Dr. Pooja Gulati
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Date of Joining MDU: 24th Sept., 2010

Research Specialization:
- **Anticancer enzymes as biopharamaceuticals**
- **Antimicrobial resistance (AMR) and molecular epidemiology of water- and food-borne pathogens**

Qualifications
- Ph.D. (Microbiology), University of Delhi South Campus, New Delhi, INDIA, 2002-2007. Thesis entitled "**Molecular characterization of strains of *Y. enterocolitica* isolated from India**"
- M.Sc. (Microbiology), University of Delhi South Campus, New Delhi, INDIA, 1999-2001, **First in Delhi University (Gold Medalist)**
- B.Sc. (Microbiology), University of Delhi South Campus, New Delhi, INDIA, 1996-1999, **Second in Delhi University**

Projects Undertaken
- **DST Project** titled "Bacterial arginine deiminase: characterization, cloning and evaluating their efficacy as anti-cancerous agent" submitted under Start Up Research Grant (Young Scientists). (Tenure-3 years: 2015-2018), **Completed.**
- **UGC-Major Research project** entitled 'Identification and characterization of Integron-mediated antibiotic resistance in *Escherichia coli* isolated from Yamuna River water' (Tenure-3years: 2012-2015), **Completed.**
- Dr. Radha Krishnan Foundation Funds project entitled 'Antibiotic susceptibility and ESBL detection in *Pseudomonas aeruginosa* isolated from Haryana'. **Completed.**

PatentApplied
"**Cross-linked arginine deiminase, preparation method, and application, thereof"**

Research Supervision
- **Ph.D Guidance**- 8 students, 5 completed, 3 ongoing
- **MSc. Dissertations** supervised - 40

Research Interests:
- Epidemiological investigations on multi-drug resistance *Enterobacteriaceae* and developing microbial source tracking systems for indigenous water bodies
- Development of molecular detection systems for the identification of MDR organisms
- Analysing the potential role of microbial enzymes in therapeutics, particularly in the treatment of cancers
- Developing bioformulations of microbial enzymes for the treatment of cancer

Awards / Scholarships / Fellowships
- **INSA visiting fellow Award 2022** for research and learning Bioinformatics under guidance of Prof. Debasisa Mohanty in National Institute of Immunology, New Delhi
- **DM memorial award for the best poster in** Association of Microbiologists of India AMI 2021 held in New Delhi held on 3-5 Feb 2021
- **Best Oral presentation award** at UGC sponsored National seminar on "Biodiversity: status and significance on March 21st, 2017

- **Best Oral presentation award** at NSFGG2016 organized by Centre for Medical Biotechnology, MDU, Rohtak held in Nov., 2016
- **Best Poster presentation Award** at International Science Festival (IISF) – Young Scientists' Conclave (YSC), National Physical Laboratory, New Delhi, Dec 8th-11th, 2016.
- **DST-FAST track Young Scientist Award 2015**
- **Platinum Jubilee Best Poster Award (AMI-2013)** at 54th annual conference of Association of Microbiologists of India at MDU Rohtak, between 17-20 November 2013.
- Qualified **Senior Research fellowship test** held by Council of Scientific and Industrial Research in Dec 2005
- Qualified **National eligibility test (NET)** for Lectureship held by Council of Industrial Research in Dec 2000
- Recipient of University **Gold medal** for the best student in the M.Sc. Microbiology in the University of Delhi South campus, New Delhi
- Recipient of **All India Post Graduate Scholarship** for the year 1999-2000 and 2000-2001.

Teaching Experience

- **Teaching postgraduate** students of MSc Microbiology and MSc Microbial Biotechnology since Sept., 2010
- Taught **Graduate students at University of Delhi** as Adhoc lecturer(Aug 2007- sept., 2010 and Jul 2001-Mar 2002)
- Worked as Guest lecturer for the three months in Netaji Subhash Institute of Technology, Dwarka, New Delhi (Jan 2007- April 2007, Jan 2008- April 2008)
- Guiding PhD Scholars for research in field of **Medical microbiology and molecular epidemiology**
- **Writing modules for ePGpathshala in Medical Microbiology and Molecular Microbiology**

Self- Development

- **One week Faculty Development Program organized** on Development Programme on 'Computational Approach to Drug Discovery' organised by Deshbandhu College, University of Delhi & Center for Bioinformatics, Computational and Systems Biology in collaboration with Mahatma Hansraj Faculty Development Centre Hansraj College, University of Delhi from 02nd August – 07th August 2021
- **One week Faculty Development Program organized** on "OPEN SOURCE TOOLS FOR RESEARCH", under PMMMNMTT scheme organized by Teaching Learning Centre (TLC), Ramanujan College University of Delhi from 08th June 2020 to 14th June 2020.
- **Two week Faculty Development Program organized** on "Managing Online Classes and Co creating MOOC:2.0", under PMMMNMTT scheme, organized by Teaching Learning Centre (TLC), Ramanujan College, University of Delhi from 18th May 2020 to 3rd June 2020.
- **Orientation course** at UGC academic staff college, Jawaharlal Nehru University from October, 8th 2018 –Nov. 2nd 2018
- **Orientation course** at UGC academic staff college, CPDHE, University of Delhi from August, 6th 2012 – Sept 5th 2012
- **Refresher course** at UGC academic staff college, Jawaharlal Nehru University, from July, 28th 2014 – Aug 22nd 2014

Visits Abroad

- **University of Vienna, Austria** to represent Maharshi Dayanand University in the ENPRENDIA Project Training
- **Heidelberg, Germany**, April 22-26, 2004 for paper presentation at EMBO conference on molecular microbiology: Exploring prokaryotic diversity

Conferences organized

- Organizing secretary one day international conference 'Microbes for Biotechnological Innovations (MBI-2018)' organized by Department of Microbiology & AMI-Rohtak on 7thDec., 2018
- Organizing secretary one day national seminar on "Trends in Bioprocess Technology: Innovations and Implications in Microbiology " **o**rganized by Department of Microbiology & AMI-Rohtak on 10th March 2014

Research Publications

- In Refereed Journals :42
- In books :14
- Papers presented in national/international conferences : 40
- Others (Online publications) : 8

Publications in Refereed Journals:

1. Kawatra, A., Dhankhar, R., Datten, B., Dhankhar, S., Chhabra, D., & Gulati, P. (2024). Integrated neural network and PSO hybrid approach for production of citrulline using immobilized permeabilized *Pseudomonas furukawaii*. *Letters in Applied Microbiology*,77.**IF 2.0**

2. Kawatra, A., Datten, B., Hans, R., & Gulati, P. (2024). Hybrid magnetic nanocomposites of arginine deiminase with improved stability and recyclability for biomedical applications. *Preparative Biochemistry & Biotechnology*, 1-8.**IF 2.0**

3. Jangra, N., Kawatra, A., Datten, B., Gupta, S., & Gulati, P. (2024). Recent trends in targeted delivery of smart nanocarrier-based microbial enzymes for therapeutic applications. *Drug Discovery Today*, 103915.**IF 6.5**

4. Kawatra, A., Chhabra, D., & Gulati, P. (2024). Cross-linked arginine deiminase aggregates for enhanced production of nutraceutical citrulline. *Process Biochemistry*, *136*, 147-155.**IF 4.48**

5. Dhankhar, R., Kawatra, A., Gupta, V., Mohanty, A., and Gulati, P. (2022). In silico and in vitro analysis of arginine deiminase from Pseudomonas furukawaii as a potential anticancer enzyme. **3 Biotech**, 12(9), 1-13. https://doi.org/10.1007/s13205-022-03292-2. **IF 2.893**

6. Mor, P., Sheoran, A., Dahiya, B, Parshad, S, Nain, R, Khan, A, Malhotra, P, Gulati, P, Mehta, P. K. (2022) Diagnosis of abdominal tuberculosis by multi-targeted (mpt64 and IS6110) loop-mediated isothermal amplification assay. Journal of Gastroenterology and Hepatology https://doi.org/10.1111/jgh.16036 37 (12), 2264-2271. **IF: 4.369**

7. Dhankhar, R., Gupta, S., Gulati, P. (2022) Insights on plant–microbe interactions in soil in relation to iron dynamics. Vegetos. 2229-4473. IF 0.046

8. Mor, P., Dahiya, B., Sharma, S., Sheoran, A., Parshad, S., Malhotra, P., Gulati, P. and Mehta, P.K. (2022) Diagnosis of peritoneal tuberculosis by real-time immuno-PCR assay based on detection of a cocktail of Mycobacterium tuberculosis CFP-10 and HspX proteins. **Expert Review of Gastroenterology & Hepatology**. https://doi.org/10.1080/17474124.2022.2088509**IF 4.095**

9. Kawatra, A., Dhankhar, R., and Gulati, P. (2022) Microbial arginine deiminase: A multifaceted green catalyst in biomedical sciences. International Journal of Biological Macromolecules, Volume 196, 151-162, ISSN 0141-8130. https://doi.org/10.1016/j.ijbiomac.2021.12.015IF 8.025

10. Mor, P., Dahiya, B., Parshad S., Gulati P., and Mehta, P.K. (2022) Recent updates in diagnosis of abdominal tuberculosis with emphasis on nucleic acid amplification tests, Expert Review of Gastroenterology & Hepatology, 16:1, 33-49. https://doi.org/10.1080/17474124.2022.2021068IF 4.095

11. Dhankhar, R.,Kawatra, A., Mohanty, A., and Gulati, P. (2021) Microbial enzymes used in prodrug activation for cancer therapy: Insights and future perspectives. Current Protein & Peptide Science, 22:1.https://doi.org/10.2174/1389203721666201207231932IF 3.118

12. Singha, TK., Dagar, VK., Gulati, P., and Kumar S. (2021) Kinetic study and optimization of recombinant human tumor necrosis factor-alpha (rhTNF-α) production in Escherichia coli. Preparative Biochemistry & Biotechnology. 51(3):267-76. https://doi.org/10.1080/10826068.2020.1815056IF 3.141

13. Grover, T., Mishra, R., Gulati, P., Mohanty, A. (2021). An insight into biological activities of native cyclotides for potential applications in agriculture and pharmaceutics. Peptides. 135:170430. https://doi.org/10.1016/j.peptides.2020.170430IF 3.867

14. Kawatra, A., Dhankhar, R., Mohanty, A., and Gulati, P. (2020). Biomedical applications of microbial phenylalanine ammonia lyase: Current status and future prospects. Biochimie177:142-152. https://doi.org/10.1016/j.biochi.2020.08.009 IF 4.372

15. Khare, N., Kaushik, M., Martin, JP., Mohanty, A., and Gulati, P. (2020). Genotypic diversity in multi-drug-resistant E. coli isolated from animal feces and Yamuna River water, India, using rep-PCR fingerprinting.

Environmental Monitoring and Assessment, 192 (11):681. https://doi.org/10.1007/s10661-020-08635-1IF 3.307

16. Khare, N., Kaushik, M., Kumar, S., and Gulati, P. (2020) Evaluation of genetic diversity among aquatic and fecal isolates of *Escherichia coli* using multilocus variable number of tandem repeat analysis. 3 Biotech. 10(2):63 https://doi.org/10.1007/s13205-020-2066-0IF 2.893
17. Dhankhar, R., Gupta, V., Kumar, S., Kapoor, R.K., and Gulati, P. (2020) Microbial enzymes for deprivation of amino acid metabolism in malignant cells: biological strategy for cancer treatment. Applied Microbiology and Biotechnology 104:2857 – 2869. https://doi.org/10.1007/s00253-020-10432-2**IF 5.560**
18. Mehta, L., Dhankhar, R., Gulati, P., Kapoor, R. K., Mohanty, A., and Kumar, S. (2020). Natural and grafted cyclotides in cancer therapy: An insight. Journal of Peptide Science, e3246.https://doi.org/10.1002/psc.3246 **IF 2.408**
19. Tammineni, R., Gulati, P., Kumar, S., and Mohanty, A. (2020) An overview of acyclotides: Past, present and future. Phytochemistry. 170:112215. https://doi.org/10.1016/j.phytochem.2019.112215**IF 4.004**
20. Grover, T., Mishra, R., Gulati, P**.,** and Mohanty, A. (2020). An insight into biological activities of native cyclotides for potential applications in agriculture and pharmaceutics. **Peptides.** https://doi.org/10.1016/j.peptides.2020.170430 **IF 3.867**
21. Dhankhar, R., Kumar, A., Kumar, S., Chhabra, D., Shukla, P., and Gulati, P. (2019) Multilevel algorithms and evolutionary hybrid tools for enhanced production of arginine deiminase from *Pseudomonas furukawaii* RS3. Bioresource Technology 290:121789. https://doi.org/10.1016/j.biortech.2019.121789**IF 11.889**
22. Kaushik M., Kumar S., Kapoor, R.K., and Gulati P. (2019) Integrons and antibiotic resistance genes in water-borne pathogens: Threat Detection and Risk Assessment. Journal of Medical Microbiology. 68(5):679-692. https://doi.org/10.1099/jmm.0.000972**IF 2.5**
23. Kaushik M., Khare N., Kumar S., and Gulati P. (2019) High Prevalence of Antibiotic Resistance and Integrons in *Escherichia coli* Isolated from Urban River Water, India. Microbial Drug Resistance. 25 :359-370. https://doi.org/10.1089/mdr.2018.0194**IF 2.706**
24. Kaushik M., Kumar S., Kapoor R.K., Virdi J.S., and Gulati P. (2018) Integrons in *Enterobacteriaceae*: diversity, distribution and epidemiology. International Journal of Antimicrobial Agents. 51:167-176. https://doi.org/10.1016/j.ijantimicag.2017.10.004**IF 15.441**
25. Dhankhar R., Gulati P., Kumar S., and Kapoor R.K. (2018) Arginine-lowering enzymes against cancer: a technocommercial analysis through patent landscape. Expert Opinion on Therapeutic Patents. 28:603-614. https://doi.org/10.1080/13543776.2018.1508452 **IF 6.714**
26. Gupta V., Jain K., Garg R., Malik A., Gulati P., and Bhatnagar R. (2018) Characterization of a two component system, Bas1213-1214, important for oxidative stress in *Bacillus anthracis*. Journal of Cellular Biochemistry. 119:5761-5774. https://doi.org/10.1002/jcb.26751 **IF 4.480**
27. Singha T., Gulati P., and Kumar S. (2018) Nonconventional induction strategies for production of recombinant human tumor necrosis factor-alpha in *Escherichia coli*. Journal of Applied Biology & Biotechnology. 6:23-27. https://doi.org/10.7324/JABB.2018.60105
28. Singh J., Saharan V., Kumar S., Gulati P., and Kapoor R.K. (2017) Laccase grafted membranes for advanced water filtration systems: a green approach to water purification technology. Critical Reviews in Biotechnology. 38:883-901. https://doi.org/10.1080/07388551.2017.1417234**IF 9.062**
29. Gupta V.,Chaudhary N., Aggarwal S., Gulati P., and Bhatnagar R. (2017) Functional analysis of BAS 2108-2109 two component system: evidence for protease regulation in Bacillus anthracis (2017). TheInternational Journal of Biochemistry & Cell Biology, 89: 71-84. https://doi.org/10.1016/j.biocel.2017.06.004**IF 5.652**
30. Singha T., Gulati P., Mohanty A., Khasa Y.P., Kapoor R.K., and Kumar S. (2017) Efficient genetic approaches for improvement of plasmid based expression of recombinant protein in Escherichia coli: A review. Process Biochemistry. 55:17-31. https://doi.org/10.1016/j.procbio.2017.01.026**IF 4.885**
31. Gupta V., Gulati P., Bhagat N., Dhar M., and Virdi, J.S. (2015) Detection of *Yersinia enterocolitica* in food:an overview. European Journal of Clinical Microbiology & Infectious diseases. 34:641-650. https://doi.org/10.1007/s10096-014-2276-7**IF 5.103**

32. Kumar S., GulatiP., and Kapoor R.K. (2012) In Vitro Studies in Solanum *xanthocarpum* to compare the potential of different explants towards callus induction and shoot formation. International Journal of Current Research 5:1360-1362.
33. Kapoor R.K., Kumar S., Gulati P., and Malik U. (2011) Top 10 Innovative Technologies for Yogurt Making Shortlisted Through Patent Research The Indian Buffalo Journal. 1: 38-42.
34. Gulati P, Varshney R.K., and Virdi J.S. (2009)Development of multilocus variable number tandem repeat analysis (MLVA) as a tool to discern genetic relationships amongst strains of Yersinia enterocolitica. Journal of AppliedMicrobiology107: 875-84. https://doi.org/10.1111/j.1365-2672.2009.04267.x **IF 4.059**
35. Gulati P., and Virdi J.S. (2007)rrnlociandgyrB based genotyping confirms the existence of two clonal groups in strains of Yersinia enterocolitica subspecies palearcticabiovar 1A. Research in Microbiology 153: 236-243. https://doi.org/10.1016/j.resmic.2006.11.011**IF 3.946**
36. Virdi J.S., Gulati P., and Pai M. (2007) Genetic diversity of pathogenic microbes and its medical and public health significance. Indian Journal of Medical Microbiology. 25: 2-3. https://doi.org/10.4103/0255-0857.31052
37. Sachdeva P., and Virdi J.S. (2005) Molecular heterogeneity in Yersinia enterocolitica and Y. enterocolitica-like species ,àí Implications for epidemiology, typing and taxonomy. FEMS Immunology and Medical Microbiology 45: 1-10 https://doi.org/10.1016/j.femsim.2005.03.006
38. Virdi J.S., and Sachdeva P. (2005) Genetic diversity of pathogenic microorganisms – Basic insights, public health implications and the Indian initiatives. Current Science 89: 113-123. http://www.jstor.org/stable/24110437**IF 1.169**
39. Sachdeva P., and Virdi J.S. (2004) Repetitive elements sequence (REP/ERIC) - PCR based genotyping of clinical and environmental strains of Yersinia enterocolitica biotype 1A reveal existence of limited number of clonal groups. FEMS Microbiology Letters 240:193-201. https://doi.org/10.1016/j.femsle.2004.09.029**IF 2.820**
40. Sharma S., Sachdeva P., and Virdi J.S. (2003) Emerging water-borne pathogens. Applied Microbiology and Biotechnology 61: 424 - 428. https://doi.org/10.1007/s00253-003-1302-y**IF 5.560**
41. Sachdeva P., and Virdi J.S. (2003) Extinction of microbes. Current Science 85: 839-840.
42. Sharma S., Sachdeva P., and Virdi J.S. (2001) Emergence and spread of infectious diseases: Role of changing environment The Botanica 51: 52-57.

Book Chapters

1. Jangra, N., Kawatra, A., Dhankhar, R., & Gulati, P. (2023). Bacteria and Bacteria-Based Products in Cancer Therapy: Current Status and Future Advances. In *Role of Microbes in Sustainable Development: Human Health and Diseases* (pp. 441-470). Singapore: Springer Nature Singapore.
2. Kaushik, M., Sharma, A., Gupta, S., & Gulati, P. (2023). Current Antifungal Drugs. In *Current Trends in the Identification and Development of Antimicrobial Agents* (pp. 125-166). Bentham Science Publishers.
3. AnubhutiKawatra, Sonika Dhillon, Rakhi Dhankhar, Pooja Gulati. (2023) Bacterial Drug Delivery Vehicles for targeted therapy of tumours In Microbial Products: Applications and Translational trends (Ed. Mamtesh Singh, Gajendra Pratap Singh, Shivani Tyagi). Published by CRC Press, Taylor & Francis group pp. 373-385. ISBN: 978-100-3306-93-1
4. AnubhutiKawatra, Shefali Gupta, Rakhi Dhankhar, Pratibha Singh, Pooja Gulati. (2023) Application of Phytochemicals in Therapeutic, Food, Flavor, and Cosmetic Industries In Phytochemical Genomics:Plant Metabolomics and Medicinal Plant Genomics (Ed. Mallappa Kumara Swamy and Ajay Kumar), Published by Springer Nature, Singapore. ISBN: 978-981-19-5778-9
5. Rakhi Dhankhar, Karuna Regmi, AnubhutiKawatra, Pooja Gulati. (2023) Trichomics: Trichomes as Natural Chemical FactoriesIn Phytochemical Genomics:Plant Metabolomics and Medicinal Plant Genomics (Ed. Mallappa Kumara Swamy and Ajay Kumar), Published by Springer Nature, Singapore. ISBN: 978-981-19-5778-9

6. AnubhutiKawatra, Reema Mishra, Aparajita Mohanty, Pooja Gulati. Plants As Antiviral Agents In handbook of agriculture and plant science (Ed. Dwaipayan Sinha), Published by ABS Books, New Delhi, pp. 171-186, ISBN: 978-93-9100-25-1
7. Dhankhar, Rakhi; Mohanty, Aparajita; Gulati, Pooja (2021) Microbial Diversity of Phyllosphere: Exploring the Unexplored. In Phytomicrobiome Interactions and Sustainable Agriculture (Ed. Dr. Jitender Kumar & Dr. Amit Verma). Published by John Wiley & Sons, Ltd Chichester, UK. pp 66-90. ISBN: 978-1-119-64462-0
8. Mishra, Reema; Grover, Tripti; Gulati, Pooja; Mohanty, Aparajita. (2021) Rhizosphere Engineering: An Effective Approach for Sustainable Modern Agriculture. In Phytomicrobiome Interactions and Sustainable Agriculture (Ed. Dr. Jitender Kumar & Dr. Amit Verma). Published by John Wiley & Sons, Ltd Chichester, UK. pp. 91-117 ISBN: 978-1-119-64462-0
9. J. S. Virdi , Pradeep Kumar , Sarita Mallik , Neeru Bhagat , and Pooja Gulati. (2012) Insights into the Genetic Relationships Between Environmental and Clinical Strains of Yersinia enterocolitica Biovar 1A. In Microorganisms in Environmental Management: Microbes and Environment (Ed. T. Satyanarayana). Published by Springer. pp 61-80 ISBN: 978-94-007-2229-3
10. Dr. Rajeev Kumar Kapoor, Dr. Pooja Gulati, Dr. Sanjay Kumar (2012). Patenting of Genes and Their Subsequences- A Case Study of *Clostridium difficile* Toxin Genes. Proceedings of the National Seminar on Internet Applications in Research March 23, 2012 Department of Zoology, MD University, Rohtak
11. Virdi, J.S., Sachdeva, P., Bhagat, N., Mallik, S., Sharma, S., and Mittal, S. (2008) *Yersinia enterocolitica* and Yersiniosis (Eds. C. Vaishnavi). Paragon International publishers
12. Sachdeva P, Virdi JS (2006). DNA fingerprinting techniques for identification and characterization of bacteria. In: Applied Microbiology (Eds. P. C. Trivedi), agribios India, Jodhpur, pp. 199-210 ISBN 13: 9788177542844
13. Virdi JS, Sachdeva P, Sharma S, Bhagat N (2006). Serological, molecular and pathogenicity-related characteristics of *Yersinia enterocolitica* isolated from India. Proceedings of 47th Annual Conference of Microbiologist of India. Narosa Publishing House (In Press)
14. Virdi, J.S., Sachdeva, P., Bhagat, N., Singh, I., Sinha, I., Sharma, S., Mallik, S. and Mittal, S. (2005) Serological and molecular diversity of *Yersinia enterocolitica* isolated from India. Microbial Diversity: Current perspectives and potential applications, IK International Pvt. Ltd. (Ed. T. Satyanarayana and B. N. Johri) pp.1037-1052 IISBN: 9789390455591

E content created:

- Gulati P. (2018) e PG pathshala module on **Immunological methods for diagnosis** in subject : Biotechnology, Paper: Animal cell biotechnology Module no. 22 e-PGPathshala (inflibnet.ac.in)
- Gulati P. (2018) e PG pathshala module on **Nucleic acid based assays** in Subject : Biotechnology, Paper: Animal cell biotechnology Module no. 23 e-PGPathshala (inflibnet.ac.in)
- **Gulati P**, Bhagat N and Virdi JS (2005). *Yersinia enterocolitica*: Virulence and epidemiological attributes. http://www.aclisassari.com/acli-openlearning/ lectures.php
- **Gulati P.** (2016) e PG pathshala module on **Molecular microbial epidemiology:** Protein profiling ,multilocus enzyme electrophoresis (MLEE).
- **Gulati P.** (2016) e PG pathshala module on **Molecular microbial epidemiology:** Molecular typing; RFLP (ribotyping IS based),RAPD, 16S, 23S IGS, ARDA, rep (RFP,ERIC,BOX)-PCR
- **Gulati P and Gupta V.** (2016) e PG pathshala module on **Industrial Microbiology**: production of citric acid
- **Gulati P and Gupta V.** (2016) e PG pathshala module on **Industrial Microbiology**: production ofProduction of Antibiotics- penicillin, cephalosporin, streptomycin, rifamycin and their modification, pigments, enzyme inhibitor
- **Gulati P and Kaushik M.** (2015)e PG pathshala module on **Industrial Microbiology**: Production of Amino acids- Glutamic acid by microorganisms.
- **Gulati P and Kaushik M.** (2015)e PG pathshala module on **Industrial Microbiology**: Production of Amino acids- Lysine by microorganisms.

Lectures Delivered

- Expert Lecture entitled “"Antibiotic resistance in natural water bodies: A major threat to public health".”on International Microorganisms Day being organised by Microcosm Association, Faculty of Allied Health Sciences, SGT University, Gurugram on 17th September 2024.
- “Research methodology course for undergraduate studies" as a ressouce person in “Inter-College-Skill enrichment Course on: on April 13, 2024 organized by the Department of Botany, Gargi College, University of Delhi.
- “Antibiotics-Resistance, challenges and threat management” in the workshop cum training organized under UGC-Stride organized by Department of Microbiology MDU on 15th Feb 2022
- “Women in Medical Microbiology” in A one day National Webinar titled: Awakening the Entrepreneur Within” organized by Department of Microbiology MDU on 26th Feb 2021
- Antibiotic Resistance in Natural Water-bodies - Threat, Detection and Risk”. Institute of Home Economics, University of Delhi, on 15th Feb 2021
- Antibiotic resistance genes their determinants in natural water-bodies. Department of Microbiology at Gargi College, University of Delhi on 15th of October 2019

Signature