta (August 2004 – March 2013).

TEACHING PROFILE

- ☐ **PRESENT:**
As **Assistant Professor (Grade III)** in the Post-Graduate & Research Department of Biotechnology, St. Xavier’s College (Autonomous), Kolkata (2013-till date).
- ☐ **PAST:**
 - ✓ As **Head**, Department of Microbiology (Honours and General courses), Sarsuna College, Kolkata (affiliated to University of Calcutta) (2004–2013; 9 years).
 - ✓ As **Guest Lecturer** in the Department of Chemical Technology, University of Calcutta.
 - ✓ As **Guest Lecturer** in the Post-Graduate Department of Microbiology, Lady Brabourne College, Kolkata (affiliated to University of Calcutta).
 - ✓ As **Guest Lecturer** in the Post-Graduate Department of Microbiology, Vijaygarh Jyotish Ray College, Kolkata (affiliated to University of Calcutta).

RESEARCH PROFILE

- ☐ **Research experience:** 2006-till date.

□ **Present Research Interests:**

➤ ***Different aspects of Medical Microbiology:***

- a) Although commercially-available toilet-seat sanitizers claim to be effective in killing the responsible uropathogens, their efficacies need to be checked periodically and compared, particularly keeping in mind the rapid emergence of multi-drug resistant (MDR)- and new strains of uropathogens.
- b) In recent times, there has been an increased quest for alternative novel herbal drugs to ameliorate the mammoth problem of new antimicrobial resistance (AMR) mechanisms. Antioxidant and antimicrobial activities in the leaves of some common mountainous gymnosperms and angiosperms have not been assessed till date. The present research focus of our lab is to conduct *in vitro* phytochemical screening of radical-scavenging (antioxidant) properties and antibacterial activities of the organic extracts of the leaves of such plants against drug-sensitive (DS) and drug-resistant (DR)-bacterial strains **[Successfully completed the Intramural Research Grant from St. Xavier's College (Autonomous), Kolkata for this Study].**

➤ ***Different aspects of Food Microbiology:***

- a) Mycotoxins are highly toxic secondary metabolites produced by molds that are among the most dangerous natural food contaminants of humans, capable of causing acute food poisoning, severe internal organ damage, immunosuppression, and even, cancer. Our lab presently focusses on developing phytochemical-based drug candidates for detoxification and neutralization of mycotoxins, and reduction of systemic toxicity through structure-based drug design and *in silico* approaches.
- b) Our lab focusses on the assessment of the microbiological quality of various fruits and their endospermic liquids, confectionaries (like: chocolates), and street-vended and shop-sold food and beverages: In a country like India, especially in Kolkata, consuming food and beverages from itinerant street vendors and roadside stalls is very common. As these unhygienically-sold eatables and drinks are very prone to huge microbial contamination, a periodic assessment of their sanitary qualities and tracing down ways to maintain their proper hygienic qualities should always be the top priority for an overall societal benefit.

□ **Research Project (Completed):**

- **Project title:** *In vitro* phytochemical screening of Antioxidant and Antibacterial activities of Leaf Extracts of Pine, Fir and Chinar, and Virtual Screening to identify potential Lead Compounds as Antibacterial Agents.
- **Granting Agency:** St. Xavier's College (Autonomous), Kolkata [Intramural Research Grant (Sanction No: IMSXC2023-24/05; dated 18th August 2023)]
- **Period of Sanction:** 2-year (2023-2025)

RESEARCH GUIDANCE-----

- Guide of one Post-Graduate **Dissertation Trainee** of the 5-Year Integrated Course in Biotechnology, St. Xavier's College (Autonomous), Kolkata, on Medical Microbiology, in 2026.
- Guide of **Summer Research Project** of three Post-graduate students (Post-Semester 6) of the 5-Year Integrated Course in Biotechnology, St. Xavier's College (Autonomous), Kolkata, on Food Microbiology, in 2025.
- Guide of **Summer Research Project** of seven Post-graduate students (Post-Semester 6) of the 5-Year Integrated Course in Biotechnology, St. Xavier's College (Autonomous), Kolkata, on Food Microbiology, in 2024.
- Guide of **Summer Research Project** of one Graduate student (Semester 6) of Brainware University, Kolkata, on Medical Microbiology, in 2024.
- Guide of **Summer Research Project** of three Post-graduate students (Post-Semester 6) of the 5-Year Integrated Course in Biotechnology, St. Xavier's College (Autonomous), Kolkata, on Medical Microbiology, in 2023.
- Guide of **Summer Research Project** of four Post-graduate students (Post-Semester 6) of the 5-Year Integrated Course in Biotechnology, St. Xavier's College (Autonomous), Kolkata, on Medical Microbiology, in 2019.

- Guide of **Summer Research Project** of one Post-graduate student (Post-Semester 8) of the 5-Year Integrated Course in Biotechnology, St. Xavier's College (Autonomous), Kolkata, on Molecular Microbiology & Microbial Biochemistry, in 2019.
- Co-guide of **Summer Research Project** of two Post-graduate students (PG Semester 4) of the Department of Microbiology, Lady Brabourne College, Kolkata, on "Effect of aqueous extract of garlic on multi drug resistant (MDR) *Mycobacterium smegmatis*" with Prof. (Dr.) Aditi Nag Chaudhuri, Head, Department of Microbiology, Lady Brabourne College, Kolkata, in 2015.
- Co-guide of **Summer Research Project** of one Post-graduate student (PG Semester 4) of the Department of Microbiology, Lady Brabourne College, Kolkata, on "Effect of Garlic Extract on NOS expression in *Mycobacterium smegmatis* by using Western Blotting" with Prof. (Dr.) Aditi Nag Chaudhuri, Head, Department of Microbiology, Lady Brabourne College, Kolkata, in 2014.
- Co-guide of **Summer Research Project** of one Post-graduate student (PG Semester 4) of the Department of Microbiology, Lady Brabourne College, Kolkata, on "Effect of Garlic Extract on Micro RNA synthesis by *Mycobacterium smegmatis*" with Prof. (Dr.) Aditi Nag Chaudhuri, Head, Department of Microbiology, Lady Brabourne College, Kolkata, in 2013.

PUBLICATION PROFILE

a) Original Research & Review Papers in Peer-Reviewed Journals:

1. Chattopadhyay, D., Saha, A., Tendulkar, D., Banerjee, T., **Roy, S.**, Choudhury, L., Rajendran, R.L., Gangadaran, P., Ahn, B.C. (2026). Targeting tumor metabolism through precision nutrition: A therapeutic strategy to improve cancer outcomes. **World Journal of Clinical Oncology (WoS-indexed)**. [ISSN (Online): 2218- 4333; **Impact Factor = 3.6**] **[INVITED ARTICLE]** (In Press).
2. **Roy, S.**, Mukherjee, S., Banerjee, A. and Choudhury, L. (2026). Investigating the Role of Bioactive Compounds from *Artemisia annua* in restoring functionality of p53 in cases of Oral Squamous Cell Carcinoma triggered by R280K mutation. **International Journal of Biology, Pharmacy and Allied Sciences (UGC approved)**. [ISSN (Online): 2277- 4998; **Impact Factor = 2.921**] (In Press).
3. **Roy, S.**, Roy, S., Pramanik, S., Chattopadhyay, S., and Choudhury, L. (2026). Unveiling the Pathogen Load and their Multi Drug Resistance in street-vended Coconut Water in Kolkata, India: A Pioneering Insight. **Acta Scientific Microbiology (Scopus-indexed)**. [ISSN (Online): 2581-3226; **Impact Factor = 1.416**] (In Press).
4. Sarkar, S., **Roy, S.** & Choudhury, L. (2026). Future perspectives for potential therapeutic targeting of liquid liquid phase separation in pathological immunologic condensate signalling ensembles. **Discover Chemistry (WoS-indexed)**, 3, 396 [ISSN (Online): 3005-1193].
5. Sarkar, S., **Roy, S.**, & Choudhury, L. (2026). Leveraging engineered small EVs to mitigate cancer pain: a new paradigm. **Journal of Microencapsulation (WoS-indexed)**, 1–21. [ISSN (Online): 1464-5246; **Impact Factor = 3.2**].
6. Sarkar, S., **Roy, S.**, and Choudhury, L. (2026). Importance of the inflammasome in gut-brain axis: from pathological driver to therapeutic target. **Inflammopharmacology (WoS-indexed)**. [ISSN (Online): 1568-5608; **Impact Factor = 6.3**].
7. Banerjee, M., Dey, A., **Roy, S.**, Banik, S.P., & Sarkar, D. (2026). Exploring the functional evolution of Intrinsically Disordered protein regions in p53. **Journal of Experimental Zoology, India (Scopus-indexed)**. 29:2, 1209-1218. [ISSN (Online): 0976-1780].
8. Sarkar, S., **Roy, S.**, and Choudhury, L. (2026). Exosomes-mediated intercellular communication and their theragnostic potential against cancer and related disorders: a comprehensive review. **Biotechnology Letters (WoS-indexed)**. 48:67 [ISSN (Online): 1573-6776; **Impact Factor = 2.1**].
9. **Roy, S.**, Bhattacharjee, D., Gupta, H., Choudhury, L., and Sarkar, S. (2026). Microbial Characterization of Chocolates of Three Popular Commercial Brands: A Complete Profiling of Notorious Bacterial and Fungal Contaminants. **Acta Scientific Microbiology (Scopus-indexed)**. 9.5:3-19. [ISSN (Online): 2581-3226; **Impact Factor = 1.416**].
10. **Roy, S.**, Chattopadhyay, D., Choudhury, L., Ghosh, S. and Mahajan, A.A. (2025). Harnessing the power of faecal microbiota transplantation: optimizing neuroimmune function for improved treatment of Parkinson's, Alzheimer's, and multiple sclerosis. **Discover Neuroscience (UGC approved)**. 20, 21. [ISSN (Online): 3005-1827; **Impact Factor = 4.0**].
11. **Roy, S.**, Banerjee, D., Banerjee, A. and Choudhury, L. (2025). Sex hormones and gender differences in immune responses and anticancer immunity: A comprehensive review. **Biologia Futura (UGC approved)**. 77(1):1-27. [ISSN (Print): 2676-8615; ISSN (Online): 2676-8607; **Impact Factor = 1.5**].

12. Sarkar, S., **Roy, S.** and Choudhury, L (2025). Arbuscular mycorrhiza symbiosis—from molecular dialogues to biotechnological applications. **Mycological Progress (UGC approved)**. 24:67. [ISSN (Online): 1861-8952; **Impact Factor = 3.0**].
13. **Roy, S.**, Sarkar, S., and Choudhury, L. (2025). Microbial Compounds in Cosmetic Formulations: A Comprehensive Review. **International Journal of Biology, Pharmacy and Allied Sciences (UGC approved)**. 14(8): 4638-4661 [ISSN (Online): 2277-4998; **Impact Factor = 2.659**].
14. **Roy, S.**, Sarkar, S., Paul, U., Biswas, A., Bera, A. and Choudhury, L. (2025). Quinones and their pharmaco-physiological roles in Prokaryotes and Eukaryotes: A Comprehensive Review. **Applied Biochemistry and Microbiology (UGC approved)**. [ISSN (Print): 0003-6838; ISSN (Online): 1608-3024; **Impact Factor = 1.1**].
15. Das, M., Chakraborty, M., Das, P., Santra, S., Mukherjee, A., Das, S., Banyai, K., **Roy, S.**, Choudhury, L., Gupta, R., Dey, T., Das, D., Bose, A., Ganesh, B. & Banerjee, R. (2024). System biology approaches for systemic diseases: Emphasis on type II diabetes mellitus and allied metabolism. **Biocatalysis and Agricultural Biotechnology (Elsevier) (UGC approved)**. 58:103176. [ISSN (Online): 1878-8181; **Impact Factor = 3.8**].
16. **Roy, S.**, Mukherjee, P., Kundu, S., Majumder, D. & Raychaudhuri, V. (2024). Microbial Infections in Burn Patients. **Acute and Critical Care (UGC approved)**. 39(2): 214-225. [ISSN (Print): 2586-6052; ISSN (Online): 2586-6060; **Impact Factor = 2.0**].
17. **Roy, S.**, Ray, D., Laha, I., & Choudhury, L. (2024). Human Mycobiota and Its Role in Cancer Progression, Diagnostics and Therapeutics: A Link Lesser-Known. **Cancer Investigation (Taylor & Francis) (UGC approved)**. 1-19. [ISSN (Print): 0735-7907; ISSN (Online): 1532-4192; **Impact Factor = 2.4**].
18. Bhattacharjee, A., Naga, R., Saha, M., Karmakar, S., Pal, A. & **Roy, S.** (2023). Viral inhibitory potential of hyoscyamine in Japanese encephalitis virus-infected embryonated chicken eggs involving multiple signaling pathways. **Archives of Virology (Springer) (UGC approved)**. 168:264. [ISSN (Print): 0304-8608; ISSN (Online): 1432-8798; **Impact Factor = 2.5**].
19. **Roy, S.** (2023). Assessing Public Health and Sanitation Status To Promote Preventive Healthcare In India. **International Journal of Biotechnology and Allied Fields (UGC approved)**. 11(10):105-116 [ISSN (Online): 2320-0774].
20. **Roy, S.**, Majumder, S., Deb, A., & Choudhury, L. (2023). Microbial contamination of cosmetics and the pharmaceutical products, and their preservation strategies: A comprehensive review. **Novel Research in Microbiology Journal (UGC approved)**. 7(5):2116-2137 [ISSN (Print): 2537-0286; ISSN (Online): 2537-0294; **Impact Factor = 1.0**].
21. **Roy, S.**, Manna, S., Chowdhury, S., & Choudhury, L. (2023). Improvement of Large-Scale Production of Lignocellulosic Bioethanol through Synthetic Biology Approaches: A Comprehensive Review. **World Journal of Biology Pharmacy and Health Sciences (UGC approved)**. 14:316-331 [ISSN (Online): 2582-5542].
22. **Roy, S.**, Shaw, D., Sarkar, T., & Choudhury, L. (2023). Mycotoxins in fermented foods: A comprehensive review. **Novel Research in Microbiology Journal (UGC approved)**. 7(2):1897-1917 [ISSN (Print): 2537-0286; ISSN (Online): 2537-0294; **Impact Factor = 1.0**].
23. **Roy, S.**, Chakrabarty, S., Pal, R. and Choudhury, L. (2023) Combating SARS-CoV-2: A Comparison between mRNA Vaccines and Killed Whole Cell Vaccines. **International Journal of Biology, Pharmacy and Allied Sciences (UGC approved)**. 12(4):1781-1798 [ISSN (Online): 2277-4998; **Impact Factor = 1.892**].
24. **Roy, S.**, Mullick, S., Chakrabarty, S. and Choudhury, L. (2023) Pathogen-based Molecular Mimicry and Autoimmune Disorders: A Close Look. **International Journal of Biology, Pharmacy and Allied Sciences (UGC approved)**. 12(4):1701-1716 [ISSN (Online): 2277- 4998; **Impact Factor = 1.892**].
25. **Roy, S.**, Banerjee, S., Bhowmick, P. and Choudhury, L. (2023) Psychobiotics: Deciphering its role in neuropsychiatry. **World Journal of Biology Pharmacy and Health Sciences (UGC approved)**. 13(01):457–464 [ISSN (Online): 2582-5542].
26. **Roy, S.**, Majumder, S., Deb, A. and Choudhury, L. (2023) Various Types and Effects of Microbial Contamination in Cosmetics and Pharmaceutical Products, and their Preservation Strategies. **Aviskaar: A Xavierian Journal of Research** [ISSN (Print): 2277-8411; ISSN (Online): 2278-1048].
27. **Roy, S.**, Laha, I., Ray, D. and Choudhury, L. (2022) Influence of Climate Change & Environmental Toxicants on Epigenetic Modifications. **World Journal of Environmental Biosciences (UGC approved)**. 11(3):21-29 [ISSN (Online): 2277-8047; **Impact Factor = 0.976**].

28. Roy, S., Bhowmick, P., Mukherjee, P., Dey, K. and Choudhury, L. (2022) Mucormycosis in COVID-19 patients: a fungal disease decoded. **International Journal of Biology, Pharmacy and Allied Sciences (UGC approved)**. 11(11):4979-4995 [ISSN (Online): 2277-4998; **Impact Factor = 1.892**].
29. Roy, S., Banerjee, A., Mullick, S. and Choudhury, L. (2022) Hunt for non-antibiotic antibacterial approaches: A possible game changer? **International Journal of Biology, Pharmacy and Allied Sciences (UGC approved)**. 11(8):3643-3656 [ISSN (Online): 2277-4998; **Impact Factor = 1.892**].
30. Roy, S., Nag, S., Saini, A. and Choudhury, L. (2022) Association of human gut microbiota with rare diseases: A close peep through. **Intractable & Rare Diseases Research (UGC approved)**. 11(2):52-62. doi:10.5582/irdr.2022.01025. [ISSN (Print): 2186-3644; ISSN (Online): 2186-361X; **Impact Factor = 1.295**].
31. Roy, S., Roy, L., Khatun, Z. and Sarangi, N. (2022) Gut Microbiome Therapy: A Future Biotechnological Wonder. **Avikaar: A Xavierian Journal of Research** [ISSN (Print): 2277-8411; ISSN (Online): 2278-1048].
32. Roy, S., Choudhury, L., and Sarangi, N. (2022) COVID-19, Long COVID and its Neurological Effects. **International Journal of Biology, Pharmacy and Allied Sciences (UGC approved)**. 11(3):1151-1165 [ISSN (Online): 2277-4998; **Impact Factor = 1.318**].
33. Roy, L., Roy, S., Siddhanta, U., Siddhanta, A. (2021) Prevalence of antibiotic-resistant pathogenic bacteria from canal bank soils in and around Kolkata, India. **International Journal of Environmental Studies (Taylor & Francis) (UGC approved)**. 9:1-15. doi: 10.1080/00207233.2021.1966249. [ISSN (Print): 1735-1472; ISSN (Online): 1735-2630; **Impact Factor = 2.86**].
34. Roy, S., Bhattacharjee, A., Chaudhuri, R., Dash, J.J., Saha, M., Choudhury, L. (2021) Pre-treatment with Scopalamine naturally suppresses Japanese Encephalitis Viral Load in Embryonated Chick through regulation of multiple signaling pathways. **Applied Biochemistry and Biotechnology (Springer) (UGC approved)**. 193:1654–1674. doi: 10.1007/s12010-021-03526-8. [ISSN (Print): 0273-2289; ISSN (Online): 1559-0291; **Impact Factor = 2.277**].
35. Roy, S., Ghorai, S., Choudhury, L., Das, A., Banik Ghosh, R. and Banik, S.P. (2021) Advances in cellulosic enzyme technologies for enhanced stability and catalysis. **Journal of Advanced Scientific Research (UGC approved)**. 12(2) Suppl 1:49-65 [ISSN (Online): 0976-9595].
36. Roy, S. and Sarangi, N. (2021) Neurological Impact of COVID-19 and its Effect on Pediatric Population: A Comprehensive Review. **Avikaar: A Xavierian Journal of Research** [ISSN (Print): 2277-8411; ISSN (Online): 2278-1048].
37. Roy, S., Datta, A., Ghosh, A., Mandal, G., Banerjee, S. and Roy, L. (2020) Studies on the susceptibility of Common Uropathogens to Toilet Seat Sanitizers and their Antibigram. **International Journal of Biology, Pharmacy and Allied Sciences (UGC approved)**. 9(9):2212-2230. doi:10.31032/IJBPAS/2020/9.9.5178. [ISSN (Online): 2277-4998; **Impact Factor = 1.318**].
38. Choudhury, L., Roy, S. and Chakrabarti, K. (2020) Microorganisms in Khoa, the base of Indian Sweets, and their Impact on Public Health. **International Journal of Biology, Pharmacy and Allied Sciences (UGC approved)**. 9(9):2132-2149. doi:10.31032/IJBPAS/2020/9.9.5171. [ISSN (Online): 2277-4998; **Impact Factor = 1.318**].
39. Roy, S., Bhattacharjee A., Roy, L. and Das, S. (2020) Recent Advances Towards The Development and Applications of Novel Therapeutics against Chikungunya Virus Infections. **International Journal of Pharmaceutical Sciences and Research (UGC approved)**. 11(12): 6503-6513 [ISSN (Print): 2320-5148; ISSN (Online): 0975-8232].
40. Roy, S., Roy, L. and Das, N. (2019) Microbes in my ‘Cup of Tea’. **Journal of The Botanical Society of Bengal**. 73(2):95-102 [ISSN (Print): 0971-2976].
41. Roy, S., Roy, L. and Das, N. (2019) Peeping into The Kettle: A Review on the Microbiology of ‘Made Tea’. **International Journal of Pharmacy and Biological Sciences (UGC approved; MCI approved)**. 9(1):842-849. doi: 10.21276/ijpbs.2019.9.1.108 [ISSN (Print): 2321-3272; ISSN (Online): 2230-7605].
42. Roy, S., Roy, L. and Das, N. (2018) Bacteria – the New ‘Magic Bullet’ against Cancer! **Indian Science Cruiser (UGC approved)**. 32(6):25-31. doi: 10.24906/isc/2018/v32/i6/179815 [**SEARCH & SURVEY ARTICLE**] [ISSN (Print): 0970-4256].
43. Roy, S. and Nag Chaudhuri, A. (2018) Effects of Crude Aqueous Garlic Extract on Multi-Drug Resistant (MDR) *Mycobacterium smegmatis*. **International Journal of Herbal Medicine**. 6(2):7-12. [ISSN (Print): 2394-0514; ISSN (Online): 2321-2187; **Impact Factor = 2.47**].
44. Das, N. and Roy, S. (2018) Nanobodies: Ushering in of an Era of Novel Therapeutic and Research Prospects. **Avikaar: A Xavierian Journal of Research**. 10(1):21-29 [ISSN (Print): 2277-8411;

ISSN (Online): 2278-1048].

45. **Roy, S.,** Roy, L. and Guha, A.K. (2017) Microorganisms in Cut Cucumber and their Public Health Significance. **International Journal of Food and Fermentation Technology**. 7(2):241-246. doi: 10.5958/2321-5771.2017.00033.3 [ISSN (Print): 2249- 1570; ISSN (Online): 2277-9396].
46. **Roy, S.** and Nag Chaudhuri, A. (2017) Current Havoc of TB and its Alleviation by Green Pharmacy. **Indian Science Cruiser (UGC approved)**. 31(3):43-49 **[FEATURE ARTICLE]** [ISSN (Print): 0970-4256].
47. **Roy, S.** and Nag Chaudhuri, A. (2016) Changes in Signal Cross-talking in *Mycobacterium smegmatis* infected Murine Macrophages in presence of Aqueous Garlic Extract. **International Journal of Applied Research**. 2(5):810-816. [ISSN (Print): 2394-7500; ISSN (Online): 2394-5869; **Impact Factor = 5.2**].
48. **Roy, S.** and Nag Chaudhuri, A. (2015) Bactericidal Effect of Garlic Extract on *Mycobacterium smegmatis*. **International Journal of Scientific Research**. 4(3):1-6. [ISSN: 2277-8179; **Impact Factor = 3.2416**].

b) Original Research Papers in Conference Proceedings:

1. **Roy, S.,** Bhattacharjee, D., Gupta, H. and Sarkar, S. (2025). Isolation and Characterization of Notorious Food-Borne Bacterial & Fungal Pathogens from Chocolates of Three Popular Brands of India: A Novel Look Through. **Proceedings Book of the International Conference on Emerging Trends in Bio-engineering and Food Technology (ETBFT-2025)**, Department of Food Technology, Guru Nanak Institute of Technology (Ed. Bandyopadhyay, K., Sikdar, D. and Bhattacharya, S.). Pp 68-79 [ISBN (Print): 978-93-341-6115-1]. **(AWARDED WITH 3rd BEST AWARD)**.
2. **Roy, S.,** Mundle, M.S., Biswas, R., Bhattacharya, T. and Das, K. (2025). Investigating the Physiological and Clinical potencies of few commercially - available, non-conventional Citrus Fruits: The First Reports. **Proceedings Book of the International Conference on Emerging Trends in Bio-engineering and Food Technology (ETBFT-2025)**, Department of Food Technology, Guru Nanak Institute of Technology (Ed. Bandyopadhyay, K., Sikdar, D. and Bhattacharya, S.). Pp 80-87 [ISBN (Print): 978-93-341-6115-1].
3. **Roy, S.** and Roy, L (2025). Promoting Healthy Ageing: An Emerging Issue of G20. **Proceedings Book of the ICSSR-ERC Sponsored International Seminar**, organized by the Post-Graduate Department of Education, St. Xavier's College (Autonomous), Kolkata.
4. **Roy, S.** and Roy, L (2024). The Role of Physical Activity, Nutrition, and Mental Well-Being Promoting Healthy Ageing. **Proceedings Book of the ICSSR-sponsored One Day National Seminar in Collaborative Research Project under Vision Vikshit Bharat @2047**, organized by St. Xavier's College (Autonomous), Kolkata.

c) Book Chapters:

1. **Roy, S.,** Chakraborty, B., and Choudhury, L. (2025) Gut Microbiota in Regulation of Neuromuscular Coordination. Advancing Science and Innovation in Healthcare Research. **Academic Press, Elsevier** (Eds. Bhattacharya Debasmita, Das Prabir Kumar & Das Biswas Samapika). pp. 363-404; Edn 1. [ISBN: 978-0-443-33351-4].
2. **Roy, S.,** Banerjee, D., Banerjee, A., and Choudhury, L. (2025) Genetics of bacterial biofilm-associated infections in livestock. Biofilm Associated Livestock Diseases and their Management. **Springer** (Eds. Lahiri Dibyajit, Nag Moupriya, Bhattacharya Debasmita & Ray Rina Rani). pp. 319-366; Edn 1. [ISSN (Online): 2662-4354; ISSN (Print): 2662-4346; ISBN (Online): 978-981-96-1885-9; ISBN (Print): 978-981-96-1884-2; DOI: <https://doi.org/10.1007/978-981-96-1885-9>].
3. **Roy, S.,** Sarkar, S., and Choudhury, L. (2024) "Bacteria & Cosmetics – the 'Industry' connect!" Current Advances in Microbiology. **Vijaygarh Jyotish Ray College** (in association with the Microbiologist's Society of India) (Ed. Saha Kesh Gargi). pp 136-149 [ISBN (Print): 978-81-969267-6-2].
4. **Roy, S.,** Manna, S., Chowdhury, S., and Choudhury, L. (2024) Ways of Improvement: A step ahead towards improved cellulosic ethanol production. Biofuels: Scientific Explorations and Technologies for a Sustainable Environment. **CRC Press, Taylor & Francis** (Eds. Banik Samudra Prosad & Bagchi Debasmita). pp 136-146; Edn 1. [ISBN 9781003350606; <https://doi.org/10.1201/9781003350606>].

5. **Roy, S., Bhowmick, P., Banerjee, S., Choudhury, L. and Mukherjee, A. (2024)** Neuropsychiatric applications of psychobiotics. *Developments in Applied Microbiology and Biotechnology, Microbial Essentialism. Academic Press, Elsevier* (Ed. Sarsan Sreedevi); pp. 301-315. [ISBN 9780443139321; <https://doi.org/10.1016/B978-0-443-13932-1.00002-7>].
6. **Roy, S. and Choudhury, L. (2022)** Human Gut Microbiota and Rare Diseases: A Knot Tied? Recent Trends in Microbiology. **Vijaygarh Jyotish Ray College and Scholar's BookHub, Kolkata** (in association with the Microbiologist's Society of India) (Ed. Debnath Sampa). Volume II. Pp. 246-275 [ISBN (Print): 978-81-956878-9-3].
7. **Roy, S. and Roy, L. (2022)** The symbiotic relationship between fungi and plants. Sustainable Utilization of Fungi in Agriculture and Industry (Series - Mycology: Current and Future Developments). **Bentham Science Publishers Pte. Ltd. Singapore** (Eds. Shanthipriya Ajmera, B. Bhima, Krishnappa M. and Ramchander Merugu). Volume 4. Pp. 52-74(23) [ISSN (Online): 2452-0780; ISSN (Print): 2452-0772; ISBN (Online): 978- 981-5040-34-0; ISBN (Print): 978-981-5040-35-7; ISBN (Paperback): 978-981-5040-36-4; DOI: 10.2174/9789815040340122020009].

d) Review Paper in Blog:

Roy, S. and Roy, L. (2018) Oh! The 'not-so-cool' cucumbers! *InquiScitive Journal: An e-magazine of recent scientific developments*. Vol I **[FEATURE ARTICLE]**.
<https://inquiscitive.files.wordpress.com/2018/07/inquiscitive-journal-an-e-magazine-of-recent-scientific-developments-vol-i-july-20181.pdf>

e) Conference Presentations:

- On "**Environmental Insights into Public Health and Sanitation Challenges in India**" at the **International Conference on "Environment and Ecology", 2025**, organized by Nozarax Audentias (OPC) Pvt. Ltd., an ISO 9001:2015 certified Academic Organization registered under **Ministry of Corporate Affairs and Ministry of Micro, Small and Medium Enterprises, Government of India**, in collaboration with Howrah Suparna, registered under West Bengal Societies Registration Act, 1961.
- On "Promoting Healthy Ageing: An Emerging Issue of G20" at the **ICSSR-ERC Sponsored International Seminar**, organized by the Post-Graduate Department of Education, St. Xavier's College (Autonomous), Kolkata.
- On "The Role of Physical Activity, Nutrition, and Mental Well-Being Promoting Healthy Ageing", at the ICSSR-sponsored One Day **National Seminar in Collaborative Research Project under Vision Vikshit Bharat @2047**, organized by St. Xavier's College (Autonomous), Kolkata.
- On Polio Myelitis – A dreaded disease! presented at the **World Polio Day International Webinar**, organized by Global Forum for Sustainable Rural Development, Global Centre for Youth Development, and Microbiologists Society, India (MSI; Reg. No. MAHA/4814/SAT).
- On "Bacteria & Cosmetics – the 'Industry' connect!" at the **International Conference on "Scope of Microbiology beyond Academia: Industry, Entrepreneurship and More", 2024**, organized by Department of Microbiology, Placement Cell & Microbiology Alumni Association, Vijaygarh Jyotish Ray College, in collaboration with Microbiologists Society of India (MBSI; Reg. No. MAHA/4814/SAT) & E-YUVA Centre, Adamas University (Supported by BIRAC).
- On "Garlic – A Novel Green Pharmacy for TB & MDR-TB" at the **International Seminar on "Microbes and Social Equity (ISMS)", 2023**, organized by the Department of Microbiology & IQAC, Bankura Sammilani College, Bankura, West Bengal, and sponsored by Microbiologists Society of India (MBSI; Reg. No. MAHA/4814/SAT).
- On "Assessing Public Health and Sanitation Status to promote Preventive Healthcare In India" **[BEST ORAL PRESENTATION AWARD (NATIONAL-LEVEL)]** at the **National Conference on "Current Industrial Trends in Life Science Research", 2023**, organized by ITLS Academy, Lucknow and Microbiologists Society, India (MBSI; Reg. No. MAHA/4814/SAT).
- On "Assessing Public Health and Sanitation Status To Promote Preventive Healthcare In India - How Far We Are?" at the **International Conference on Emerging Perspectives in Commerce, Economics, Environment and Management (ICCEEM), 2022-23**, titled "Building the SDG Economy: Emerging Challenges and Prospects", jointly organized by The Internal Quality Assurance Cell (IQAC) and Post Graduate and Research Department of Commerce, St. Xavier's College (Autonomous), Kolkata

- On “Exploring the Functional Evolution of Intrinsically Disordered Protein Regions in p53” at the **5th Regional Science and Technology Congress (RSTC), 2022-23** (Region-4: Kolkata, Howrah, South 24 Parganas) (Discipline: Medical Science), jointly organized by the Department of Science and Technology and Biotechnology, Government of West Bengal and Maulana Azad College, Kolkata.
- On “A Contaminated Cup of Tea” at the **International Virtual Seminar on “NUTRIGENOMICS” (IVSN-2021)**, sponsored by DBT Star College Scheme and organized by the PG & Research Department of Microbiology and B. Voc., (FSQM), V.H.N. Senthikumara Nadar College (Autonomous), Virudhunagar, Tamil Nadu, India.
- On "Pre-Treatment With Scopolamine Naturally Suppresses Japanese Encephalitis Viral Load In Embryonated Chick Through Modulation Of TLR & Type-I IFN Signaling Pathways" **[BEST ORAL PRESENTATION AWARD (INTERNATIONAL-LEVEL)]** at Biospectrum 2020, an **International Conference on Biotechnology and Biological Sciences**, organized by the Department of Biotechnology, University of Engineering & Management (UEM), Kolkata in collaboration with SMART Society, USA, Indian Ecological Society and Microbiologists' Society India.
- On ‘Garlic – The Future Green Pharmacy for TB’ at the **25th West Bengal State Science & Technology Congress (WBSSTC)**, Southern Region, organized by the Department of Higher Education, Science and Technology and Biotechnology, Government of West Bengal.
- On ‘Green Pharmacy: A possible alleviation of TB’ at the **National Symposium** on “Towards Climate Smart Agriculture - A Key to Livelihood Security”, organized by the Institute of Agricultural Science, University of Calcutta (in collaboration with Alumni Association, Institute of Agricultural Science, University of Calcutta).

f) Poster presentations:

- Presented a Poster **[3rd BEST POSTER AWARD (INTERNATIONAL-LEVEL)]** titled “Isolation and Characterization of Notorious Food-Borne Bacterial & Fungal Pathogens from Chocolates of Three Popular Brands of India: A Novel Look Through” at the **International Conference** on Emerging Trends in Bio-engineering and Food Technology (ETBFT-2025), organized by the Department of Food Technology, Guru Nanak Institute of Technology, Kolkata.
- Presented a Poster titled “Investigating the Physiological and Clinical potencies of few commercially - available, non-conventional Citrus Fruits: The First Reports” at the **International Conference** on Emerging Trends in Bio-engineering and Food Technology (ETBFT-2025), organized by the Department of Food Technology, Guru Nanak Institute of Technology, Kolkata.
- Presented a Poster titled “Microbial Organic Compounds in Cosmetics & Perfumes: A Comprehensive Peep-through!” at the **International Symposium** on ‘Modern Perspectives of Chemistry in Biology’, organized by the Department of Chemistry, St. Xavier’s College (Autonomous), Kolkata.
- Presented a Poster titled “Examining the Notion of ‘Injudicious’ Use of Azithral 250 / 500 and Clavam 625 in Post-COVID-19 Era: A Comprehensive Survey-Based Research” at the **International Symposium** on Biotechnology (ISBT)-2023, organized by the Post-Graduate & Research Department of Biotechnology, St. Xavier’s College (Autonomous), Kolkata.
- Presented a Poster titled “Climate Change and Epigenetic Modifications” at the National Higher Education Mission sponsored **International Conference** on ‘Climate Change: Global Cooperation’, organized by St. Xavier’s College (Autonomous), Kolkata.
- Presented a Poster titled “Microbes in my ‘Cup of Tea’” at the University of Calcutta sponsored **National Seminar** on ‘Advancement in Plant Sciences: An Insight’ organized by Botanical Society of Bengal, in Collaboration with CAS, Department of Botany, University of Calcutta.
- Presented a Poster titled ‘Probiotics and Folate Bio-fortification: A Novel Approach in ‘Bio-yoghurt’ Production’ at the **National Seminar** on ‘Modern Trends in Microbiology – Chapter XVI’ organized by the Department of Microbiology, St. Xavier’s College (Autonomous), Kolkata.
- Presented a Poster titled ‘Pathogens in the Tea-pot!’ at the **National Seminar** on ‘Recent Advances in Chemical & Biological Sciences (RACB 2019)’ organized by the Department of Chemistry, St. Xavier’s College (Autonomous), Kolkata.
- Presented a Poster titled ‘Cut Cumbers and their Bacterial Contamination Profile’ at the **National Seminar** on ‘Frontiers in Biological Science (FIBS): Chapter III’ organized by the Department of Microbiology, St. Xavier’s College (Autonomous), Kolkata, in association with Presidency University, Kolkata & IICB, Kolkata.

- Presented a Poster titled ‘Garlic - A Novel Home-Cure for TB & MDR-TB’ at the **National Seminar** on ‘Sustainable Utilization of Plants and Microbes’ (under UGC- SAP-DRS Programme) organized by the Department of Botany, Visva-Bharati, Santiniketan.
- Presented a Poster titled ‘Allicin - A natural anti-TB Nutraceutical?’ at the **National Seminar** on ‘Modern Research Trends in Chemistry (MRTC-2019)’ organized by The Department of Chemistry, St. Xavier’s College (Autonomous), Kolkata and The Royal Society of Chemistry (Eastern India Section).
- Presented a Poster titled “Garlic – a Potential ‘Green Pharmacy’ for MDR-TB” at the **3rd Regional Science & Technology Congress (Southern Region)**, organized by Bidhannagar College, Govt. of West Bengal, & Department of Science and Technology and Biotechnology, Govt. of West Bengal.
- Presented a Poster titled ‘Do Not Cross-Talk: Use of Quorum Quenchers as Novel Antibacterials’ at the **National Seminar** on ‘Modern Trends in Microbiology – Chapter XV’ sponsored by The Telegraph and co-sponsored by Mercy Hospitals, and organized by the Department of Microbiology, St. Xavier’s College (Autonomous), Kolkata.
- Presented a Poster titled ‘Microbes – the future weapon of sleuths’ at the **National Seminar** on ‘Modern Trends in Microbiology – Chapter XV’ sponsored by The Telegraph and co-sponsored by Mercy Hospitals, and organized by the Department of Microbiology, St. Xavier’s College (Autonomous), Kolkata.
- Presented a Poster titled ‘Mushrooms: A Potential Respite for Alcoholics’ at the **National Seminar** on ‘Modern Trends in Microbiology – Chapter XV’ sponsored by The Telegraph and co-sponsored by Mercy Hospitals, and organized by the Department of Microbiology, St. Xavier’s College (Autonomous), Kolkata.
- Presented a Poster titled “Garlic – A ‘Green’ Medicine for MDR-TB” at the **National Seminar** on ‘Pharmacy & Healthcare: Traditional Knowledge to Modern Techniques’, sponsored by Science and Engineering Research Board (SERB), Department of Science & Technology, Govt. of India, New Delhi, and organized by Advanced Pharmacognosy Research Laboratory, Department of Pharmaceutical Technology, Jadavpur University, Kolkata.
- Presented a Poster **BEST POSTER AWARD (NATIONAL-LEVEL)** titled “Green Pharmacy & Garlic – A Potential Cure for MDR-TB” at the **National Symposium** on ‘Interface Areas between Chemical and Biological Sciences’, organized by Advanced Research Centre, Department of Microbiology, Lady Brabourne College, Kolkata, in prestigious collaboration with Royal Society of Chemistry, Eastern India Section.
- Presented a Poster **BEST POSTER AWARD (INTERNATIONAL-LEVEL)** titled ‘Packaged Drinking Water and Soft Drinks – A Second Thought!!’ at the **International Seminar** on ‘Frontiers in Biological Science (FIBS)’, sponsored by the Department of Science & Technology, Govt. of West Bengal, and organized by the Department of Microbiology, St. Xavier’s College (Autonomous), Kolkata.
- Presented a Poster titled ‘ALLICIN – The Wondrous Anti-TB Chemical of Garlic’ at the **International Symposium** on ‘Facets of Chemistry in Biology (FOCB-II)’, organized by the Department of Chemistry, St. Xavier’s College (Autonomous), Kolkata.
- Presented a Poster titled ‘Garlic – An Effective Home Remedy for TB’ at the **23rd West Bengal State Science & Technology Congress (WBSSTC)**, organized by Presidency University, Kolkata, Department of Science and Technology, Govt. of West Bengal and West Bengal Council of Science & Technology, Kolkata, Govt. of West Bengal.
- Presented a Poster titled ‘Garlic: A Potential Green Pharmacy for TB’ at the **CSIR- sponsored One-day International Seminar** on ‘Frontiers in Translational & Regenerative Biology’, organized by the Immunology & Regenerative Medicine Research Unit, Department of Zoology, University of Calcutta.
- Presented a Poster titled ‘Mycobactericidal potency of Garlic Extract: with special references to differential expression profiles of NF- κ B by SDS-PAGE-Western Blot analysis and corresponding changes in NOS-SOD activities’ at the **UGC-sponsored National Seminar** on ‘Recent Advances in Biotechnology’, organized by CSIR-IICB, Kolkata, in collaboration with The Biotech Research Society, India.
- Presented a Poster titled ‘Characteristic changes in macrophage infection with special references to permeability to fluorescent dyes in nucleus and Micro RNA synthesis’ at **UGC-sponsored National Level Seminar** on ‘Frontiers of Microbiology: Prospects and Challenges’, organized by the Department of Microbiology, Ramakrishna Mission Vidyamandira, Belur Math, Howrah, in collaboration with CSIR-IICB, Kolkata.

- Presented a Poster titled ‘Inhibition of Mycolic acid and Trehalose biosyntheses in *Corynebacterium* spp. by Garlic Extract’ (under the section ‘Medical Sciences, including Physiology’) at the **100th Indian Science Congress**, Kolkata, organized by The Indian Science Congress Association.
- Presented a Poster titled ‘Use of Waste Fruit Skin as Antioxidant’ at the **International Symposium** at University of Calcutta on ‘Teaching, Research and Exploration in Biochemistry: 50 years of Journey’, organized by the Golden Jubilee Celebration Committee, Department of Biochemistry, University of Calcutta.

g) Campus Publications:

(1) Chiasma - the Annual Journal of the Post-Graduate & Research Department of Biotechnology:

- Published a Scientific Review Article “Neuropsychiatry and Psychobiotics: a link lesser known” in ‘Chiasma’, Volume 13, 2023.
- Published a Poem “*Mon kharap-er mon*” in ‘Chiasma’, Volume 12, 2022.
- Published a Poem “*Britterbaire - Robikironey*” in ‘Chiasma’, Volume 11, 2021.
- Published a Scientific Review Article “No Quorum – Infection Adjourned!” and a Poem “*Raja-Saja*” in ‘Chiasma’, Volume 10, 2019.
- Published a Poem “*Shakkhat*” in ‘Chiasma’, Volume 9, 2018.
- Published a Poem “*Rang o gandho*” in ‘Chiasma’, Volume 8, 2017.
- Published a Poem “*Jeebon ek utsab*” in ‘Chiasma’, Volume 7, 2016.
- Co-authored a review article titled ‘Green Pharmacy: the future treatment of TB’ published in ‘Chiasma’, Volume 6, 2015.
- Co-authored a review article titled ‘Consumption of packaged non-carbonated potable water and water-based carbonated soft-drinks and its associated risks’ published in ‘Chiasma’, Volume 5, 2014.
- Published a Poem “*Dehochhut mon aamar*” in ‘Chiasma’, Volume 4, 2013.

(2) Xaverian - the Magazine of St. Xavier’s College (Autonomous), Kolkata: Published a Poem “Live the death...” in ‘Xaverian 2021’, the Magazine of St. Xavier’s College (Autonomous), Kolkata.

(3) InquiScitive - an E-Magazine of recent scientific developments - a Blog initiative of the students of St. Xavier’s College (Autonomous), Kolkata, and of various pioneering institutes all over India: Contributor of Foreword – Volume 1 (2018), Volume 2 (2019), Volume 4 (2021).

REVIEWER

- **Reviewer** of The Nucleus, an International Journal of Cytogenetics and Molecular Biology, from Springer [ISSN (Print): 0029-568X; ISSN (Online): 0976-7975].
- **Reviewer** of the Proceedings of the Indian National Science Academy (PINSAs), a peer reviewed Journal from Springer [ISSN: 3700046; Impact Factor = 0.62].

RESOURCE PERSON

- **JUDGE** of the ‘Future Science Reporter’ competition on ‘Breakthrough news on sickle cell disease and other genetic diseases’ for the Special Issue of Biochem News released at the Microbiologists Society, India (MBSI) State Annual Meet & Conference 2026, West Bengal in 2026, jointly organized by MBSI and Techno India University, West Bengal.
- **INVITED LECTURE** on the Topic “Polio Myelitis – A dreaded disease!” at the World Polio Day Webinar, organized by the Global Forum for Sustainable Rural Development, Global Centre for Youth Development, and Microbiologists Society, India (MBSI; Reg. No. MAHA/4814/SAT), in 2024.
- **INVITED LECTURE** on the Topic “Assessment of the Potency of Garlic as a Natural, anti-TB Phytomedicine” at the Department of Microbiology, West Bengal State University, Barasat, West Bengal, India, in 2022.
- **INVITED LECTURE** on the Topic “Microbiologically-fermented Food” at the Science Club Program of Rotary Club of Calcutta, Jadavpur, India [Rotary International District (RID) 3291], in

2022.

- **JUDGE** of the Online Debate Competition titled “The Stage is Yours”, organized by the InquiScitive Blog in 2021.
- **CO-GUIDE** of Summer Research Project of two Post-graduate students of the Department of Microbiology, Lady Brabourne College, Kolkata, on “Effect of aqueous extract of garlic on multi drug resistant (MDR) *Mycobacterium smegmatis*” with Prof. (Dr.) Aditi Nag Chaudhuri, Head, Department of Microbiology, Lady Brabourne College, Kolkata, in 2015.
- **CO-GUIDE** of Summer Research Project of one Post-graduate student of the Department of Microbiology, Lady Brabourne College, Kolkata, on “Effect of Garlic Extract on NOS expression in *Mycobacterium smegmatis* by using Western Blotting” with Prof. (Dr.) Aditi Nag Chaudhuri, Head, Department of Microbiology, Lady Brabourne College, Kolkata, in 2014.
- **INVITED LECTURE** on ‘Water Conservation’ and evaluated the ‘Drawing Competition’ held at HSBC Bank, Dalhousie Branch, Kolkata as the Ennovate Expert in the HSBC Monsoon Splash Fortnight, in 2014.
- **CO-GUIDE** of Summer Research Project of one Post-graduate student of the Department of Microbiology, Lady Brabourne College, Kolkata, on “Effect of Garlic Extract on Micro-RNA synthesis by *Mycobacterium smegmatis*” with Prof. (Dr.) Aditi Nag Chaudhuri, Head, Department of Microbiology, Lady Brabourne College, Kolkata, in 2013.
- **INVITED LECTURE** at ‘UGC-sponsored 2-day Workshop on the Syllabus of B.Sc. (Microbiology) Course of University of Calcutta (with special emphasis on Practical Syllabus)’ organized by the Department of Microbiology, Scottish Church College, Kolkata, as a Subject Expert in 2007.
- **INVITED LECTURE** at the ‘Jagadish Bose National Science Talent Search (JBNSTS) Workshop’ at Sarsuna Girls’ High School (H.S.), as a Resource Person of Biological Sciences in 2006.
- **PAPER SETTER** of different theoretical and practical examinations of Microbiology (Honours and General) under University of Calcutta; **PAPER SETTER** of a theoretical examination of Microbiology (M.Sc.) of Vijaygarh Jyotish Ray College (under University of Calcutta); **PAPER SETTER** of a theoretical examination of Microbiology (Honours) under Kazi Nazrul University, **FORMER HEAD EXAMINER** of a theoretical paper of Microbiology (General) under University of Calcutta; **FORMER HEAD EXAMINER** of a theoretical paper of Microbiology (General) under West Bengal State University; **EXAMINER** of different theoretical examinations of Microbiology (Honours and General) and **EXTERNAL EXAMINER** of practical examinations of Microbiology (Honours and General) under University of Calcutta; **EXAMINER** of a theoretical examination of Microbiology (M.Sc.) of Vijaygarh Jyotish Ray College (under University of Calcutta).

NATIONAL MEDIA RESOURCE PERSON-----

- Participated in an **INVITED PANEL DISCUSSION** on ‘Liberalism in Tagore’s Work’, broadcasted on Akashvani Kolkata B and FM GOLD (Prasar Bharati) in 2022.
- Presented a **SCIENTIFIC TALK** on ‘Medicinal Food and National Nutrition Week’, broadcasted on Akashvani Kolkata B and FM GOLD (Prasar Bharati) in 2016.
- Delivered **LECTURES on different topics in Microbiology** (for the Undergraduate students of different Indian Universities) for the **Educational Multimedia Research Centre (EMMRC), St. Xavier’s College (Autonomous) Kolkata**, which were broadcasted on **National Television** in 2013 and 2014.

SESSION CHAIR-----

- Chaired a Scientific Session on the Plenary Lecture titled “PCR-independent Nucleic Acid Sensing using Smart XNAs”, delivered by Dr. Rupa Mukhopadhyay, Scientist and Senior Professor, School of Biological Sciences, Indian Association for the Cultivation of Science (IACS), Kolkata, at the **International Symposium on Biotechnology (ISBT)-2024**, organized by the Post-Graduate & Research Department of Biotechnology, St. Xavier’s College (Autonomous), Kolkata.
- Chaired a Scientific Session on the Plenary Lecture titled “Importance of Human Microbiome in the Development of Biotherapeutics for Management and Treatment of Chronic Inflammatory Diseases in Indian Population”, delivered by Dr. Souvik Mukherjee, Assistant Professor, NIBMG, Kalyani, at

the **International Symposium on Biotechnology (ISBT)-2023**, organized by the Post-Graduate & Research Department of Biotechnology, St. Xavier's College (Autonomous), Kolkata.

- Chaired a Scientific Session on the Oral Presentations delivered by University Faculties at the **International Symposium on Biotechnology (ISBT)-2023**, organized by the Post-Graduate & Research Department of Biotechnology, St. Xavier's College (Autonomous), Kolkata.

MEMBERSHIPS

- **Life Member (Life Membership No. MS/LM/663) of Microbiologist Society, India (MBSI;** Reg. No. MAHA/4814/SAT)
- **Member of The Indian Science Congress Association (ISCA)**

MAJOR CONFERENCES, SYMPOSIA, WORKSHOPS, SEMINARS, ETC. ATTENDED

<u>NAME</u>	<u>SPONSORING AGENCY</u>	<u>PLACE AND DATE</u>
New Horizons in Life Sciences (National Seminar)	Swami Vivekananda Research Centre	Ramakrishna Mission Vidyamandira, Belur Math, Howrah; 12.02.2020.
Two-Day Faculty Development Programme on Experimental Physics at Graduate Level: Scope and Challenges (Regional Seminar)	DBT Star College Grant	St. Xavier's College (Autonomous), Kolkata; 10.01.2020-11.01.2020.
Recent Advances in Chemical & Biological Sciences (International Seminar)	-	St. Xavier's College (Autonomous), Kolkata; 08.01.2020.
International Seminar on 'Women in Science' (International Seminar)	-	Lady Brabourne College, Kolkata; 07.01.2020
International Symposium on	-	St. Xavier's College (Autonomous), Kolkata; 20.12.2019.

Environment and Climate Crises (International Symposium) • Applications of Statistics in Natural Sciences (National Seminar) • Advancement in Plant Sciences: An Insight (National Seminar) • Modern Trends in Microbiology – Chapter XVI (National Seminar) • Recent Advances in Chemical & Biological Sciences (RACB 2019) (National Seminar) • Frontiers in Biological Science (FIBS): Chapter III (National Seminar) • Plagiarism and Academic Integrity (National Workshop) • Data Science – TheKey To The Future (National Seminar) • Sustainable Utilization of Plants and Microbes (National Seminar)	- University of Calcutta - - - - - UGC (under UGC-SAP-DRS Programme)	St. Xavier's College (Autonomous), Kolkata; 16.12.2019-17.12.2019. Department of Botany, University of Calcutta; 30.09.2019. St. Xavier's College (Autonomous), Kolkata; 26.09.2019-27.09.2019. St. Xavier's College (Autonomous), Kolkata; 23.09.2019. St. Xavier's College (Autonomous), Kolkata; 21.09.2019-22.09.2019. St. Xavier's College (Autonomous), Kolkata; 31.08.2019 St. Xavier's College (Autonomous), Kolkata; 22.07.2019 Department of Botany, Visva-Bharati, Santiniketan; 28.03.2019
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• Modern Research Trends In Chemistry (MRTC-2019) (National Seminar)	-	St. Xavier's College (Autonomous), Kolkata; 22.02.2019-23.02.2019
• Crafting and Conducting Research and How to Publish (State-level Workshop)	-	St. Xavier's College (Autonomous), Kolkata; 09.02.2019
• 3rd Regional Science & Technology Congress (Southern Region)	Bidhannagar College, Govt. of West Bengal, & Department of Science and Technology and Biotechnology, Govt. of West Bengal	Bidhannagar College, Govt. of West Bengal; 18.12.2018-19.12.2018
• 9th India Probiotic Symposium - "Probiotics through the lifespan" (National Symposium)	Gut Microbiota and Probiotic Science Foundation (India), in collaboration with Indian Council of Medical Research (ICMR), New Delhi, Indian Institute of Liver and Digestive Sciences (IILDS), & Amity University, Kolkata	Amity University, Kolkata; 24.11.2018-25.11.2018
• Frontiers in Biotechnology, 2018 (National Seminar)	-	St. Xavier's College (Autonomous), Kolkata; 12.10.2018
• Modern Trends In Microbiology-Chapter XV (National Seminar)	The Telegraph; Co-sponsored by Mercy Hospitals	St. Xavier's College (Autonomous), Kolkata; 10.10.2018-11.10.2018

Pharmacy & Healthcare: Traditional Knowledge to Modern Techniques (National Seminar)	Science and Engineering Research Board (SERB), Department of Science and Technology, Govt. of India, New Delhi	Jadavpur University, Kolkata; 14.09.2018
Frontiers in Biological Science (FIBS)-Chapter II (International Seminar)	-	St. Xavier's College (Autonomous), Kolkata; 21.08.2018
Interface Areas between Chemical and Biological Sciences (National Symposium)	-	Lady Brabourne College, Kolkata; 31.07.2018
Frontiers in Biological Science (FIBS) (International Seminar)	Department of Science & Technology, Govt. of West Bengal	St. Xavier's College (Autonomous), Kolkata; 30.01.2018
Towards Climate Smart Agriculture – A Key to Livelihood Security (National Symposium)	-	Institute of Agricultural Science, University of Calcutta; 09.12.2017-11.12.2017
Frontiers in Biotechnology, 2017 (National Seminar)	-	St. Xavier's College (Autonomous), Kolkata; 27.10.2017
Modern Trends in Environmental Microbiology (National Level)	UGC	Department of Microbiology, Scottish Church College Kolkata (in collaboration with Bose Institute,

Seminar)		Kolkata); 30.01.2017 – 31.01.2017
Recent Trends in Microbiology (International Level Seminar)	RUSA	Department of Microbiology, Ramakrishna Mission Vidyamandira, Belur Math, Howrah; 14.01.2017
Facets of Chemistry in Biology (FOCB-II) (International Symposium)	-	St. Xavier's College (Autonomous), Kolkata; 12.01.2017
Chemistry in Human Life – Current Aspects (National Seminar)	UGC	Gurudas College, Kolkata (in collaboration with IISER, Kolkata); 09.12.2016 - 10.12.2016
Frontiers in Biotechnology, 2016 (National Seminar)	-	St. Xavier's College (Autonomous), Kolkata; 04.10.2016
Introduction to Complex System (National Workshop)	DBT, Govt. of India (under STAR College Scheme)	St. Xavier's College (Autonomous), Kolkata; 19.09.2016
23rd West Bengal State Science & Technology Congress (WBSSTC) (State Level Seminar)	Presidency University, Kolkata, Department of Science and Technology, Govt. of West Bengal and West Bengal Council of Science & Technology, Kolkata, Govt. of West Bengal	Presidency University, Kolkata; 28.02.2016-29.02.2016
Frontiers in Translational & Regenerative Biology (International Seminar)	CSIR	University of Calcutta, Kolkata; 31.01.2016
Workshop on Biophysics	DBT, Govt. of India (under STAR College	St. Xavier's College (Autonomous), Kolkata; 19.01.2016

(National Workshop)	Scheme)	
Recent Advances in Biotechnology (National Seminar)	UGC	CSIR-IICB, Kolkata; 17.04.2015
Frontiers of Microbiology: Prospects and Challenges (National Seminar)	UGC	Department of Microbiology, Ramakrishna Mission Vidyamandira, Belur Math, Howrah; 20.11.2014- 21.11.2014
100th Indian Science Congress (National Conference)	The Indian Science Congress Association	University of Calcutta, Kolkata; 03.01.2013-07.01.2013
Modern Biology and its Impact on Public Health (National Seminar)	UGC	Dinabandhu Andrews College, Kolkata; 18.01.2012
Geographical Appraisal of the City of Joy's Environmental Wellbeing (State Level Seminar)	UGC	Town Hall, Kolkata; 17.01.2012
Sustainable Development: An Interdisciplinary Approach (National Seminar)	UGC	Sarsuna College, Kolkata; 23.09.2011-24.09.2011
Challenges of Teaching Microbiology in Undergraduate Colleges (Symposium)	Centre for Modern Biology, University of Calcutta	Department of Biochemistry, University of Calcutta, Kolkata; 25.09.2010
Niche Skill Creation and the Responsibilities of	Sarsuna College	Sarsuna College, Kolkata; 14.04.2010

Higher Education (State Level Seminar)		
Syllabus of B.Sc. (Microbiology) Course of University of Calcutta (With Special Emphasis on Practical Syllabus) (Workshop)	UGC	Scottish Church College, Kolkata; 04.04.2007 – 05.04.2007
Environmental and Industrial Aspects of Microbes in the New Millennium (EIAMNM-2006) (State Level Symposium)	UGC	Department of Microbiology, Barrackpore Rastraguru Surendranath College, Kolkata; 24.02.2006-25.02.2006
Jagadish Bose National Science Talent Search (JBNSTS) (Workshop)	Jagadish Bose National Science Talent Search (JBNSTS)	Sarsuna Girls' High School (H.S.), Kolkata; 30.01.2006
International Conference on 'Free Radicals and Antioxidants in Health, Disease and Radiation', & V Annual Conference of 'Society for Free Radical Research- India (SFRR-India)'	Biochemistry Research Wing, Institute of Post Graduate Medical Education & Research, Kolkata	Science City, Kolkata; 16.01.2006-18.01.2006
International Symposium on 'Teaching, Research & Exploration in Biochemistry: 50 years of Journey'	Golden Jubilee Celebration Committee, Department of Biochemistry, University of Calcutta	Ballygunge Science College Campus, University of Calcutta, Kolkata; 06.01.2006-07.01.2006

CO- AND EXTRA-CURRICULAR PROFILE-----

- ☐ Participated as an **Organizing Committee Member**, in “Convocation 2026”, held on 16th January, 2026 at St. Xavier’s College (Autonomous), Kolkata.
- ☐ Participated as an **Organizing Committee Member**, in “The Inter College State Sports Meet”, organized by the Govt. of West Bengal, and hosted by St. Xavier’s College (Autonomous), Kolkata, held in March 2025 at the Sports Authority of India (SAI) Complex, Netaji Subhash Eastern Center, Salt Lake City, Sector III, Kolkata.
- ☐ Participated as an **Organizing Committee Member**, in “Convocation 2025”, held on 16th January, 2025 at St. Xavier’s College (Autonomous), Kolkata.
- ☐ Participated as an **Organizing Committee Member**, during “NAAC Peer Team Visit”, 2024, at St. Xavier’s College (Autonomous), Kolkata.

- ❑ Participated as an **Organizing Committee Member**, in “Xavotsav 2024”, the Annual Fest of St. Xavier’s College (Autonomous), Kolkata, held on 2nd February, 2024 at St. Xavier’s College (Autonomous), Kolkata.
- ❑ Participated as an **Organizing Committee Member**, in “Convocation 2024”, held on 16th January, 2024 at St. Xavier’s College (Autonomous), Kolkata.
- ❑ Participated as an **Organizing Committee Member** for “Ronaldinho Visit”, at St. Xavier’s College (Autonomous), Kolkata, held on 17th October, 2023 at St. Xavier’s College (Autonomous), Kolkata.
- ❑ Participated as an **Organizing Committee Member**, in “Xavotsav 2023”, the Annual Fest of St. Xavier’s College (Autonomous), Kolkata, held on 10th & 11th February, 2023 at St. Xavier’s College (Autonomous), Kolkata.
- ❑ Participated as an **Organizing Committee Member**, and **Departmental Professor-In- Charge** of the “Annual Sports 2023”, held on 4th February, 2023 at St. Xavier’s College (Autonomous), Kolkata.
- ❑ Participated as an **Organizing Committee Member**, in “Convocation 2023”, held on 14th January, 2023 at St. Xavier’s College (Autonomous), Kolkata.
- ❑ Participated as an **Organizing Committee Member**, in “Convocation 2022”, held on 19th February, 2022 at St. Xavier’s College (Autonomous), Kolkata.
- ❑ Participated as an **Organizing Committee Member**, in “Convocation 2021”, held on 13th March, 2021 at St. Xavier’s College (Autonomous), Kolkata.
- ❑ **Panelist** in the promotion of a Bengali Film by Windows Production House (by Shiboprosad Mukhopadhyay and Nandita Roy), Kolkata, arranged by Bengali Literary Society (BLS), St. Xavier’s College (Autonomous), Kolkata on 21st February, 2020 (The International Mother Language Day).
- ❑ Participated as an **Organizing Committee Member**, in “The Inter College State Sports Meet”, organized by the Govt. of West Bengal, and hosted by St. Xavier’s College (Autonomous), Kolkata, held in February 2020 at the Sports Authority of India (SAI) Complex, Netaji Subhash Eastern Center, Salt Lake City, Sector III, Kolkata.
- ❑ Participated as an **Organizing Committee Member**, in “Convocation 2020”, held on 16th January, 2020 at St. Xavier’s College (Autonomous), Kolkata.
- ❑ Participated as an **Organizing Committee Member**, in “West Bengal Youth Parliament Competition 2019”, organized by the Department of Parliamentary Affairs, Govt. of WestBengal, and hosted by St. Xavier’s College (Autonomous), Kolkata, held on 17th September, 2019 at St. Xavier’s College (Autonomous), Kolkata.
- ❑ Participated as an **Organizing Committee Member** for Semester 1 (B.Sc. & Integrated M.Sc.) Inauguration of St. Xavier’s College (Autonomous), Kolkata, held in July, 2019 at St. Xavier’s College (Autonomous), Kolkata.
- ❑ Participated as a **Member**, in “Cinematheque 2019”, the Annual Fest of the Department of Mass Communication and Videography, St. Xavier’s College (Autonomous), Kolkata, held on 28th February, 2019 at St. Xavier’s College (Autonomous), Kolkata.
- ❑ Participated as a **Judge** of JAM event of “Xavullash 2019”, organized by the Bengali Literary Society, St. Xavier’s College (Autonomous), Kolkata, held on 22nd February, 2019 at St. Xavier’s College (Autonomous), Kolkata.
- ❑ Participated as an **Organizing Committee Member**, in “Xavotsav 2019”, the Annual Fest of St. Xavier’s College (Autonomous), Kolkata, held on 22nd January, 2019 at St. Xavier’s College (Autonomous), Kolkata.
- ❑ Participated as an **Organizing Committee Member**, in “Convocation 2019”, held on 16th January, 2019 at St. Xavier’s College (Autonomous), Kolkata.
- ❑ Participated as a **Member**, in “Cinematheque 2018”, the Annual Fest of the Department of Mass Communication and Videography, St. Xavier’s College (Autonomous), Kolkata, held on 27th February, 2018 at St. Xavier’s College (Autonomous), Kolkata.
- ❑ Participated as an **Organizing Committee Member**, in “Xavotsav 2018”, the Annual Fest of St. Xavier’s College (Autonomous), Kolkata, held on 24th January, 2018 at St. Xavier’s College (Autonomous), Kolkata.
- ❑ Participated as a **Member**, in “Cinematheque 2017”, the Annual Fest of the Department of Mass Communication and Videography, St. Xavier’s College (Autonomous), Kolkata, held on 24th March, 2017 at St. Xavier’s College (Autonomous), Kolkata.
