




Faculty Details: Prof. Poonam Sharma

TITLE	DR.	FIRST NAME	POONAM	LAST NAME	SHARMA	
DESIGNATION		Professor				
ADDRESS		Department of Zoology Gargi College Sirifort Road, Delhi- 110049				
PHONE NO. OFFICE		011-26494544				
EMAIL		poonam.sharma@gargi.du.ac.in				
EDUCATIONAL QUALIFICATIONS						
Degree		Institution			Year	
B.Sc. Zoology (Hons)		University of Delhi, Delhi, India			1999	
M.Sc. Zoology		University of Delhi, Delhi, India (Specialization: Cell & Molecular Biology)			2001	
Ph.D.		University of Delhi, Delhi, India			2007	
BOYSCAST Fellow Ecological Engineering		LIEBE-CNRS, Université Paul Verlaine, Metz, France			2010	
Others		CSIR-UGC JRF NET ICMAR JRF NET National Award for Advance Studies (Masters)			2001 2001 2000	
CAREER PROFILE						
<ol style="list-style-type: none"> 1. Professor: July, 2022-continuing at Department of Zoology, Gargi College, University of Delhi, India. 2. Associate Professor: July, 2019- July, 2022 at Department of Zoology, Gargi College, University of Delhi, India. 3. Assistant Professor: July, 2007-July, 2019 at Department of Zoology, Gargi College, University of Delhi, India 4. BOYSCAST FELLOW: July, 2010-July, 2011 at Laboratoire des Interactions Ecotoxicologie, Biodiversite, Ecosystemes (LIEBE), Universite Paul Verlaine, CNRS UMR 7146, Metz, France. 5. Visiting fellow: March, 2006 - August, 2006 at Swiss Federal Institute for Environmental Science and Technology (EAWAG), Dubendorf, Switzerland. 6. Senior Research Fellow: May, 2004-March, 2007 at Molecular Biology Laboratory, Department of Zoology, University of Delhi, Delhi, India. 7. Junior Research Fellow: January 2002-May, 2004 at Molecular Biology Laboratory, Department of Zoology, University of Delhi, Delhi, India. 						
ASSOCIATION WITH PROFESSIONAL BODIES						
<ol style="list-style-type: none"> 1. Indira Gandhi National Open University (IGNOU): Editor and Subject Expert for Life Science/ Biochemistry Under-graduate and Post-graduate courses. 2. National Council of Educational Research and Training (NCERT): Textbooks and Laboratory Manuals Development Committee Member in Biotechnology for Higher Secondary Stage. 3. National Council of Educational Research and Training (NCERT): Editor and Subject expert for Textbook and Laboratory Manuals of Biotechnology for Higher Secondary Stage, NCERT. 4. BOSSE (Board of Open Schooling and Skill Education), Sikkim Subject Expert for Biology for Senior Secondary Biotechnology 						



Faculty Details: Prof. Poonam Sharma

5. **E-content Writer** for post graduate and under-graduate student under **e-pathshala** Sponsored by **UGC, Government of India** for Zoology.
6. **E-content Writer and Language Editor** for under-graduate student under NME-ICT (Project Sponsored by **MHRD Government of India** for Zoology.
7. **Subject Expert** for developing Online Quizzes in Life Science” at Institute of Life Long Learning (ILLL), University of Delhi.
8. **Reviewer**, School Science Journal, a quarterly journal published by NCERT.
9. **Editorial Board** member of *Journal of Advanced Research in Biology*.
10. **Editorial board**: Assistant Editor of *BioJournal*.
11. **Reviewer** for *Journal of Entomology and Nematology*.
12. **Reviewer** for Pearson Education Books.
13. **American Society for Microbiology (AMI)** Member of: ID 57104945.
14. **INSCR**: Life Membership 2021 (L-120).
15. **Delhi State Science Teachers Forum**: Life Membership 5995

ADMINISTRATIVE ASSIGNMENTS

1. **Deputy Superintendent** Semester Examination (May-June and July-August 2023).
2. **External examiner by Examination Department AUUP** Noida to evaluate the Major project work of B.Sc. (H) Microbiology program (7th June 2023).
3. **External Expert, Screening Committee, NCERT** for academic vacant posts i.e., Professor, Associate professor, Assistant Professor.
4. **Subject Expert** for **Plan meeting** on “**Orientation of teachers** on the newly developed **NCERT** Textbook for Biotechnology for Higher Secondary Stage.
5. **Invited Expert** for **NCERT Programme Advisory Committee (PAC)** “**Development of Learning Outcomes** at Higher Secondary Stage (Class XI and XII) for subject: **Biology**.”
6. **Member**, Syllabus Committee for UGCF syllabus (NEP) 2022: B.Sc. Zoology (Hons) Animal Cell Biotechnology.
7. **Teacher In charge** (September 2018) Department of Zoology, Gargi College.
8. **Coordinator** Add-on course “**Biotechcellence: Insights and Innovations**” (2017- 2022).
9. **Departmental Coordinator: Star College Scheme**, Department of Biotechnology.
10. **Coordinator and Member**, Syllabus Committee for LOCF Papers: B.Sc. Zoology (Hons) GE Paper: Animal Cell Biotechnology, Molecular Biology and Immunology.
11. **Departmental Convenor** for Time Table and Workload (2018, 2017).
12. **Pathfinder Committee** Member: Science, Gargi College (2023, 2022, 2021, 2020, 2019, 2018, 2017, 2016).
13. **Convenor and Member** of Syllabus Committee for B.Sc. Zoology (Hons), B.Sc. Life Science Semester System Papers: Applied Biology and Biotechnology, Developmental biology, Genetics and Genomics and Bioinformatics.
14. **Teacher In charge** (2014) Department of Zoology, Gargi College.
15. **Coordinator** of Add-on course “*Molecular and Computation Biology: A Practical Approach*”.
16. **Coordinator** for departmental admissions 2008, 2009, 2012, 2013, 2014.
17. **Committee member, Foreign Students Committee**, Gargi College (2023).
18. **Committee member**, College Computer Lab, Gargi College (2008-2014).
19. **Committee member**, College Prize, Gargi College 2009.
20. **Editor**, Departmental magazine ‘Flight’ 2009, 2008.

AREAS OF INTEREST / SPECIALIZATION

Biotechnology, Immunology, Molecular Biology, Computational Biology, Nanotoxicology.

SUBJECTS TAUGHT

Biotechnology, Immunology, Molecular Biology, Bioinformatics, Ecology, Physiology, and Evolution



Faculty Details: Prof. Poonam Sharma

WORKSHOP/CONFERENCES ORGANIZED

1. **Convenor** Webinar on “**Cancer: Risk Factors & Myths**, organized by Gargi College (University of Delhi), in collaboration with GAD-TLC and Indian Cancer Society (ICS), Delhi, held on 9th November, 2022.
2. **Executive Advisory Committee Member**, National Conference on Recent Trends & Experimental Approaches for Sustainable Development and Conservation of Biodiversity - 2023 jointly Organized by Department of Zoology & Botany D. B. S. College, Kanpur held on 25th - 27th March, 2023 at D. B. S. College, Kanpur, CSJM, University Kanpur.
3. **Chair** Keynote Session in the “2nd International conference on Natural Products and Human Health -2022” held on 4th-6th November 2022 funded by DBT, ICSSR, DST-SERB and PSB, Deshbandhu College, University of Delhi.
4. **Departmental Coordinator** “**Star College Scheme**: Participated in Mentorship Programme by Star Status College under Star College Scheme on 8th November 2021 organized by DBT.
5. **Faculty Coordinator** for the "MANAV Scientific Reading and Comprehension Self-Assessment Module (for students)", conducted by “**Project MANAV– The Human Atlas Initiative**” Department of Biotechnology (DBT) in September to October 2021.
6. **Chair** Keynote Session in the HEALTH 2021 Virtual International Conference on “**CANCER BIOLOGY: Advances & Challenges**” held on 11th-13th November 2021 under the aegis of DBT Star College Scheme & IQAC Deshbandhu College, University of Delhi.
7. **Invited judge** for Online Inter-College Infographic Poster making competition organized by Gargi College Botanical Society “**TARU**” held on the 4th of October, 2021.
8. **Invited Judge** for **International Symposium** on “*Breast Cancer Awareness -2020*” organized by_NSS, Miranda House Unit in collaboration with Department of Zoology, Unnat Bhart Abhiyan, Miranda House; ACBR, University of Delhi.
9. **Invited Judge** for “**Mission Shakti - Government of Uttar Pradesh**” organized by Internal Complaint Committee (ICC), **University of Lucknow-2020**.
10. **Co-convenor** International e-conference “**NeuroEunoia 2020**” on 16th-17th October, 2020 organized by Gargi College.
11. **Advisory Committee Member** of one-week Online Faculty Training Program on “**Pedagogical training for effective online teaching learning**” from 3rd to 10th August, 2020 **organized** by Deen Dayal Upadhyaya College (University of Delhi) and K.T.H.M. College, Nashik.
12. **Co-convenor** National Webinar series on “**Current global pandemic of COVID-19**” held on 1st -3rd May, 2020 organized by Gargi College, University of Delhi.
13. **Convenor** intercollege workshop “**Biotechnique**” under DBT Star College Scheme in association of IQAC conducted from 23rd-24th December 2019.
14. **Convenor** “**Summer Immersion Program**” under Star College scheme funded by DBT held on 11th -18th July 2018 at Gargi College.
15. Organized a symposium on “**Wanderers of Nature: Exploring Wildlife**” held on 12th March, 2018 at Gargi College.
16. **Convenor** a workshop on “**It’s in My Genes: A Molecular Biology Approach**” on March 14- 15, 2017 held at Department of Zoology, Gargi College.
17. Organized Workshop on “**Molecular Biology Equipment**”, Department of Zoology, Gargi College on 9th October 2014.
18. **Convenor** Interdisciplinary “**Summer School**” as Deputy Coordinator held at Gargi College on 26th- 31st May 2014.
19. Organized Workshop on “**Laboratory Training for Technical Staff**” of science departments of Gargi College on September 2013.
20. **Deputy Coordinator** Interdisciplinary Science Seminar as on “**New Frontiers in Biotechnology**” Under “**Star College Scheme**” Funded by DBT 2nd December 2009.
21. Organized Bioinformatics Workshop for Faculty Workshop on “**Introduction to Bioinformatics**” as BIF



Faculty Details: Prof. Poonam Sharma

committee member held at Gargi College on September 15-16, 2009.

22. **Deputy Coordinator** Interdisciplinary “**Summer School**” as held at Gargi College on 15th -30th June, 2009.

RESEARCH GUIDANCE

1. Mentor Internship program, supervised six interns under “**Cancer Awareness: A Community Outreach Program**” in association with GAD-TLC, SGTB Khalsa College, University of Delhi and Indian Cancer Society (ICS) for three months, October- December **2023**.
2. Supervised one student in project “**Effect of Tecovirimat drug on Monkeypox virus and targeting off-target protein**” for one-year **2023**.
3. Supervised one student in project “**In silico Analysis of Common Autism Spectrum Disease Genetic Risk Variations**” for one-year **2022**.
4. Supervised one student in the project “**In silico Analysis of Ivermectin Drug Off-Target Human Proteins**” for one-year **2021**.
5. Supervised one student in project “**Determining Early onset of Alzheimer's disease: Disease Causing and Risk Factors**” for one-year **2020**.
6. Supervised two students in project “**Comparative analysis of infectious organisms to comprehend the mechanism of infection and classify potential antimicrobial drug targets**” for **2018**.
7. Supervised two students in project “**Analysis of Reprogramming Factors in Cell Transformation**” for one-year **2016**.
8. Supervised two students in project “**Ebola Virus: To Ascertain Drug's Aim and Hitting the Target**” for one-year **2015**.
9. Supervised three students in project “**Determining Parkinson's genes: Disease causing and risk factors**” for one-year **2014**.
10. Supervised four students in project “**Drugs & Genetics: Aspirin resistance: An emerging clinical predicament is associated with single nucleotide polymorphisms**” for one-year 2014.
11. Supervised three students in project “**BLAST into the Past to Identify T. Rex's Closest Living Relative**” for two months **2013**.
12. Supervised three students in project “**Computational Exploration of Protein Function**” for two months **2013**.
13. Supervised one student in project “**In silico analysis of gene expression profile in human breast cancer cells and study its applications**” for twelve months under Pathfinder Award **2009**.
14. Supervised two summer trainees in project “**Polyphasic Approach of Bacterial Classification**” funded by UGC under Centre for Potential and Excellence Scheme, April-June **2009**.

REFRESHER /ORIENTATION / FDP /ONLINE COURSES ATTENDED:

1. Participated and successfully completed **Infectious Disease Transmission Models for Decision Makers** Coursera One Week Online Course from 22nd June -2nd July, 2023.
2. Completed successfully One week (Online) **National Faculty Development Program** on “**Cancer Awareness**” during 05th-11th July, 2022 jointly organized by Guru Angad Dev Teaching Learning Centre, SGTB Khalsa College, University of Delhi under PMMMNMTT of the Ministry of Education and Indian Cancer Society, Delhi.
3. Completed successfully One week (Online) **Faculty Development Programme** on ‘**Computational Approach to Drug Discovery**’ during 02nd-07th August, 2021 organized 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.
4. Completed successfully One Week Online **Faculty Development Program** on **Advanced Research Methodology Applicable in New Education Policy** during 22nd-28th June, 2021 organized by Digvijay Nath Post Graduate College Gorakhpur & Science Tech Institute, Lucknow, Uttar Pradesh.
5. Participated and Successfully Completed one-week **Faculty Development Programme** on “**Open-Source Tools for Research**” from 8th-14th June, 2020 organized by Teaching Learning Centre, Ramanujan College, University of Delhi
6. Participated and successfully Completed Two-week **Faculty Development Programme** on “**Managing Online**”



Faculty Details: Prof. Poonam Sharma

Classes and Co-Creating MOOCs” from 18th May- 1st June 2020 organized by Teaching Learning Centre, Ramanujan College, University of Delhi.

7. Participated and successfully Completed **SWAYAM Annual Refresher Programme in teaching (ARPIT) Online Course** March 2019 for Career Advancement Scheme (CAS) promotion in **“Biotechnology”** offered by Mohanlal Sukhadia University, Udaipur, Rajasthan.
8. Participated in **Faculty Development Programme** on “Research Methodology” held on 16th-22th December, 2017 at Bhaskaracharya College of Applied Sciences, University of Delhi, Delhi, India.
9. Participated in the four-week **Refresher Course** in **“1st Interdisciplinary course in Contemporary Studies”** from 8th February-4th March, 2016 conducted at the Academic Staff College, Jawaharlal Nehru University, Delhi.
10. Participated 1st **Refresher Course in Life Sciences & Biotechnology** from 20th July 20- 14th August, 2015 conducted at the Academic Staff College, Jawaharlal Nehru University, Delhi.
11. Participated in **Orientation Programme (OR 62): CPDHE**, University of Delhi, Delhi 02nd-30th March, 30, 2010.

PUBLICATIONS

A. RESEARCH PUBLICATIONS (TOTAL IMPACT FACTOR: 64.93)

1. Yadav, M and **Sharma, P (2023)**. Current Eco-friendly and Sustainable Methods for Heavy Metals Remediation of Contaminated Soil and Water: Special Emphasis on Use of Genetic Engineering and Nanotechnology. *Pollution*. Published Online <https://doi.org/10.22059/poll.2023.345177.1522>
2. Kumari, R[#]., Singhvi, N[#]., **Sharma, P.**, Choudhury, C., Shakya, R (2023). “Virtual screening of gut microbiome bacteriocins as potential inhibitors of stearyl-CoA desaturase 1 to regulate adipocyte differentiation and thermogenesis to combat obesity”. *J. Biomol. Struct. Dyn.* <https://doi.org/10.1080/07391102.2023.2167121>.
3. **Sharma, P*** and Yadav, M (2023). Enhancing Antibacterial Properties of Bacteriocins Using Combination Therapy. *J. Appl. Biol. Biotechnol.* Vol. 11(01), pp. 232-243. <http://dx.doi.org/10.7324/JABB.2023.110206>
4. **Sharma, P***., Kumari, R[#]., Yadav, M. Lal, R (2022). Evaluation of TiO₂ Nanoparticles Physicochemical Parameters Associated with their Antimicrobial Applications. *Indian J Microbiol.* **62**, 338–350. <https://doi.org/10.1007/s12088-022-01018-9>.
5. Patel, S, and **Sharma P*** (2022). In silico Analysis of Common Autism Spectrum Disorder Genetic Risk Variations. *Biomed Pharmacol. J*, Vol. 15 (4). <https://dx.doi.org/10.13005/bpj/2530>
6. Walia S, **Sharma P*** (2022). In silico Analysis of Off-Target Effects of Ivermectin Drug. *Biosci Biotech Res Asia* ;19(1). <http://dx.doi.org/10.13005/bbra/2970>.
7. Yadav, M. Pandey, P and **Sharma, P*(2022)**. Understanding the genetic, molecular, and cellular basis of ageing as the biggest risk factor of Alzheimer’s disease. *European Journal of Biological Research*, 12(1), 62–76. DOI: <http://dx.doi.org/10.5281/zenodo.6323799>
8. **Sharma, P.** (2022). Toxicity Assessment of Titanium Dioxide Nanoparticles in E. coli Mutant with Truncated Lipopolysaccharide (LPS). *Trends in Sciences*, 19(16), 5696. <https://doi.org/10.48048/tis.2022.5696>
9. Yadav, M and **Sharma, P (2022)**. “Plant-derived Molecules for the Treatment of Tuberculosis: A Review” (2021). *Iraqi J Pharm Sci*, Vol.31(2). <https://doi.org/10.31351/vol31iss2pp1-13>
10. **Sharma, P (2021)**. Characterization and bacterial toxicity of Titanium dioxide NPs. *International Journal of Scientific Research*. Volume 10, 09-11. Issue 6. DOI: [10.36106/ijsr](https://doi.org/10.36106/ijsr)
11. Pandey, P., **Sharma, P*** (2021). Analysis of Early Onset of Alzheimer’s Disease Genes: Disease Causing and Risk Factors. *European Journal of Biological Research*, 11, 251-259. DOI: <http://dx.doi.org/10.5281/zenodo.4641962>
12. Pandey, N., Sharma, P., Rashmi, Navodita, **Sharma, P.**, Kaur, J (2017). Characterization of a Novel Human Protein Expected to be Involved in Signal Transduction. 2017. *International Journal of Biotechnology and Biomedical Sciences* Volume 2, pp. 211-251.
13. S. Bhati, B. Chauhan, J. Kaur, and **Sharma. P*** (2017). Genetics of Lung Cancer- Disease Causing and Risk



Faculty Details: Prof. Poonam Sharma

- Factors. *International Journal of Biotechnology and Biomedical Sciences* Volume 2, pp. 190-196 (ISSN 2454-4582).
14. A. Nagar, Dimple, A. Arya, J. Kaur, and **Sharma*. P (2017)**. Celecoxib: A Promising Clinical dilemma is Associated with Single Nucleotide Polymorphisms. *International Journal of Biotechnology and Biomedical Sciences*, Volume 2, Issue 3, pp. 202-206 (ISSN 2454-4582).
 15. N. Bisht, N. Chakraborty, I. Prasad and **Sharma. P (2016)**. Analysis of Reprogramming Factors in Cell Transformation. *International Journal of Biotechnology and Biomedical Sciences*. Volume 2, Issue 2, pp. 156-159. (ISSN: 2454 -4582).
 16. S. Majumdar, S. Rustagi and **Sharma. P (2016)**. *In Silico* Analysis of Gene Expression Profile in Human Breast Cancer Cells. *International Journal of Biotechnology and Biomedical Sciences*. Volume 2, Issue 1, pp. 9-13. (ISSN 2454-4582)
 17. S. Majumdar, S. Rustagi and **Sharma. P (2015)**. Ebola Virus: To Ascertain Drug's Aim and Hitting the Target. *International Journal of Basic and Applied Biology*. Volume 4, pp. 274-278. (ISSN: 2349 -5820).
 18. S. Majumdar, S. Rustagi, S. Mondal, V. Rijhwani, J. Kaur, **Sharma. P (2014)**. Aspirin resistance: An emerging clinical predicament is associated with single nucleotide polymorphisms. *International Journal of Basic and Applied Biology*. Volume 2, pp.63-68. (ISSN: 2349 -5820).
 19. P. Sharma, P. S. Shyamli, R. Singh, J. Kaur, **Sharma. P (2014)**. Determining Parkinson's genes Disease causing and risk factors. *International Journal of Basic and Applied Biology*. Volume 2, pp.91- (ISSN: 2349 -5820).
 20. Raina V., Rentsch D, Geiger T., **Sharma, P.**, Buser HR., Holliger C, Lal R, Kohler HP (2008). Metabolites in the Degradation of alpha- and gamma-Hexachlorocyclohexane (HCH): Pentachlorocyclohexenes Are Hydroxylated to Cyclohexenols and Cyclohexenediols by the Haloalkane Dehalogenase LinB from *Sphingobium indicum* B90A. *Journal of Agricultural Food Chemistry* Aug 13; 56(15):6594-603. DOI: <https://doi.org/10.1021/jf800465q>
 21. Raina V., Hauser A, Buser HR, Rentsch D, **Sharma, P**, Lal R, Holliger C, Poiger JT, Müller MD, Kohler H.P (2007). Hydroxylated metabolites of beta- and delta-hexachlorocyclohexane: bacterial formation, stereochemical configuration, and occurrence in groundwater at a former production site. *Environmental Science Technology* 2007 Jun 15; 41(12):4292-8. DOI: <https://doi.org/10.1021/es062908g>
 22. Lal, R., Jit, S., Verma, M., Dadhwal., M., Singh, A., Prakash, O., **Sharma, P** and Khanna, M. (2006). Nanoorganisms: Smallest form of Life got smaller! (Research News). *Indian Journal of Microbiol.* 46: 413.
 23. **Sharma, P.**, Raina, V., Kumari, R., Malhotra, S., Dogra, C., Kumari, H., Kohler, H.P E., Buser, H.R., Holliger, C and Lal, R. (2006). Haloalkane Dehalogenase (LinB) is responsible for β - and δ - HCH (Hexachlorocyclohexane) transformation in *Sphingobium indicum* B90A. *Applied Environmental Microbiology* 2006 Sep; 72(9):5720-7. DOI: [10.1128/AEM.00192-06](https://doi.org/10.1128/AEM.00192-06)
 24. Lal, R., Dogra, C., Malhotra, S., **Sharma, P.** and Pal, R. (2006). Diversity, distribution and divergence of lin genes in hexachlorocyclohexane-degrading sphingomonads. *Trends in Biotechnology*. Mar; 24(3):121-30. DOI: [10.1016/j.tibtech.2006.01.005](https://doi.org/10.1016/j.tibtech.2006.01.005)
 25. Dhingra, G., Kumari, RM., Bala, S., **Sharma, P.**, Lal, S., Cullum, J. and Lal, R. (2003). Development of cloning vectors and transformation system for *Amycolatopsis*. *Journal of Industrial Microbiology and Biotechnology*. 30:195-204, Springer Verlag Heidelberg, Germany. DOI: [10.1007/s10295-003-0040-6](https://doi.org/10.1007/s10295-003-0040-6)

B. CONFERENCE PROCEEDINGS:

26. Shreya Majumdar, Sonakshi Rustagi, Sreshtha Mondal, Vani Rijhwani, Jasvinder Kaur, **Poonam Sharma**. Genetic polymorphism of platelet aggregation pathway genes is related to aspirin resistance. 2014. pp. 156-162 in Proceedings of national conference on Striving & Thriving towards Diffusion of Student-driven Research in Science and Technology for Inspired Learning ISBN 978-81- 7273-958-4.
27. Perna Sharma, P. Sushree Shyamli, Richa Singh, **Poonam Sharma**, Jasvinder Kaur. Determining why some gene mutations cause Parkinson's disease and others do not. 2014. pp. 273-279 in in Proceedings of national conference on Striving & Thriving towards Diffusion of Student-driven Research in Science and Technology



Faculty Details: Prof. Poonam Sharma

for Inspired Learning ISBN 978-81-7273-958-4.

28. Rup Lal, Mandeep Dadhwal, Ajaib Singh, Om Prakash, Shweta Malhotra, and **Poonam Sharma. (2005).** Hexachlorocyclohexane (HCH) residues in Indian environment: Problems and solution. *Proceedings of 8th International HCH and pesticide forum*, 26-28 May 2005, Sofia, Bulgaria.

C. CHAPTERS:

Chapters/e-Chapters/e-content (UGC e-PG pathashala, IGNOU, BOSSE and ILL)

1. Genome Technology & Applications (2023)
2. Antigens (2022)
3. Animal Cell Culture (2022)
4. Intracellular Protein Turnover (2022)
5. Blood Fluke Parasite- *Schistosoma* (2022)
6. Parasites of Subcutaneous Tissue (2022)
7. Cells of Immune System (2020)
8. Histology of immune organs thymus, spleen and lymph node (2020)
9. Receptor-mediated endocytosis (2017)
10. Promoter analysis, DNA foot printing (2016)
11. Polymerase Chain Reaction (2016)
12. Southern Blot Hybridization (2016)
13. Cloning (2016)
14. In-situ hybridization (2016)
15. Gene Therapy. (2015)
16. Gene Therapy of Cystic Fibrosis and SCID. 2015
17. Recombinant DNA in health: Recombinant insulin and human growth hormone (2014)
18. Polymerase Chain Reaction (2014)

Chapters Contributed for NCERT Textbooks of Biotechnology for Higher Secondary Stage

19. Recombinant Vaccines
20. Therapeutic Drugs: Monoclonal Antibodies, Growth Hormone and Insulin
21. DNA Fingerprinting
22. Regenerative Medicines
23. Transgenic Organisms
24. Gene Therapy
25. Enzyme-Linked Immunosorbent Assay
26. Cellular Differentiation

Exercises for NCERT Laboratory Manuals in Biotechnology for Higher Secondary Stage

27. Estimation of Salivary Amylase Activity
28. Estimation of Urease Activity
29. To verify Beer-Lambert Law using Colorimeter
30. To separate DNA fragments by Agarose Gel Electrophoresis
31. Isolation of bacterial plasmid DNA
32. Isolation of genomic DNA (Cheek cell)
33. Restriction digestion of Lambda DNA and its analysis by gel electrophoresis
34. To study the human karyotype
35. To estimate gram percentage of hemoglobin in human blood using Sahli's haemoglobinometer.

Book Chapters in Research

36. Tripathi, C., Sharma, P., Singh, I. K., & Singh, A. (2022). Chapter 14- Integrative behavioral and



Faculty Details: Prof. Poonam Sharma

- ecotoxicological effects of nanoparticles in *Emerging Contaminants in the Environment* (pp. 311-333). Elsevier. <https://doi.org/10.1016/B978-0-323-85160-2.00007-X>
37. Dioxin: Environmental Fate and Health/Ecological Consequences” (2019) CRC Press, Florida, USA, DOI: ISBN 9781138047242.
 38. Diversity of *lin* genes in HCH degrading *Sphingobium* species 2005. Microbial Diversity Current Perspectives and Potential Applications. I.K International Publishing House, New Delhi. ISBN 81-88237.
 39. Diversity and Evolution of *lin* genes in Hexachlorocyclohexane degrading *Sphingobium paucimobilis* strains and their use in bioremediation 2003. Biotechnological Approaches for Sustainable Development. Allied Publisher Private Ltd. ISBN 81-7764-669-9

D. MODULES DEVELOPED FOR TEACHERS:

40. Genetic Disorder (2022)
41. Tools and Technologies (2022)
42. Applications of Recombinant Technology (2022)
43. AIDS (2018)
44. Immunity (2018)

E. BOOKS EDITED/ PUBLISHED:

1. **An Interplay of Cellular and Molecular Components of Immunology.** ISBN 978-1032260730 by Taylor & Francis Group. CRC Press.
2. **Essentials of Immunology, Laboratory Manual** (*A Laboratory Manual for Students of Biological and Allied Sciences*) by Prestige Publishers. ISBN 978-81-958057-4-7
3. **BZYET-141 Immunology** (IGNOU) B.Sc. Life Science: Block 3 & 4. ISBN: 978-93-5568- 221-5.
4. **BBCET-145 Molecular Basis of non-infectious Human diseases** (IGNOU) B.Sc. (Hons) Biochemistry Programme: Block 3 and 4. ISBN: 978-93-5568- 651-0
5. **BBCET-146 Molecular Basis of non-infectious Human diseases- Laboratory** (IGNOU) B.Sc. (Hons) Biochemistry Programme.
6. **BBCCT-127 Immunology** (IGNOU) B.Sc. (Hons) Biochemistry Programme: Complete course.
7. **BBCCT-128 Immunology- Laboratory** (IGNOU) B.Sc. (Hons) Biochemistry Programme.
8. **Textbook of Biotechnology** Class XII NCERT. ISBN: 978-93-5292- 402-8.
9. **Laboratory Manual of Biotechnology** for Class XII NCERT.
10. **Laboratory Manual of Biotechnology** for Class XI NCERT.

RESEARCH PROJECTS (MAJOR GRANTS/RESEARCH COLLABORATION)

“*Toxicological effects of residues from the degradation of commercialized TiO₂-based nanomaterials on bacteria*” Funded by **DST, Government of India, Ministry of Science & Technology**. (17 Lakh).

AWARDS AND DISTINCTIONS

1. Awarded “**Best Women Faculty Award-2021**” by Novel Research Academy, India under the Ministry of MSME, Government of India and recognized by Global Accreditation Assessment Forum Series (GAAFS) Washington D.C., United States of America.
2. Awarded “**SCIENCE AMBASSADOR-2017**” at 1st Science Ambassador Program organized by Bio-Rab Laboratories in association with Deshbandhu College on 6th November, 2017 and held at St. Thomas Girls Sr. Sec. School, Delhi.



Faculty Details: Prof. Poonam Sharma

3. **BOYSCAST FELLOWSHIP** 2009-2010 by Department of Science & Technology (DST), Ministry of Science and Technology, Government of India for conducting advanced research in the area of Ecological Engineering for duration of twelve months at LIEBE-CNRS, Metz, France.
4. Best poster award given by **American Society of Microbiology** on a paper entitled “Localization of *lin* genes and IS6100 on plasmids in HCH-degrading *Sphingobium indicum* B90A, *Sphingobium japonicum* UT26, *Sphingobium francense* Sp+ and transposition of IS6100 in *Sphingobium chlorophenicum* DSM 7098” at the 46th Annual Conference of AMI “Micro-Biotech 2005” held during December 8 – 10, 2005, at Hyderabad, India.
5. Received Council of Scientific and Industrial Research- **Senior Research Fellowship** (CSIR-SRF) in Life Sciences (2004) {<http://csirhrdg.nic.in/jrfsrfa2.htm>}.
6. Awarded Council of Scientific and Industrial Research-**Junior Research Fellowship** (CSIR-JRF) in Life Sciences (2002) {<http://csirhrdg.nic.in/jrfsrfa2.htm>}.
7. Qualified Council of Scientific and Industrial Research-University Grants Commission (CSIR-UGC) **National Eligibility for Lectureship Test (NET)**, June 2001 {<http://csirhrdg.nic.in/jrfsrfa2.htm>}.
8. Selected among **top 20% Junior Research Fellows** in 2001-2002 {<http://csirhrdg.nic.in/spm.htm>}.
9. Qualified **ICMR - JRF** Year 2001 {<http://icmr.nic.in/jrf.htm>}.
10. Awarded **National Award for Advance Studies** 2000 during Master of Science.
11. Topped the college during **Bachelor of Science Zoology** (Hons).

OVERSEAS WORK EXPERIENCE:

1. **BOYSCAST Fellow** for twelve months (June 2010- June 2011) at **Laboratoire Ecotoxicologie Universite Paul Verlaine, Rue du General Delestraint 57070 Metz, France** for conducting advanced research in the field of Ecological Engineering Science LIEBE, Université Paul Verlaine-Metz, France.
2. Worked as a **Visiting fellow** for six months in the Dr. H.P. Kohler’s laboratory (2 March, 2006-30 August, 2006) at **Swiss Federal Institute for Environmental Science and Technology (EAWAG), Dubendorf, Switzerland** in the project entitled “Bioremediation of pesticide-contaminating soils and its effect on soil functionality” under the “Indo-Swiss Collaboration in Biotechnology” (ISCB).

RESOURCE PERSON

1. **Resource Person** in the programme entitled “**Development of Textbook in Biotechnology for Higher Secondary Stage; Hindi Version**” organized by Department of Education in Science and Mathematics, NCERT, New Delhi from 9th June- 13, 2023.
2. **Resource Person** in the programme entitled “**Orientation of Teachers on the Newly Developed Textbook of Biotechnology for Higher Secondary Stage: Northern and Eastern Central Region**” organized by Department of Education in Science and Mathematics, NCERT, New Delhi from 14th-18th March 2023.
3. **Resource Person** in the workshop entitled “**Identification of Core Concepts in Science for Middle and Secondary Stages of School Education in the light of National Education Policy (NEP) 2020**” organized by Department of Education in Science and Mathematics, NCERT, New Delhi from 09th - 13th March 2023.
4. **Resource Person** in the programme entitled “**Orientation of Teachers on the Newly Developed Textbook of Biotechnology for Higher Secondary Stage: Western and Central Region**” organized by Department of Education in Science and Mathematics, NCERT, New Delhi in collaboration with ZIET, Mumbai from 1st-3rd March 2023.
5. **Resource Person** in the workshop entitled “**National Junior Scientist Award for School Children**” organized by Department of Education in Science and Mathematics, NCERT, New Delhi from 10th February 2023.
6. **Resource Person** in the programme entitled “**Modification and Upgradation of Biology and Biotechnology Laboratory**” organized by Department of Education in Science and Mathematics, NCERT, New Delhi from 30th January -3th February 2023.
7. **Resource Person** in the workshop entitled “**Identification of Core Concepts in Science for Middle and**



Faculty Details: Prof. Poonam Sharma

- Secondary Stages (classes VI to XII) of School Education in the light of National Education Policy (NEP) 2020** organized by Department of Education in Science and Mathematics, NCERT, New Delhi from 23rd - 25th January 2023.
8. **Resource Person** in the programme entitled **“Orientation of Teachers on the Newly Developed Textbook of Biotechnology for Higher Secondary Stage”** organized by Department of Education in Science and Mathematics, NCERT, New Delhi from 1st-3rd December 2022.
 9. **Resource Person** in the programme entitled **“Orientation of Teachers on the Newly Developed Textbook of Biotechnology for Higher Secondary Stage”** organized by Department of Education in Science and Mathematics, NCERT, New Delhi from 31st-04th December, 2022.
 10. **Resource Person** in the programme entitled **“Orientation of Teachers on the Newly Developed Textbook of Biotechnology for Higher Secondary Stage”** organized by Department of Education in Science and Mathematics, NCERT, New Delhi from 7th -11th October 2022.
 11. **Resource Person** in the programme entitled **“Modification and Upgradation of Biology and Biotechnology Laboratory”** organized by Department of Education in Science and Mathematics, NCERT, New Delhi from 5th- 9th August 2022.
 12. **Resource Person** in the programme entitled **“Modification and Upgradation of Biology and Biotechnology Laboratory”** organized by Department of Education in Science and Mathematics, NCERT, New Delhi from 1st - 5th August 2022.
 13. **Resource Person** in the programme entitled **“Orientation of Teachers on the Newly Developed Textbook of Biotechnology for Higher Secondary Stage”** organized by Department of Education in Science and Mathematics, NCERT, New Delhi from 23rd - 27th June 2022.
 14. **Resource Person** in the programme entitled **“Orientation of Teachers on the Newly Developed Textbook of Biotechnology for Higher Secondary Stage”** organized by Department of Education in Science and Mathematics, NCERT, New Delhi from 08th - 12th March 2022.
 15. **Resource Person** in the programme entitled **“Development of Learning Outcomes based Assessment Items under Roadmap in Biology at Higher Secondary Stage”** organized by Department of Education in Science and Mathematics, NCERT, New Delhi from 26th -27th February 2022.
 16. **Resource Person** in the programme entitled **“Development of Learning Outcomes based Infographics Resources in Biology at Higher Secondary Stage”** organized by Department of Education in Science and Mathematics, NCERT, New Delhi from 21st – 25th February 2022.
 17. **Resource Person** in the programme entitled **“Development of Learning Outcomes based Assessment Items under Roadmap in Biology at Higher Secondary Stage”** organized by Department of Education in Science and Mathematics, NCERT, New Delhi from 09th - to 13th February 2022.
 18. **Resource Person** in the programme entitled **““Development of Learning Outcomes based activities under Roadmap in Biology at Higher Secondary Stage (byte sized videos)”** organized by Department of Education in Science and Mathematics, NCERT, New Delhi from 03rd – 04th February 2022.
 19. **Resource Person** in the programme entitled **““Development of Learning Outcomes based activities under Roadmap in Biology at Higher Secondary Stage (byte sized videos)”** organized by Department of Education in Science and Mathematics, NCERT, New Delhi from 17th -19th January 2022.
 20. **Resource Person** in the programme entitled **“Development of Infographics Resources in Biology and Chemistry at Higher Secondary Stage”** organized by Department of Education in Science and Mathematics, NCERT, New Delhi from 09th November 2021, 23rd- 26th November 2021.
 21. **Resource Person** in the programme entitled **“Development of Audio/Video Resources in Biology and Chemistry at Higher Secondary Stage”** organized by Department of Education in Science and Mathematics, NCERT, New Delhi from 26th - 28th October 2021.
 22. **Resource Person** in the programme entitled **“Development of Learning Outcomes based Resources in Biology”** organized by Department of Education in Science and Mathematics, NCERT, New Delhi from 15th September 2021, 04th -6th October 2021.
 23. **Resource Person** in the programme titled **“Development of Laboratory Manual in Biotechnology for Class XII”** organized by Department of Education in Science and Mathematics, NCERT, New Delhi from 23rd -27th



Faculty Details: Prof. Poonam Sharma

March, 2021 in DESM, NCERT, New Delhi.

24. **Resource Person** in the programme titled “**Workshop for the review of the textbook of Biotechnology for Class XII**” organized by Department of Education in Science and Mathematics, NCERT, New Delhi from 17th -2st March, 2021 in DESM, NCERT, New Delhi.
25. **Resource Person** in the programme titled “**Development of Textbook of Biotechnology for Class XII**” organized by Department of Education in Science and Mathematics, NCERT, New Delhi from 3rd - 7th February, 2021 for in DESM, NCERT, New Delhi.
26. **Resource Person** in the programme titled “**Development of Laboratory Manual in Biotechnology for Class XI**” organized by Department of Education in Science and Mathematics, NCERT, New Delhi from 1st - 5th March, 2020 for in DESM, NCERT, New Delhi.
27. **Resource Person** in the programme entitled “**Development of Laboratory Manual in Biotechnology for Higher Secondary Stage**” organized by Department of Education in Science and Mathematics, NCERT, New Delhi from 22nd July- 26th July, 2019.
28. **Resource Person** in the programme entitled “**Development of Laboratory Manual in Biotechnology for Higher Secondary Stage**” organized by Department of Education in Science and Mathematics, NCERT, New Delhi from 29th May- 2nd June, 2019.
29. **Resource Person** in the programme entitled “**Development of Laboratory Manual in Biotechnology for Higher Secondary Stage**” organized by Department of Education in Science and Mathematics, NCERT, New Delhi from 24th - 28th April, 2019.
30. **Resource Person** in the programme entitled “**Development of Textbook in Biotechnology for Higher Secondary Stage**” organized by Department of Education in Science and Mathematics, NCERT, New Delhi from 29th September- 2nd October, 2018.
31. **Resource Person** in the programme entitled “**Development of Textbook in Biotechnology for Higher Secondary Stage**” organized by Department of Education in Science and Mathematics, NCERT, New Delhi from 27th-31st August, 2018.
32. **Resource Person** in the “**Summer Immersion Program 2018**” under DBT Star College Scheme in association of IQAC conducted from 11th -18th July, 2018.
33. **Resource Person** intercollege workshop “**Biotechnology**” under DBT Star College Scheme in association of IQAC conducted from 23rd-24th December 2019.
34. **Resource Person** “**Summer Immersion Program**” under Star College scheme funded by DBT (Ministry of science and Technology) held at Gargi College, 11th to 18th July 2018.
35. **Resource Person** workshop on “**It’s in My Genes: A Molecular Biology Approach**” as held at Department of Zoology, Gargi College on March 14- 15, 2017.
36. **Resource Person**: Workshop on “**Molecular Biology Equipment**”, Department of Zoology, Gargi College on 9th October 2014.
37. **Resource Person**: Workshop on “**Laboratory Training for Technical Staff**” of science departments of Gargi College on September 2013

CONFERENCE ORGANIZATION/ PRESENTATIONS

1. Participated in One Week International Workshop on **Computational Genomics for NGS data analysis** November 26th-30th, 2022. Delhi School of public Health, Institute of Eminence, University of Delhi, India, DBC I4 Centre Deshbandhu College, (University of Delhi), New Delhi, India, Hansraj College, North Campus (University of Delhi), New Delhi, India, Dr. M.G.R Educational & Research Institute University, India, NyBerMan Bioinformatics Europe, Orleans, France and Quanta Calculus Pvt Ltd, India.
2. Participated in three days lecture series on “**NEP 2020: Delhi University Undergraduate Curriculum Framework 2022**” being organized by ILL, University of Delhi in collaboration with Mahatma Hansraj Faculty Development Centre, Hansraj College, University of Delhi during January 27 to 29, 2022.
3. Poster presentations in the **6th Annual International Conference of INSCR** on “MICROBES IN SUSTAINABLE DEVELOPMENT” organized in association with the Department of Zoology (DU), Acharya Narendra Dev College (DU), Deen Dayal Upadhyaya College (DU), Gargi College (DU), Kirori Mal College



Faculty Details: Prof. Poonam Sharma

- (DU), PG Department of Zoology (MU), Maitreyi College (DU), Ramjas College (DU), Sri Venkateswara College (DU), C.M.P. College (AU), SGTB Khalsa College (DU), COCAS (PU) & Phixgen Pvt. Ltd. from November 15 to 18, 2021.
4. Poster presentation in Virtual International Conference on “**Infection and Immunity**” during 8th- 10th October, 2021 organized by Department of Zoology, Daulat Ram College, University of Delhi.
 5. Attended Online **International Workshop** on ‘**Public Health, Wellness and Well Being**’, held from 12th-13th July, 2021 organized by Maitreyi Alumni Association, Maitreyi College, University of Delhi.
 6. Participated in **National Webinar** entitled “**Teacher’s e-Kit: A Four Quadrant Approach for Development of OERs. for Higher Education**” organized by Guru Angad Dev Teaching Learning Centre, SGTB Khalsa College, University of Delhi under the Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching (PMMMNMTT) of Ministry of Education on 09th September 2021.
 7. Participated and presented paper in **International Conference** on “**Innovations in Biotechnology and Life Sciences**” hosted by the Department of Biotechnology, DTU from 18th -20th, December 2020.
 8. Participated and Successfully Completed ten days training program on “**Genomics and Metagenomics: Hands on Training Experience on Data Analysis**” conducted by Phixgen Pvt. Ltd from 1st -10th July, 2020.
 9. Participated in **International Conference** on “**Web on COVID-19: Road-map to Future Environment**” held on 5th, June 2020 organized by the Department of Botany, St. John’s College.
 10. Participated in one week “**National Policy Workshop: Virtual on Countermeasures for Riverine and Marine Plastic Litter in India**” held on 12th -22nd May, 2020 organized by National Productivity Council (NPC) New Delhi and sponsored by UNEP India.
 11. Participated in two day “**Second JNU Workshop on Empowering Teaching through Online Mode (JNU-WETOM II)**” held on 9th -10th May, 2020 organized by Jawaharlal Nehru University, New Delhi.
 12. Participated in Science Academics Lecture workshop on “**Ingenuity in Biological Sciences**” held at Gargi College, University of Delhi, Delhi on 11th-12th January, 2018.
 13. Participated in NAAC sponsored National Seminar “**Mentoring the Teacher-Mentor: Capacity Building Programme**” held at Gargi College, University of Delhi, Delhi on 19th-20th January, 2018.
 14. Participated in INSCR International Conference (IIC-2017) on “**Role of Microbe-Plant-Animal Interactions in Human Health**” held at University of Delhi, Delhi on 26th-28th September, 2017.
 15. Participated in workshop on “**h-index**” held at Gargi College, University of Delhi, Delhi on March 09, 2017.
 16. Participated in national conference on “**Combating industrial pollution for sustainable environment- A fusion of industrial and scientific efforts**” held at Gargi College, University of Delhi, Delhi on 22nd -23rd September 2016.
 17. Attended the Symposium in “**Mathematical & Computational Biology**” held during 10th March, 2015 organized by NNMCB at Sri Venkateswara College, University of Delhi.
 18. Participated and presented poster at JNU conference on Indo-US conference and workshop on “**Synthetic and Systems Biology**” on November 9-12 2014, JNU convention center, New Delhi.
 19. Poster presentation at one day Symposium on “**Recent Trends in Biology**” on 25th February, 2015 held at Maitreyi College.
 20. Participated and Won Best Poster at national conference “**Striving & Thriving Towards Diffusion of Student-driven Research in Science and Technology** for Inspired Learning” on 16th -17th October 2014 organized by Embedded Systems and Robotics Centre and Department of Electronics, Maharaja Agrasen College, University of Delhi, New Delhi.
 21. Participated in American Society of Microbiology (ASM) Workshop on “**Culture of Responsibility**” held during 2nd September, 2013 at Maitreyi College, DU, Delhi, India.
 22. Participated in one day workshop on “**Non coding RNA**” held during 7th November, 2009 at School of Life Sciences, Jawaharlal Nehru University, Delhi.
 23. Participated in **3rd Virtual Training Workshop on Bioinformatics**, organized by Asian Bioinformatics Research and Education Network (ABREN), sponsored by Kyushu Institute of Technology (KIT), Fukuoka, Japan and Advanced Technology Institute (ATI), Saitama, Japan, from March-April, 2009.



Faculty Details: Prof. Poonam Sharma

24. Participated in the workshop entitled “**Development of Online Quizzes in Life Science**” as Subject Expert, organized by Institute of Life Long Learning (ILLL), University of Delhi, on 13th April 2009.
25. Participated in **National Symposium on Biotechnology** in the **Post-Genomic Era** held during 9th -10th April, 2009 at Sri Venkateswara College, Delhi University, Delhi, India.
26. Participated in **49th Annual Conference of AMI** held during 18th -20th November, 2008 at Delhi University, Delhi, India.
27. Participated in **46th Annual Conference** of AMI “**Micro-Biotech 2005**” held during Dec. 8-10, 2005, at Hyderabad, India.
28. Participated in the International Conference, “**Bioconvergence 2004**” held during 18-20 November 2004 at TIET, Patiala, India.
29. Participated in the International symposium on “**Biological Approaches for Detection and Removal of Pesticides**” under the Indo-Swiss Collaboration in Biotechnology at Agharkar Research Institute, 8-9 March 2004, Pune, India.
30. Mini Symposium on “**Utilization of Microbes for the Development of Bioremediation Technologies**” organized and held from 7-8 October, 2002, in Department of Zoology, University of Delhi and sponsored by SDC, Switzerland and DBT, India.
31. Attended and participated in Quiz and MCQ competition at Sri Aurobindo College (Zoology Society), D.U (Inter-College Competition 1999).
32. Chandana Mukherjee, Malini Rajendra, Poonam Sharma and S. Bhanumati paper “**Empowering Student Education in Chemistry with Novel Ideas and Tools**” presented at the 13th Annual Green Chemistry and Engineering Conference held at Washington, DC 20036, USA from 23rd-25th June, 2009 Oral presentation.
33. Poster presentation 2006 “Genes Responsible for Degradation of β - and δ - Hexachlorocyclohexane (HCH) in *Sphingobium indicum* B90A”. Vishakha Raina, Poonam Sharma, Christoph Werlen, Hans-Rudolf Buser, Christof Holliger and Hans-Peter E. Kohler at Leipzig Conference, Germany.
34. Participated in 46th Annual Conference of AMI “**Micro-Biotech 2005**” held during 8th-10th December, 2005, Hyderabad, India and made a Poster presentation.
35. Participated in the International Conference, “**Bioconvergence 2004**” held during 18th -20th November, 2004 and made a Poster presentation.
36. Participated in the International symposium on “**Biological Approaches for Detection and Removal of Pesticides**” under the Indo-Swiss Collaboration in Biotechnology at Agharkar Research Institute, 8th-9th March, Pune, India and made an Oral presentation.