Curriculum Vitae

Name : Dr. Monika Sharma

Designation : Professor

Department : Zoology, Miranda House, University of Delhi

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EDUCATION

Ph.D. Department of Microbiology, V P Chest Institute, University of Delhi, 2010.
(Title of the thesis: To Study the Effect of *M. tuberculosis* Infected Macrophages on T cell Viability).
M.Sc. Zoology, Specialization Cell and Molecular Biology, University of Delhi, 2001

CAREER PROFILE

Assistant Professor, Department of Zoology, Miranda House, University of Delhi, January 2009-January 2021
Associate Professor, Department of Zoology, Miranda House, University of Delhi, January 2021-January 2024
Professor, Department of Zoology, Miranda House, University of Delhi, January 2024- till date

SUBJECTS TEACHING TO UG COURSES

Cell Biology, Biochemistry, Immunology, Genetics and Evolutionary Biology, Comparative anatomy of vertebrates

AREA OF SPECIALIZATION and RESEARCH DOMAIN

Molecular Immunology and Microbiology. Immunopathogenesis of Mycobacterium tuberculosis. My research is focused on understanding the role of proline-proline-glutamic acid (PE/PPE) proteins of Mtb in the modulation of the host immune response, such as host cell apoptosis and autophagy, and the potential of these proteins to target host mitochondrial functions and integrity.

We have identified potential TB vaccine candidates using an immunoinformatics approach based on PE/PPE family proteins and have received funding from ICMR to validate the immunogenicity and efficacy of this vaccine in human PBMCs and a mouse model. Also, we focus on DosR regulon genes to develop subunit vaccines and understand their role in latency as well as use of DosR genes in developing an immune-PCR-based diagnostic method.

Sponsored Research Projects at Miranda House:

Ongoing Project as Principal Investigator:

1. **Year 2024-2028**
   Title: Evaluation of immunogenicity and protective efficacy of an epitope-based vaccine designed from late-stage-specific, antigenic PE/PPE proteins of Mycobacterium tuberculosis in human PBMC and mouse model.
   Funding Agency: ICMR
   Grant Sanctioned: Rs. 2.41 Crores

Ongoing Project as Co-Principal Investigator:

1. Year: 2025-2028
   Diagnostic potential of early and late stage expressing *Mycobacterium tuberculosis* antigens as exosomal biomarkers to discriminate the clinical disease from latent infection.
   Funding Agency: ICMR
   Grant Received: Rs 1.63 Crores

2. **Year: 2023-2025**
   Rapid diagnosis of pulmonary tuberculosis based on detection of mycobacterial antigens within serum/urine samples by immuno-PCR assays.
   Funding Agency: ICMR
   Grant Received: Rs 36.3 Lakhs

3. **Year: 2022-2025**
   Immunological validation and protective efficacy of multiepitope vaccine constructs designed from Mycobacterium tuberculosis dormancy associated proteins Rv2627c and Rv2628 in mouse model of tuberculosis.
   Funding Agency: DST-SERB
   Grant Sanctioned: Rs 27 Lakhs

Completed Projects as Principal Investigator:

1. **Year: 2018-2022**
A study of macrophage apoptosis and mitochondrial integrity in response to PE/PE_PGRS family proteins of Mycobacterium tuberculosis.
Funding Agency: DST-SERB
Grant Amount: Rs. 68.72 Lakhs.

Completed Projects as Co-PI:

1. **Year: 2013-2017**
Molecular cloning and immunological validation of three hypothetical proteins of *M. tuberculosis* with strong T-cell epitopes.
Funding Agency: DBT
Grant Amount: Rs. 66.48 Lakhs.

2. **Year: 2012-2016**
Cloning expression, purification and immunological characterization of mymA operon proteins.
Funding Agency: Open-source drug discovery for tuberculosis, CSIR project
Grant Amount: 21.79 Lakhs.

3. DU Innovation Project MH308: Synthesis of Henna (lawsonia inermis) based scaffolds and comparison of their color and antimicrobial activity.
Grant Amount Rs. 5 Lakhs.

Project mentors: Dr. Monika Sharma (Department of Zoology), Dr. Sharda M. Sonkar (Department of Chemistry), Dr. Anshika Lumb (Department of Chemistry)

AWARDS

- Awarded **EMBO Travel Grant** for attending and presenting "Role of Mycobacterium tuberculosis PE/PE_PGRS family protein in modulating host cell survival" at EMBO Workshop "Cell Death in Immunity & Inflammation" held in October 06 – 09, 2019, Crete, Greece.
- Awarded with the **Bill and Melinda Gates Foundation Global Health Travel Award** for attending the conference Tuberculosis: Mechanisms, Pathogenesis and Treatment held at the Banff, Alberta, Canada on Jan 17 - Jan 21, 2019.
- Awarded **travel grant from DST** for oral presentation of paper entitled "DosR Proteins Rv2627 and Rv2728 of Mycobacterium tuberculosis induce IFN γ and downregulate T

regulatory cells in TB infected individuals and their healthy contact" 12th Vaccine Congress Organized by Elsevier, Budapest, Hungary; 16-19th September,2018.

- Awarded **travel grant from UGC** for oral presentation of paper entitled "Defining T cell epitopes from DosR regulon proteins of M. tuberculosis as potential vaccine candidates" at 18th annual conference on vaccine research, Bethesda, MD April 13-15, 2015.

Publications:

1. Ayushi Kaur Bedi, Monika Sharma, Sadhna Sharma. Immuno-PCR: Advancements, and applications for infectious diseases diagnosis. Clinica Chimica Acta. 576 (2025) 120409.

2. Priyanka, Bhatt Parul, Bedi Ayushi Kaur, Basil Mandira Varma, Sharma, Monika, Sharma Sadhna. Association of Latent Tuberculosis and Vitamin D Levels in Young Individuals: An Exploratory Study. International Journal of Mycobacteriology (2025) 10.4103/ijmy.ijmy_6_25.

3. Priyanka, Sadhna Sharma., Mandira Varma-Basil., **Monika Sharma**. C-terminal region of Rv1039c (PPE15) protein of Mycobacterium tuberculosis targets host mitochondria to induce macrophage apoptosis. Apoptosis. (2024). https://doi.org/10.1007/s10495-024-01965-2. **(IF.7.2) (Corresponding author)**
4. Priyanka, Sadhna Sharma., Hemant Joshi, H., Chanchal Kumar., Rashid Waseem., **Monika Sharma**. Mycobacterium tuberculosis protein PPE15 (Rv1039c) possesses eukaryote-like SH3 domain that interferes with NADPH Oxidase assembly and Reactive Oxygen Species production. BBA - Molecular Cell Research. 1871 (2024) 119702. https://doi.org/10.1016/j.bbamcr.2024.119702. **(IF 5.1) (Corresponding author)**
5. Medha, Priyanka, Sadhna Sharma, **Monika Sharma** PE_PGRS45 (Rv2615c) protein of Mycobacterium tuberculosis perturbs mitochondria of macrophages. Immunology and Cell Biology (2023) 101(9): 829-846. **(IF 4.0) (Corresponding author)**
6. Priyanka, Medha, Bhatt, P., Joshi, H., Sharma, S., **Sharma, M.** Late stage specific Rv0109 (PE_PGRS1) protein of Mycobacterium tuberculosis induces mitochondria mediated macrophage apoptosis. Microbial Pathogenesis (2023), 176, art. no. 106021 **(IF 3.8) (Corresponding author)**
7. Medha Singh, Hemant Joshi**,** Sadhna Sharma**, Monika Sharma.** Elucidating the function of hypothetical PE_PGRS45 protein of Mycobacterium tuberculosis as an oxido-reductase: a potential target for drug repurposing for the treatment of tuberculosis. Journal of Biomolecular Structure and Dynamics (2022). DOI: 10.1080/07391102.2022.2151514 **(IF- 4.4) (Corresponding author)**
8. Medha Singh, Priyanka Taank**,** Parul Bhatt**,** Sadhna Sharma**, Monika Sharma.** Role of C-terminal domain of Mycobacterium tuberculosis PE6 (Rv0335c) protein in host mitochondrial

stress and macrophage apoptosis. Apoptosis. (2022). DOI:10.1007/s10495-022-01778-1. **(IF-7.2) (Corresponding author)**

9. Parul Bhatt, **Monika Sharma**, PP Sharma, B Rathi, S Sharma. *Mycobacterium tuberculosis* dormancy regulon proteins Rv2627c and Rv2628 as Toll like receptor agonist and as potential adjuvant. International Immunopharmacology. (2022) 112. DOI: 10.1016/j.intimp.2022.109238. **(IF- 5.7)**
10. Medha, Priyanka Taank, Sadhna Sharma, **Monika Sharma**. Design of a peptide-based vaccine from late stage specific immunogenic cross-reactive antigens of PE/PPE proteins of Mycobacterium tuberculosis. European Journal of Pharmaceutical Sciences. 168 (2022). doi.org/10.1016/j.ejps.2021.106051 **(IF- 4.6) (Corresponding author)**
11. Priyanka Taank, **Monika Sharma,** Sadhna Sharma. Ethnicity based comprehensive evaluation of polymorphism in interferon-gamma gene and its association with pulmonary and extra-pulmonary tuberculosis risk: An updated trial sequential meta-analysis. International Journal of Mycobacteriology (2021) 10(3): 243-254. DOI: 10.4103/ijmy.ijmy_108_21 **(IF- 1.2**)
12. Medha Singh, Parul Bhatt, Priyanka Taank**, Monika Sharma**, Sadhna Sharma. Prediction and identification of T cell epitopes of COVID-19 with balanced cytokine response for the development of peptide based vaccines. In silico pharmacology. (2021) 9 (1): 1-17.
13. Medha, Sadhna Sharma, **Monika Sharma.** Proline-Glutamate/Proline-Proline-Glutamate (PE/PPE) proteins of Mycobacterium tuberculosis: The multifaceted immune-modulators. Acta Tropica (2021) 222, 106035. https://doi.org/10.1016/j.actatropica.2021.106035 **(IF-3.2) (Corresponding author)**
14. Medha Singh, Parul Bhatt, **Monika Sharma**, Mandira Varma-Basil, Anil Chaudhry, Sadhna Sharma. 2019. Immunogenicity of late-stage specific peptide antigens of Mycobacterium tuberculosis. Infect Genet Evol. (2019) 74:103930. doi: 10.1016/j.meegid.2019.103930. **(IF-2.8)**
15. Swati Singh, **Monika Sharma**, Anil Chaudhary, Sadhna Sharma. Rv2626c and Rv2032 activate TH1 response along with downregulation of regulatory T cells in Peripheral Blood Mononuclear Cells of Tuberculosis patient. Comparative Immunology, Microbiology and Infectious Diseases 62 (2019) 46–53. **(IF-2.1)**
16. Kirti Pandey, Swati Singh, Parul, Medha, **Monika Sharma**, Anil Chaudhary, Sadhna Sharma. DosR proteins of *Mycobacterium tuberculosis* upregulate effector T cells and down regulate T regulatory cells in TB patients and their healthy contacts. Microbial Pathogenesis 126 (2019) 399–406. **(IF-3.8)**
17. Iti Saraav, Kirti Pandey, Richa Misra, Swati Singh, **Monika Sharma** and Sadhna Sharma. Characterization of MymA protein as a flavin-containing monooxygenase and as a target of isoniazid. Chemical Biology & Drug Design (2017) 89(1):152–160. **(IF-2.8)**
18. Iti Saraav, Kirti Pandey, **Monika Sharma**, Swati Singh, Prasun Dutta, Anshu Bhardwaj, Sadhna Sharma. Predicting promiscuous antigenic T cell epitopes of *Mycobacterium tuberculosis* mymA operon proteins binding to MHC Class I and Class II molecules. Infection, Genetics and Evolution, (2016) 44 182–189. **(IF-2.1)**
19. Neeraj K Saini, Rajesh Sinha, Pooja Singh, **Monika Sharma**, Rakesh Pathak, Nisha Rathor, Mridula Bose. Mce4A protein of *Mycobacterium tuberculosis* induces pro inflammatory

cytokine response leading to macrophage apoptosis in a TNF-α dependent manner. Microbial pathogenesis, (2016) 100: 43-50. **(IF-3.8)**

20. **Monika Sharma** and Sadhna Sharma. Toll like Receptor-2 Signaling in *Mycobacterium tuberculosis* infection- A Double Edged Sword. Forum on Immunopathological Diseases and Therapeutics, (2015) 6(3–4): 227–235 **(First author)**
21. Kirti Pandey, **Monika Sharma**, Iti Saarav, Swati Singh, Prasun Dutta, Anshu Bhardwaj, Sadhna Sharma. Analysis of the DosR regulon genes to select cytotoxic T lymphocyte epitope specific vaccine candidates using a reverse vaccinology approach. International Journal of Mycobacteriology, (2016) 5(1): 34-43. **(IF-1.2)**
22. **Monika Sharma**, Sadhna Sharma and Mridula Bose. *Mycobacterium tuberculosis* infected macrophages lead to apoptosis of antigen activated CD8 T cells. International Journal of Mycobacteriology. (2015) 4:174-175. **(IF-1.2) (First author)**
23. Iti Saraav, Swati Singh, Kirti Pandey, Ekta Vishnoi, **Monika Sharma**, Sadhna Sharma. Cell wall-associated *Mycobacterium tuberculosis* Rv3083 protein stimulates macrophages through toll-like receptor-2 (TLR2). International Journal of Mycobacteriology. (2015) 4:176.
24. Sugata Roy, Sadhna Sharma, **Monika Sharma**, Mridula Bose. Differential signaling of inducible nitric oxide synthase induction in *Mycobacterium tuberculosis* infected alveolar epithelial cell line A549 in response to cytokines IFN-γ, TNF-α and IL-1β. International Journal of Mycobacteriology (2014) 3: 17-24. **(IF-1.2)**
25. Amita Chandolia., Nisha Rathor., **Monika Sharma.**, Neeraj Kumar Saini., Rajesh Sinha., Pawan Malhotra., Vani Brahmachari., Mridula Bose. Functional analysis of mce4A gene of *Mycobacterium tuberculosis* H37Rv using antisense approach. Microbiological Research (2014) 169(9–10):780–787. **(IF-5.1)**
26. **Monika Sharma.**, Mridula Bose., Abhimanyu., Latika Sharma., Amit Diwakar., Sujeet Kumar., Shailendra Nath Gaur., Jayant Nagesh Banavalikar. Intracellular survival of *Mycobacterium tuberculosis* in macrophages is modulated by phenotype of the pathogen and immune status of the host. International Journal of Mycobacteriology (2012) 1:65-74. **(IF-1.2) (First author)**
27. Sadhna Sharma1, **Monika Sharma**1 and Mridula Bose (1Joint first author) *Mycobacterium tuberculosis* infection of human monocyte-derived macrophages leads to apoptosis of T cells. Immunology and Cell Biology (2009) 87: 226–234**. (IF 4)**

28. Neeraj Kumar Saini, **Monika Sharma**, Amita Chandolia, Rashmi Pasricha, Vani Brahmachari and Mridula Bose. Characterization of Mce4A protein of *Mycobacterium tuberculosis*: role in invasion and survival. BMC Microbiology (2008) 8:200. **(IF-2.9)**
29. **Monika Sharma**, Sadhna Sharma, Sugata Roy, Saurabh Varma and Mridula Bose. Pulmonary epithelial cells are a source of IFN-g in response to *Mycobacterium tuberculosis* infection. Immunology and Cell Biology (2007) 85:229-237. **(IF-5.1) (First author)**
30. Sadhna Sharma, **Monika Sharma**, Sugata Roy, Praveen Kumar, Mridula Bose. *Mycobacterium tuberculosis* induces high production of nitric oxide in coordination with

production of tumor necrosis factor a in patients with fresh active tuberculosis but not in MDR tuberculosis. Immunol. Cell Bio. (2004) 82: 377-382. **(IF-5.1)**

31. Sugata Roy, Sadhna Sharma, **Monika Sharma**, Ramesh Aggarwal, Mridula Bose. Induction of nitric oxide release from human alveolar epithelial cell line A549: in vitro correlate of innate immune response to *Mycobacterium tuberculosis*. Immunology (2004) 112: 471-480. **(IF-7.39)**

Ph.D. SUPERVISION

- Ph.D Supervisor of Priyanka registered on 15 November 2019, pursuing Ph. D in DSKC BioDiscovery Laboratory, Miranda House, University of Delhi. Title of the thesis "To study the role of PPR and PE_PGRS proteins of *Mycobacterium tuberculosis* in host cell survival by targeting mitochondria". (Thesis Submitted)
- Co-Supervisor of Parul Bhatt registered on November 15, 2017, pursuing Ph. D in DSKC BioDiscovery Laboratory, Miranda House, University of Delhi. Title of the thesis "To understand the role of TLR in *Mycobacterium tuberculosis* DosR regulon protein mediated macrophage activation and secretion of proinflammatory cytokines. (Degree awarded)
- Co-Supervisor of Medha registered on November 15, 2017, pursuing Ph. D in DSKC BioDiscovery Laboratory, Miranda House, University of Delhi. Title of the thesis "To understand the role of mitochondria in inducing macrophage apoptosis in response to antigenic proteins of *Mycobacterium tuberculosis*". (Degree awarded)
- Ph.D. Supervision of Anjali in DSKC BioDiscovery Laboratory, Miranda House, University of Delhi. Title of the thesis "Modulation of Host Cellular pathways by PE/PPE proteins of Mycobacterium tuberculosis". (Pursuing)
- Ph.D. Supervision of Nikita Kaur Bedi in DSKC BioDiscovery Laboratory, Miranda House, University of Delhi. Title of the thesis "Evaluation of immunogenicity and protective efficacy of an epitope-based vaccine designed from late-stage-specific, antigenic PE/PPE proteins of Mycobacterium tuberculosis in mouse model". (Pursuing)

INVITED TALKS IN NATIONAL AND INTERNATIONAL CONFERENCES

- Talk entitled "PE/PPE family proteins of Mycobacterium tuberculosis modulate host cellular pathways as molecular mimics of host proteins" March 8-10, 2024 at Integrative Chemistry, Biology & Translational Medicine (ICBTM 3.0), Udaipur, Rajasthan, Bharat, ICBTM 3.0
- Talk entitled "Mycobacterium tuberculosis protein PPE15 (Rv1039c) interferes with NADPH Oxidase assembly to inhibit Reactive Oxygen Species production as its survival strategy in host macrophages" October 5-8, 2023 at Golden Jubilee conference of IIS, IMMUNOCON-50 at All-India Institute of Medical Sciences, New Delhi.

- Talk entitled “A cell membrane associated protein PE_PGRS45 of Mycobacterium tuberculosis is a potential target for natural antimicrobial compounds” November 4-6, 2022 at 2nd International Conference on Natural Products and Human Health-2022 Theme: Recent Advances and Challenges in Human Health, Deshbandhu College, University of Delhi.
- Talk entitled “Mycobacterium tuberculosis Rv0335c induces host mitochondrial perturbations and apoptosis: as a molecular mimic of eukaryotic Bcl2 proteins” November 24-26, 2022 at 49th Annual Conference and General Body Meeting of the Indian Immunology Society IMMUNOCON-2022 “Immunology in Health and Disease” Postgraduate Institute of Medical Education, Chandigarh.
- Talk entitled “Role of mycobacterium tuberculosis PE/PE_PGRS family protein in modulating host cell survival”. EMBO workshop “Cell death in immunity & inflammation September 6-9 2019, Crete, Greece.
- Talk entitled “DosR proteins Rv2627 and Rv2728 of Mycobacterium tuberculosis induce IFN-γ and downregulate T-regulatory cells in TB infected individuals and their healthy contact” September 16-19, 2018 at 12th Vaccine congress organized by Elsevier, Budapest.
- Talk entitled “Mycobacterium tuberculosis latency associated proteins Rv2003c, Rv1736 and Rv1737c targeting host mitochondria may have role in persistence of pathogen” September 26-28, 2019 at “Role of Microbe Plant-animal Interactions In Human Health, University of Delhi, Delhi.

- Talk entitled “Defining T cell epitopes from Dosr regulon proteins of M. tuberculosis as potential vaccine candidates" April 13-15, 2015 at 18th Annual conference on vaccine research, Bethesda, MD.

PRESENTATIONS IN NATIONAL AND INTERNATIONAL CONFERENCES

- Priyanka, Sharma, S. & **Sharma, M**. 2024 "C-terminal region of Rv1039c (PPE15) of Mycobacterium tuberculosis induces mitochondria mediated macrophage apoptosis" at Keystone Symposia meeting on Tuberculosis- The Host-Pathogen interface at Keystone, Colorado, USA.
- Anjali, Priyanka, Sharma, S. & **Sharma, M**. 2024 "Mycobacterium tuberculosis PE_PGRS37 as a probable ATP and Calcium binding protein: a novel target for drugs that can be repurposed for Tuberculosis" at Integrative Chemistry, Biology & Translational Medicine, Udaipur, Rajasthan, Bharat, ICBTM 3.0. **(Best Poster award)**
- Priyanka, Medha, Bhatt, P, Sharma, S. & **Sharma, M**. 2023 “Mycobacterium tuberculosis protein Rv0109 induces mitochondria mediated macrophage apoptosis” at International Conference cum CME on Novel Insights into Pathogenesis of Tuberculosis for the development of Vaccines, Diagnostics and Therapeutics at Miranda House, University of Delhi, India. **(Best Poster award)**

- Priyanka, Medha, Bhatt, P, Sharma, S. & **Sharma, M**. 2023 "Rv0109 protein of Mycobacterium tuberculosis induces macrophage apoptosis by targeting host mitochondria" at 33rd ECCMID at Copenhagen, Denmark.

- Taank, P., Medha, Bhatt, P., Sharma, S. & **Sharma, M**. 2022. PE_PGRS1 (Rv0109) of *Mycobacterium tuberculosis* modulates host cell death pathways by targeting host mitochondria and promotes pathogen persistence. In: 2nd International RMBPD Colloquium Deciphering Bioregulatory Mechanism in Health and Disease using 'Omics' Approach, pp: 65, Department of Zoology, University of Delhi.
- Bhatt, P., Sharma, **M., Sharma**, P.P., Rathi, B. & Sharma, S. 2022. Immunoinformatics – A new perspective to design an adjuvanted vaccine for Tuberculosis using dormancy antigens. In: 2nd International RMBPD Colloquium Deciphering Bioregulatory Mechanism in Health and Disease using 'Omics' Approach, pp: 62, Department of Zoology, University of Delhi.

- Abhayakumar, A., Kritika. , Taank**,** P., Sharma, S. & **Sharma, M.** 2022. In-Silico Analysis of *Mycobacterium tuberculosis* Protein: predicted to be a potential virulence factor. In: 2nd International RMBPD Colloquium Deciphering Bioregulatory Mechanism in Health and Disease using 'Omics' Approach, pp: 72, Department of Zoology, University of Delhi.
- Choudhuri, S., Singh, K., Tanya, **Sharma, M**. & Sharma, S. 2022. Design of Multi-epitope based T-cell specific Influenza Virus Vaccine - An immunoinformatic Approach. In: 2nd International RMBPD Colloquium Deciphering Bioregulatory Mechanism in Health and Disease using 'Omics' Approach, pp: 79, Department of Zoology, University of Delhi.
- Kritika, Abhayakumar, A., Taank**,** P., Sharma, S. & **Sharma, M**. 2022. PE/PPE Proteins of Mycobacterium Tuberculosis Proteins Predicted to be Highly Disordered through In Silico Analysis: May Have Role in Virulence. In: 2nd International RMBPD Colloquium Deciphering Bioregulatory Mechanism in Health and Disease using 'Omics' Approach, pp: 87, Department of Zoology, University of Delhi.
- Singh, M., Bhatt, P., Taank, P., **Sharma, M** & Sharma, S. 2022. Design of a T Cell specific multi-epitopic COVID-19 vaccine with a balanced interplay of cytokines response. In: 2nd International RMBPD Colloquium Deciphering Bioregulatory Mechanism in Health and Disease using 'Omics' Approach, pp: 88, Department of Zoology, University of Delhi.
- Mukherji, R., Taank, P., Sharma, S. & **Sharma, M**. 2022. Predicting SH3-like domains in the PE-PPE family proteins of Mtb. H37Rv: insights into tuberculosis pathogenesis. In: 2nd International RMBPD Colloquium Deciphering Bioregulatory Mechanism in Health and Disease using 'Omics' Approach, pp: 90, Department of Zoology, University of Delhi. **(Best Poster award)**
- Medha , Parul Bhatt, Monika Sharma, Anil Chaudhry , Sadhna Sharma presented a poster entitled Validation of immunoinformatic approach to identify Mycobacterium tuberculosis late stage specific CD4 and CD8 epitopes for their vaccine candidature" at 45th Annual Meeting of Indian Immunological Society on Immunotherapy and Advances in Immunology (Immunocon 2018), Faridabad, India 1-3 November, 2018.
- Sharma Monika, Medha, Bhatt Parul, Sharma Sadhna presented a Poster entitled Mycobacterium tuberculosis latency associated protein Rv2628 targeting host mitochondria may have role in persistence of pathogen. 45th Annual Meeting of Indian Immunological Society on Immunotherapy and Advances in Immunology (Immunocon 2018) Faridabad, India 1-3 November, 2018.
- Yamini Gupta, Arvinder Singh, Monika Sharma, Sadhna Sharma presented a poster entitled Assessment of Immunogenicity of M.tb Rv2389c Gene product by in silico

analysis". DST Science Conclave at Miranda House, University of Delhi, 16-18 January 2019. **(Best Poster Award)**

- **Monika Sharma**, Sadhna Sharma. "DosR Proteins Rv2627 and Rv2728 of Mycobacterium tuberculosis induce IFN γ and downregulate Tregulatory cells in TB infected individuals and their healthy contact" 12th Vaccine Congress Organized by Elsevier, Budapest, Hungary; 16-19th September,2018.
- Palvi, Garvita, Medha, Parul, Swati, **Monika Sharma**, Sadhna Sharma. "Epitopic analysis of Interferon-γ inducing Promiscuous MHC Class II binding peptides of Mycobacterium tuberculosis as potential vaccine candidates" National Science Day, Jointly Organized by Indian Academy of Sciences, Bangalore and Indian National Science Academy, Delhi, 28 Feburary, 2018.
- Medha, Parul, Palvi, Garvita, Swati, **Monika Sharma**, Sadhna Sharma. "Prediction of Antigenic Promiscuous MHC Class II Binders of Mycobacterium tuberculosis capable of Inducing Interferon Gamma" (IPP22) in INSCR International Conference 2017 on "Role of Microbe Plant-Animal Interactions in Human Health" at University of Delhi, September 26-28, 2017.
- Swati Singh, Kirti Pandey, Iti Saraav, **Monika Sharma**, Sadhna Sharma. Latency associated antigens Rv2032 and Rv2626c emerge as good vaccine candidates against Mycobacterium tuberculosis 26th ECCMID Congress, the European Congress of Clinical Microbiology and Infectious Diseases, Amsterdam, Netherlands, April 9 – 12, 2016.
- Sadhna Sharma, I. Saraav, K. Pandey, S. Singh **Monika Sharma**. In silico identification of promiscuous CTL epitopes of MymA operon proteins of Mycobacterium tuberculosis for a epitope based vaccine design. Drug discovery and therapy world congress 2015, Boston, USA, 22-25 July, 2015.
- Kirti Pandey, **Monika Sharma**, Sadhna Sharma. Bioinformatic analysis of T cell antigens from DosR regulon of Mycobacterium tuberculosis. National Symposium on "Recent Advances in Immunology" July 17-18, 2014, University of Delhi
- Swati Singh, **Monika Sharma**, Sadhna Sharma. DosR Regulon associated latency antigens as novel vaccine candidates against Mycobacterium tuberculosis. National Symposium on "Recent Advances in Immunology" July 17-18, 2014, University of Delhi.
- Swati Singh, Iti Saraav, **Monika Sharma**, Sadhna Sharma. Latency antigens as vaccine candidates against Mycobacterium tuberculosis. Life Science Symposium Current Advances in Immunobiology and Cancer, BARC, Mumbai. Nov 28-30, 2013.
- Iti Saraav, Swati Singh, Kirti Pandey, Ekta Vishnoi, **Monika Sharma**, Sadhna Sharma. Mycobacterium tuberculosis Rv3083 (mymA) protein as a ligand for Toll like receptors (TLRs). Immunocon 2013, 40th Annual Conference of Indian Immunology Society, UCMS, Delhi Univ., Nov 15-17, 2013.
- Iti Saraav, Swati Singh, Kirti Pandey, Ekta Vishnoi, **Monika Sharma**, Sadhna Sharma. Mycobacterium tuberculosis Rv3083 (mymA) protein as a ligand for Toll like receptors (TLRs).

Immunocon 2013, 40th Annual Conference of Indian Immunology Society, UCMS, Delhi Univ., Nov 15-17, 2013.

- Iti, Panchali, Shalini, **Monika Sharma**, Sadhna Sharma. Cloning, Expression, and Immunological Evaluation of MymA Operon Proteins of Mycobacterium Tuberculosis at 5th Congress of the Federation of Immunological Societies of Asia Oceania FIMSA 2012, 12-16 March 2012 Ref: pp 99.
- **Monika Sharma**, Sadhna Sharma and Mridula Bose. H37Rv infected autologous macrophages from pulmonary TB patients induce T cell death in co-culture" at International Symposium on Tuberculosis Diagnostics: Innovating to Make an Impact. Dec 16-17, 2010. Pp 136. ICGEB, Delhi, India. ISBN: 93-80697-37-6.
- **Monika Sharma** and Mridula Bose. MDR strain of M. tuberculosis interferes with the host immune machinery to create a safe niche" at International Symposium on Emerging Trends in Tuberculosis Research. Dec 1-3, 2006. Page No.152 141.ICGEB, Delhi, India. ISBN: 10:0230-63004-9.
- **Monika Sharma**, Sadhna Sharma, Mridula Bose. Mycobacterium tuberculosis downregulates the host immunity by inducing T cell apoptosis: a possible mechanism for persistence of pathogen. Published in abstract book of Keystone Symposia on Tuberculosis: Integrating Host and Pathogen Biology, Whistler Resort, Canada. April2-7, 2005, Abstract no-3061, pp-113.
- **Monika Sharma**, Sadhna Sharma, Mridula Bose. T cell apoptosis: a possible mechanism of persistence of intracellular pathogens. International symposium on emerging trends in tuberculosis research. Nov 15-17, 2004. Pp 141.
- Sadhna Sharma, Sugata Roy, **Monika Sharma**, Mridula Bose. Mycobacterial components of M. tuberculosis H37Rv regulate induction of inducible nitric oxide synthase in coordination with production of tumor necrosis factor -α & Il-12. 32nd Annual Scientific Meeting Of Australian Society For Immunology, Brisbane, Australia, Dec 8-12, 2002.ref: pp 53.
- Sadhna Sharma, Sugata Roy, **Monika Sharma**, Mridula Bose. Induction of inducible nitric oxide synthase in coordination with production of tumor necrosis factor -α & IL-12 in response to stimulation of monocytes from active tuberculosis patients by mycobacterial components of M. tuberculosis H37Rv. Presented at 6th FIMSA Advanced Course And Conference, Ayutthya, Thailand, Oct 20-25, 2002, ref: pp 42.

UNDER GRADUATE RESEARCH PROJECTS SUPERVISED

- Facilitator and Mentor, DSKC Summer Workshop, "In silico analysis of stress proteins of DosR regulon of MTB: predicted role of uncharacterized Rv2028c in antibiotic resistance". Flavor of Research: Investigative Projects in Multidisciplinary context Organized at Miranda House, June- July, 2023
- Facilitator and Mentor, DSKC Summer Workshop, "In silico characterization of protein synthesis and cell wall synthesis genes of DosR regulon in MTB". Flavor of Research: Investigative Projects in Multidisciplinary context Organized at Miranda House, June- July, 2023

- Facilitator and Mentor, DSKC Summer Workshop, “In silico characterization of redox balance metabolism and energy genes of DosR regulon in MTB”. Flavor of Research: Investigative Projects in Multidisciplinary context Organized at Miranda House, June- July, 2023
- Facilitator and Mentor, DSKC Summer Workshop, “In silico characterization of nucleotide metabolism and repair genes of DosR regulon in MTB”. Flavor of Research: Investigative Projects in Multidisciplinary context Organized at Miranda House, June- July, 2023
- Facilitator and Mentor, DSKC Summer Workshop, “In silico characterization of host-pathogen interaction gene and protein Rv2004c of DosR regulon in MTB”. Flavor of Research: Investigative Projects in Multidisciplinary context Organized at Miranda House, June- July, 2023
- Facilitator and Mentor, DSKC Summer Workshop, “In-silico characterization of Membrane protein genes (Rv2625c, Rv1997, Rv1735c, Rv1733c) and proteins of DosR regulon of Mycobacterium tuberculosis H37Rv”. Flavor of Research: Investigative Projects in Multidisciplinary context Organized at Miranda House, June- July, 2023.
- Facilitator and Mentor, DSKC Summer Workshop, “In silico characterization of hypothetical gene, Rv2030c of DosR regulon of Mycobacterium tuberculosis H37Rv”. Flavor of Research: Investigative Projects in Multidisciplinary context Organized at Miranda House, June- July, 2023.
- Facilitator and Mentor, DSKC Summer Workshop, “In silico mining of late stage expressed PE/PE_PGRS family proteins of Mtb for Calcium bindings domains”. Flavor of Research: Investigative Projects in Multidisciplinary context Organized at Miranda House, June- July, 2022
- Facilitator and Mentor, DSKC Summer Workshop, “Insilico analysis of PE/PE_PGRS/PPE family proteins of Mtb for mitochondria targeting sequence.”. Flavor of Research: Investigative Projects in Multidisciplinary context Organized at Miranda House, June- July, 2022
- Facilitator and Mentor, DSKC Summer Workshop, “Predicting Intrinsically Disordered Proteins of PE/PPE family of Mycobacterium tuberculosis” Flavor of Research: Investigative Projects in Multidisciplinary context Organized at Miranda House, June- July, 2021
- Facilitator and Mentor, DSKC Summer Workshop, “Mining eukaryote like SH3 domains in PE/PPE Protein family of Mycobacterium tuberculosis” Flavor of Research: Investigative Projects in Multidisciplinary context Organized at Miranda House, June- July, 2021.
- Facilitator and Mentor, DSKC Summer Workshop, “Designing of Universal Subunit Influenza Vaccine using Reverse Vaccinomics Approach” ‘Flavor of Research: Investigative Projects in Multidisciplinary context Organized at Miranda House, June- July, 2021.
- Facilitator and Mentor, DSKC Summer Workshop, “Vaccine design using reverse Vaccinology approach” ‘Flavor of Research: Investigative Projects in Multidisciplinary context Organized at Miranda House, 30 June-30 July, 2020
- Facilitator and Mentor, DSKC Summer Workshop, “In- silico analysis, cloning and expression of Proline and Glutamic Acid rich Proteins of Mycobacterium tuberculosis” Flavor of Research: Investigative Projects in Multidisciplinary context Organized at Miranda House, 3 June-12 July, 2019
- Facilitator and mentor in the Experimental summer workshop, “Assessment of immunogenicity of *M.tb* genes by in-silico analysis, molecular cloning and PBMC

stimulation" for undergraduate science students, Flavour of Research, Investigative Projects in Multidisciplinary Contexts, D. S. K. Centre for Research and Innovation in Science Education, Miranda House, University of Delhi, Delhi, 2018. Ten students completed project.

- Facilitator and mentor in the Experimental summer workshop, "Epitopic analysis of *Mycobacterium tuberculosis* genes for vaccine development through immunoinformatics approach" for undergraduate science students, Flavour of Research, Investigative Projects in Multidisciplinary Contexts, D. S. K. Centre for Research and Innovation in Science Education, Miranda House, University of Delhi, Delhi, 2017. Five students completed project.
- Facilitator and mentor in the Experimental summer workshop, "Study the effect of Henna extract on Biofilm formation" for undergraduate science students, Flavour of Research, Investigative Projects in Multidisciplinary Contexts, D. S. K. Centre for Research and Innovation in Science Education, Miranda House, University of Delhi, Delhi, 2016. Students: Vidhi, Niharika, Nupur, Sakshi Sharma (B.Sc(H) Zoology II Year)
- Facilitator and mentor in the Experimental summer workshop, "Protein sequence analysis of DosR Regulon in different Mycobacterium tuberculosis strains" for undergraduate science students, Flavour of Research, Investigative Projects in Multidisciplinary Contexts, D. S. K. Centre for Research and Innovation in Science Education, Miranda House, University of Delhi, Delhi,2016.Students: Mansi Singh, Rakhi Sharma, Divya, Ekta Dagar, Sarika Bhati, Laxmi Mishra, Sonika Bhatnagar and Pragya (B.Sc III YEAR 2016,B.Sc II YEAR 2016,MSc I YEAR 2016)
- Facilitator and mentor in the Experimental summer workshop, "Bioinformatics study of potential vaccine candidates for tuberculosis" for undergraduate science students, Flavour of Research, Investigative Projects in Multidisciplinary Contexts, D. S. K. Centre for Research and Innovation in Science Education, Miranda House, University of Delhi, Delhi, 2015. Students: Harshita, Dashleen, Amandeepa, Deachen (B.Sc. II YEAR)
- Facilitator and mentor in the Experimental summer workshop, "Analysing Rvxxx of Mycobacterium tuberculosis as potential drug target via bioinformatics tools." for undergraduate science students, Flavour of Research, Investigative Projects in Multidisciplinary Contexts, D. S. K. Centre for Research and Innovation in Science Education, Miranda House, University of Delhi, Delhi,2014. Students: Vithika, Heena, Neha, Aarti, Shashank (B.Sc. II YEAR)
- Facilitator and mentor in the Experimental summer workshop, "Growth curve of E.coli under various physical conditions and formation of Biofilm" for undergraduate science students, Flavour of Research, Investigative Projects in Multidisciplinary Contexts, D. S. K. Centre for Research and Innovation in Science Education, Miranda House, University of Delhi, Delhi,2014. Students: Asna, Awani, Rajina, Pragya, Shweta (B.Sc. II YEAR).

POST GRADUATE RESEARCH PROJECTS SUPERVISED

- Supervised a faculty member under Ontario India Short Term Study Plan for teaching B.Sc. Life Science IV semester paper on Genetics and Evolutionary Biology in 2018.
- Supervised post graduation students for summer internship project "*Mycobacterium tuberculosis* latency associated proteins Rv2003c, Rv1736, Rv1737c and Rv2628 targeting

host mitochondria may have role in persistence of pathogen" 2016. Ambedkar Centre for Biomedical Research Institute, University of Delhi. Students: Pragya and Sonika (M.Sc. Biomedical Research)

- Supervised post graduation student for summer internship project "To study the expression of cell surface markers, TLR2 and TLR4 on THP 1 cell line using flowcytometry." 2012. Amity University. Student: Ekta Vishnoi (M.Sc. Biotechnology).
- Supervised post graduation students for summer internship project "To clone and express Mycobacterium tuberculosis genes Rvxxxx" 2012. RBS College, Agra, Student: Sulekha Singh (M.Sc. Biotechnology, IV th SEM). Charu Aggarwal (B.SC(H) Biomedical Sciences, Bhaskarachary College of Applied Sciences, University of Delhi.
- Supervised post graduation students for summer internship project "To perform Nitric Oxide estimation and to study cell surface antigens in animal cell culture using spectrophotometry and flowcytometry" 2011. Amity University. Students: Amisha Bhatnagar and Parul Gupta (M.Sc. Biotechnology).
- Supervised post graduation students for summer internship project "To perform Nitric Oxide estimation and to study cell surface antigens in animal cell culture using spectrophotometry and flowcytometry" 2011. Amity University. 2011: To study HSP gene of Mycobacterium tuberculosis. Students: Jaspreet Kaur, Renu Singh, Mehak Malhotra (M.Sc. Biotechnology).

EXTRAMURAL CONTRIBUTION: INVOLVEMENT IN VARIOUS COMMITTEES OF MIRANDA HOUSE

- Secretary Institutional Biosafety committee Miranda House. Constituted the committee and got registered at DBT, Indian Biosafety Knowledge Portal. Organize the IBSC meetings once in year for approval of the experimental protocols committed in various research projects involving work on bacteria. 2021-till date.
- Member Quiz Society of Miranda House. Organize Quizzes and related activities in college. 2022-2024
- Life Science Coordinator for Department of Zoology in academic year 2019-21.
- Member Extended admission committee for Life Sciences for the session 2019-21
- Teacher in charge, Department of Zoology, Miranda House in academic year 2018-19 and 2017-18.
- Staff advisor of Zoology society Synapse: Managing and guiding students for all society events organized in an academic year 2018-2019, 2016-18 and 2010-14.
- Worked as PRO for the year 2016-2014 during admissions.
- Member Extended admission committee for Department of Zoology for the session 2018-19, 2018-2017, 2011-12 and 2010-11.
- Member College Staff Council Committees: Research Initiative and International Collaboration, 2010-16

PARTICIPATION IN CURRICULUM DESIGN

- Member committee for design of syllabus for paper "Cell Biology" for NEP in 2022 for B.Sc. (H) Zoology.
- Member committee for design of syllabus for paper "Genetic counselling" for NEP in 2022 for DSE Life Sciences.
- Member committee for design of syllabus for paper "Medical Genetics" for NEP in 2022 for SEC.
- Coordinator for syllabus design for paper "Cell Biology" for LOCF in 2019 for B.Sc. (H) Zoology.
- Member committee for design of syllabus for paper "Cell and cellular processes" under LOCF in 2019 For Applied Life Sciences: Core Course Zoology –II.

WORKSHOPS/ CONFERENCES/ SYMPOSIUMS ORGANIZED

- Organized Capacity building training programme on research methodologies for working with model organisms. Held at Miranda House from April 15- 19, 2024.
- Member organizing committee of conference "Integrative Chemistry, Biology & Translational Medicine (ICBTM 3.0), March 8-10, 2024, Udaipur, Rajasthan, Bharat.
- Member organizing committee of conference "Golden Jubilee conference of IIS, IMMUNOCON-50" October 5-8, 2023 at All-India Institute of Medical Sciences, New Delhi.
- Organized International Conference cum CME Novel Insights into Pathogenesis of Tuberculosis for the development of Vaccines, Diagnostics and Therapeutics. Indian Immunology Society, DST-SERB, Immunology Foundation. Held at Miranda House from May 3-5, 2023.
- Organized a workshop for science faculty and research scholars. April 15-19: Proteins: structure, function and bioinformatics with special emphasis on research methodology and IPR. Held at Miranda House from August 23-23, 2023.
- Organized and resource person for Add on course "Animal cell culture and its applications" March- July 2022.
- Organized a oneday Symposium "Covid 19 disease and vaccines" on 29 April 2021 under the aegis of Indian Immunology Society on the occasion of International Immunology Day.
- Organized an undergraduate students workshop entitled "An insight into development of Zebra Fish"; Held at Miranda House from 11-12 February, 2020 under DBT Star College Scheme.
- Organized an undergraduate students workshop entitled "Zebra Fish: A Model Organism to study Embryonic Development" Held at Miranda House on 3rd March, 2020 under DBT Star College Scheme.
- Organized and resource person for Add on course "Animal cell culture and its applications" December 2019-20.
- Organized a students' workshop on "An Insight into Zebra fish development" under DBT Star College Scheme, Department of Zoology, Miranda House, 20 February, 2019.
- Organized and resource person for workshop on "Fundamentals and Advanced concepts of Flowcytometry" under DBT Star College Scheme, Department of Zoology, Miranda House, August 2-3, 2018.

- Organized and resource person of a seven days National Symposium on “Genome Editing Tools” under DSKC, Miranda House, January 15-22, 2018.
- Organized a students’ workshop on “An Insight into Zebra fish development” under DBT Star College Scheme, Department of Zoology, Miranda House, March 30-31, 2017.
- Organized and resource Persons for DBT Star College Scheme Sponsored Workshop on "Immunoinformatics for Rational Vaccine Design, Department of Zoology, Miranda House, 18-22 September, 2017.
- Organized a symposium for teachers teaching Undergraduate Courses: Symposium on “Art of Grant Writing” under DBT star college scheme at DSKC, Miranda House, from 5-6 January, 2017.
- Organized and resource person of an International workshop on “The Role of MHC Complex in Biology and Medicine” star college scheme at DSKC, Miranda House.15 March, 2016.
- Organized and resource person of Bridge Course on “Laboratory Instrumentation: Principle, Usage and Applications” organized by Department of Zoology, Miranda House. October, 2015.
- Organized and resource person of a state level, one day, workshop “Applications of Flowcytometry” for faculty teaching at undergraduate level and research scholars on March 20, 2015 under DBT Star College project.
- Organized a “National Symposium on Recent Advances in Immunology”, July 17 & 18, 2014 under the aegis of Indian Immunology Society CME Programme.
- Organized and resource person of ShortTerm certificate Add-on-Course: “Medical Biotechnology”, Miranda House, University of Delhi, 2011-2012, 2013-14.
- Organized a workshop, “Protein Modeling and Docking Studies for Rational Drug design: a Workshop for Science Students” organized under DBT Star College Project at DSKC, Miranda House, 12-13 March, 2014.
- Mentor for Inspire Internship Programme “Designing life: small experiments” organized by DSKC, Miranda House, 15-20 December, 2013.
- Organized a workshop, “Understanding Proteins: Structures & Functions: a workshop for science students” organized under DBT Star College Project at DSKC, Miranda House, 15-18 July, 2013.
- Organized and resource person of workshop, “Concepts of Immunology and its applications: a workshop for science students” organized under DBT Star College Project at DSKC, Miranda House, 6-11 July, 2012.
- Organized and resource person of a workshop for teachers “Computational Biology: a workshop for science teachers” under the DBT Star College Project at DSKC, Miranda House, 9-12 January, 2012.
- Organized and resource person of a workshop for students: “Gene Polymorphism and its applications” organised under the DBT Star College Project at D S Kothari Centre for Research and Innovation in Science Education, Miranda House, 4-8 July, 2011.

- Mentor for inspire internship programme organised by DSKC, Miranda House, 11-15 July 2011.
- Mentor in the workshop for senior secondary school teachers on building concepts in science with hands on activity, organised at 'DSKC, 25-27 May 2011.

EDUCATIONAL RESOURCES DEVELOPED

- Abstract book for seven days National Symposium on "Genome Editing Tools" under DSKC, miranda house, 15-22 January 2018.
- Resource material for manual of Bridge course on Laboratory Instrumentation: Principle, Usage and applications organized by Department of Zoology, Miranda House, August 2018, August 2017 and September 2016.
- Manual for Inspire Internship Programme "DNA and Enzymes: Tiny but Mighty Players" organised by DSKC, Miranda House.18-22 December, 2017.
- Manual for International workshop on The Role of MHC Complex in Biology and Medicine organised by DSKC, Miranda House.15 March, 2016
- Resource material for manual of Bridge Course on Laboratory Instrumentation: Principle, Usage and Applications, organized by Department of Zoology, Miranda House. October, 2015.
- Manual for Inspire Internship Programme "DNA and Enzymes: Tiny but Mighty Players" organised by DSKC, Miranda House.13-17 July, 2015.
- Abstract book for National Symposium: CME (Continued Medical Education) on "Recent Advances in Immunology" organised by DSKC, Miranda House, 17-18 July 2014.
- Manual prepared for: Inspire Internship Programme "Designing Life: Small Experiments" organised by DSKC, Miranda House.15-20 December, 2013.
- Manual prepared for: Workshop, "Understanding Proteins: Structures & Functions: A workshop for Science students" organized under DBT star college project at DSKC.15-18 July, 2013.
- Manual prepared for: Workshop, "Concepts of Immunology and its Applications: A Workshop for Science Students" organized under DBT star college project at DSKC. Miranda House.6-11 July, 2012.
- Manual prepared for: Workshop for Teachers "Computational Biology: A Workshop for Science Teachers" under DBT Star College Project at DSKC, Miranda House.9-12 July, 2012.
- Manual prepared for: Workshop for Students: Gene Polymorphism and its Applications organised under DBT Star College Project at DSKC, Miranda House.4-8 July, 2011

PROFESSIONAL DEVELOPMENT COURSES ATTENDED

- Faculty development program "Development of teacher's E-kit and Moocs in four quadrant format of E-content" conducted by Guru Angad Dev teaching learning center under PMMMNMTT, 12-9-20 to 20-9-2020

- Two weeks Faculty Development Programme on "Research Methodology" Teaching Learning Center Ramanujan College, University of Delhi under PMMMNMTT, 1-10-2020 to 15-10-2020.
- 24th Refresher course in Life sciences and Biotechnology conducted by UGC Academic Staff College, JNU. 19-08-19 to 30-08-19.
- Ist refresher course in Life Sciences & Biotechnology conducted by UGC Academic Staff College, JNU. 20-7-15 to 14-8-15.
- UGC-ASC sponsored 4-weeks Orientation Course (OR-68) organized by Centre for Professional Development in Higher Education (CPDHE), Institute of Life Long Learning (ILLL), University of Delhi held from November 12- December14, 20011 at CPDHE (ILLL), Delhi.

PARTICIPATION IN PROFESSIONAL DEVELOPMENT ACTIVITIES

Seminars, Conferences, Short term Training Courses, Talks, and Lectures attended

- Training workshop on Research Based Pedagogical Tools (RBPTs) for teachers of undergraduate science courses. Indian Institute of Science Education and Research (IISER) Mohali, 22- 1-17 to 25-1-17.
- Oral presentation at 18th Annual conference on Vaccine Research National Foundation of Infectious Diseases, USA Bethesda, MD, USA.13-4-15 to 15-4-15.
- 1st International Conference on "Emerging Trends of Nanotechnology in Drug Discovery" Sri Venkateswara College, University of Delhi and Department of Biochemistry, University of Delhi South Campus in Association with Centro De Quimica Da Madeira, Portugal. 26-5-14 to 27-5-14.
- IMMUNOCON 2013, 40th Annual Conference Indian Immunology Society, University of Delhi. 15-11-13 to 16-11-13.
- National Workshop on "Evolutionary Perspectives in Modern Biological Teaching and Research". Institute Of Life Long Learning (ILLL), University of Delhi. 9-5-11 to 10-5-11.
- Microscopy: Techniques and Applications: A Workshop for teachers, DBT Star College Project DS Kothari Centre, Miranda House, DSKC, Miranda House. 27-9-11to 28-9-11.
- International Symposium on Tuberculosis Diagnostics: Innovating to Make an Impact. International Centre for Genetic Engineering and Biotechnology (ICGEB), Delhi,16-12-10 to 17-12-10.
- Workshop for Teachers: Bioinformatics Unravelling Genes and Proteins DS Kothari Centre, Miranda House.10-5-10 to 15-5-10.
- ICT Workshop for Capacity Building of Delhi University Staff. Institute of Life Long Learning (ILLL), Miranda House.19-4-10 to 24-4-10.
- Collaborative Workshop for College Science Teachers: Active Learning with Computer-Based Experiments in Multidisciplinary Contexts.DS Kothari Centre, Miranda House. 19-4-09 to 21-4-09