
Dr. Noreen Sarwar

Institute of Microbiology, University of Veterinary and Animal Sciences (UVAS), Lahore, Pakistan

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Personal Information

Date of Birth: April 13, 1981

Place of Birth: Shahkargarh

Nationality: Pakistani

Gender: Female

Marital Status: Married

Academic Qualifications

PhD

Institution: University of Veterinary and Animal Sciences, Lahore, Punjab, Pakistan

Major: Microbiology

Graduation year: 2013

Dissertation: Biomass production of *Pasteurella multocida* by using biofermentor for preparation of montanoid based vaccine

M.Sc. (Hons)

Institution: University of Agriculture, Faisalabad, Punjab, Pakistan

Major: Veterinary Microbiology

Graduation year: 2007

Thesis: Immunohistochemical studies of Hydropericardium syndrome virus in broilers

DVM (Doctor of Veterinary Medicine)

Institution: University of Agriculture, Faisalabad, Punjab, Pakistan

Major: Veterinary Medicine

Graduation year: 2005

Honors / Awards:

1. HEC approved supervisor
2. Indigenous PhD scholarship from Higher Education Commission (HEC) of Pakistan (2008-2012).
3. Six-month scholarship from HEC under International Research Support Initiative Program (IRSIP) for research in Pennsylvania State University (PSU), USA (Sep 22, 2010 - March 20, 2011)
4. Interim Placement of Fresh PHDs Program (IPFP) by HEC (May 2014, - May 2015)

Employment Record:

04/2018- to present Assistant Professor, Institute of Microbiology, University of Veterinary and Animal Sciences (UVAS), Lahore, Pakistan (TTS)

11/2017 - 04/2018 Assistant Professor, Institute of Microbiology, University of Veterinary and Animal Sciences (UVAS), Lahore, Pakistan (BPS)

- 04/2014–11/2017 Assistant Professor, Department of Microbiology, University of Lahore, Lahore
- 11/2013-04/2014 Assistant Professor, Department of Biological Sciences, Lahore Garrison University, Lahore

Teaching /Research Experience:

Courses Taught

DVM

- General Veterinary Microbiology
- Veterinary Immunology

B.S Applied Microbiology

- Applied Immunology
- Medical Microbiology
- Biosafety and Biosecurity

Ph.D Microbiology

- Cellular and Molecular Immunology
- Molecular Biology of Viruses

M. Phil Microbiology

- Advanced Bacteriology
- Medical Microbiology
- Techniques in Molecular Biology
- Techniques in Microbiology
- Immunology
- Biotechnology and Vaccinology

Students Supervised:

M.Phil

1. **Kainat Fatima.** 2016-VA-403. Effect of Safmannan against pathogenic *E. coli* to prevent avian colibacillosis.
2. **Muhammad Amjad Iqbal.** 2020-VA-07. Beta propiolactone as a candidate for the inactivation of foot and mouth disease virus serotype O.
3. **Anam Ali.** 2014-VA-282. In-vitro antimicrobial activity of *Carica Papaya* extracts against pathogenic *E. coli* isolated from broilers
4. **Iqra Shaukat.** 2013-VA-193. Colistin resistance mediated by *mcr-1* and *mcr-2* in *Salmonella spp.* In broiler chicken, Lahore.
5. **Feza Sajid.** 2019-VA-43. Characterization of *Int1* and *Int2* genes in multidrug resistant *Salmonella spp.* from broilers.
6. **Gulraiz Fatima.** 2019-VA- 42. Characterization of *Int1* and *Int2* in multidrug resistant avian pathogenic *E. coli*.
7. **Samina Ramazan.** 2012-VA-256. To determine efficacy of commercially available vaccine against avian colibacillosis in broilers
8. **Muhammad Zulqarnain.** 2017-VA- 1351. Characterization of *MCR-1* and *MCR-2* genes in colistin resistance harboring *E. coli* in broilers
9. **Muhammad Waseem.** PMC02153007. Evaluation of bacterial contamination and molecular characterization of antibiotic susceptibility in *Staphylococcus aureus* from different OT's of a tertiary care hospital Lahore.
10. **Mumtaaz Hassan.** PMC 02133026. Molecular detection of *gyra* mutation in ciprofloxacin resistant *E. coli* among UTI cases in a tertiary care hospital Lahore
11. **Sana Khan.** PMC02143031. 2014-2016. Study of urinary tract pathogens and determination of their susceptibility to antibiotics in the residents of Lahore.

12. **Nasir Mahmood.** PMC02143001. 2014-2016. Evaluation of Vaccines against *P. multocida* by Complement fixation test.
13. **Hafsa Hussein Sheikh Mohammad.** PMC 02141002. 2014-2016. In vitro study of biofilm forming bacteria isolated from dental plaque
14. **Muhammad Javeed.** PMC02141006. 2014-2016. Microbiological evaluation of ethylene oxide for sterilization of medical devices.
15. **Bahaa Jalal Al Jaber.** PMC 02141005.2014-2016. Microbiological analysis of cucumber (*Cucumis sativus*) for isolation and identification of *Salmonella enterica*
16. **Mahreen Mahmood.** PMC 02133024. 2013-2015. Comparative antibiotic effect of different miswaks against pathogenic organisms.
17. **Madiha Zainab.** PMC02143007. 2014-2016. Characterization of outer membrane proteins and evaluation of immune response against *Pasteurella multocida*
18. **Komal Mubarak.** PMC02143004. 2014-2016. Seroprevalence of Hepatitis B and Hepatitis C during 2015-2016 in Lahore Pakistan
19. **Muhammad Atif.** PMC02143025. Effect of probiotics on antibody response along with Newcastle disease vaccine in broiler chicks.
20. **Muhammad Noman.** PMC 02143014. Effect of probiotics on antibody response along with infectious bursal disease vaccine in broilers.
21. **Ali Sheraz.** PMC 02143027. Effect of Probiotics on hemato-biochemical parameters along with ND & IBD vaccine in broilers.
22. **Kamran Ullah Khan.**PMC02153005. Prevalence of *H pylori* in Lahore and its periphery among low socio-economic workers at a tertiary care hospital.

MS

1. **Mehwish Dabeer.** MSMIB 021333011. Studies on bacterial profile and antibiotic residues in poultry meat

BS

1. **Sohail Ahmed.** BSMIB02131012. Molecular Characterization and Antibiotic Sensitivity of *Salmonella enterica* serovars isolated from cucumber (*Cucumis sativus*).
2. **Naem Sarwar.** BSM02113019. Prevalence of multidrug resistance bacteria in diabetic foot ulcers – a review
3. **Marzia Hussain.** Development of vaccines against dengue virus-a review.
4. **Muhammad Sufyan.** BSMIB02123005. Control against Campylobacter in poultry

Research Projects:

1. “Immune Response of Buffaloes to haemorrhagic septicemia vaccine” Funded by HEC, Islamabad”. (0.2875Million PKR-completed)

Publications:

1. Iqbal MA, **Sarwar N**, Raza S, Firyal S, Riaz R, Akram AM, Munir R, Khan AR, Sarwar M and Arshad MI. Comparative assessment of β -propiolactone, binary ethyleneimine and formaldehyde in inactivating Foot and Mouth Disease virus serotype O. Asian J. Agric. Biol. xxxx(x): 2023 349. DOI: <https://doi.org/10.35495/ajab.2023.349> (Impact factor :2.2)

2. Aziz, M.W.; Mukhtar, N.; Anjum, A.A.; Mushtaq, M.H.; Ashraf, M.A.; Nasir, A.; Shahid, M.F.; Nawaz, M.; Shabbir, M.Z.; Sarwar, N.; et al. 2023. Genomic Diversity and Evolution of SARS-CoV-2 Lineages in Pakistan. *Viruses* 2023, 15, 1450. <https://doi.org/10.3390/v15071450> **(Impact factor 4.7) (W category)**
3. Habib M, Ul-Rahman A, Shahid MA, Sarwar N, Bilal M, Imran MS, Munir M, Abbas S, Shabbir MZ. Comparative immunocompetence and interspecies transmission of avian orthoavulavirus-1 in feral birds originating from rural and urban settings. *Comparative Immunology, Microbiology and Infectious Diseases*. 2023 Sep 1;100:102036. **(Impact factor 2.0) (W category)**
4. Khan, Imran, Muhammad Nawaz, Aftab Ahmad Anjum, Rabia Tanvir, **Noreen Sarwar**, Muhammad Adnan Ashraf, Adnan Mehmood, and Muhammad Aqib. "Limosilactobacillus fermentum IKP 111 reduces pathogen load and improves immunity of broilers when challenged with Salmonella enteritidis." *Microbial Pathogenesis* 185 (2023): 106401. **(Impact factor 3.8) (W category)**
5. Ahmad, M., Siddique, A.B., Muzammil, S., Shafique, M., Nawaz, Z., Khurshid, M., Rasool, M.H., Jalees, M.M., Sarwar, N. and Asiam, B., 2022. Occurrence of Hypervirulent Klebsiella pneumoniae in Clinical Settings and Lytic Potential of Bacteriophages Against the Isolates. *Jundishapur Journal of Microbiology*, 15(1), pp.1-11. **(Impact factor :0.747)**
6. Ishaq K, Ahmad A, Rafique A, Aslam R, Ali S, Shahid MA, Sarwar N, Aslam MA, Aslam B, Arshad MI 2022. Occurrence and antimicrobial susceptibility of Proteus mirabilis from chicken carcass. *Pak Vet J*. <http://dx.doi.org/10.29261/pakvetj/2022.026>. **(Impact factor :1.318)**
7. Chaudhary, A., Hussain, Z., Akram, A.M., Alorabi, M., **Sarwar, N.**, Rehman, R.A., Khan, N.A., Khan, M.F., Minahal, Q., El Enshasy, H.A. and Ramli, S., 2021. Impact of Bacillus subtilis supplemented feed on growth and biochemical constituents in Labeo rohita fingerlings. *Journal of King Saud University-Science*, 33(8), p.101668. **(Impact Factor: 3.98) (W category)**
8. Ahmad, A., **Sarwar, N.**, Aslam, R., Ali, S., Aslam, B., Arshad, M.A., Hameed, H. and Arshad, M.I., 2021. Pattern of clinical drug resistance and occurrence of Gram negative bacterial neonatal sepsis at a tertiary care hospital. *Pakistan Journal of Pharmaceutical Sciences*, 34. **(Impact Factor: 0.684)**
9. Alvi RF, Aslam B, Rasool MH, Muzammil S, Siddique AB, Yasmeen N, Khurshid M, **Sarwar N**, Almatroudi A, Hussain R, Baloch Z. Transcriptional Response of Multidrug-Resistant Klebsiella pneumoniae Clinical Isolates to Ciprofloxacin Stress. *Canadian Journal of Infectious Diseases and Medical Microbiology*. 2021 Nov 28; 2021. **(Impact Factor:2.8)**
10. Zulqarnain M, **Sarwar N**, Anjum AA, Firyal S, Yaqub T and Rabbani M, xxxx. Molecular detection of colistin resistance gene (mcr-1) in E. coli isolated from cloacal swabs of broilers. *Pak Vet J*. DOI: 10.29261/paved/2020.xxx **(Impact Factor: 1.175)**
11. Waseem M, **Sarwar N**, Arif M, Jamil R, Sajjad A. PCR Based Identification of Staphylococcus. Aureus Isolated from Different Operation Theaters of Tertiary Care Hospital and Antibiotic Susceptibility by Disk Diffusion Method. *Method Med Forum* 2020; 31(9):120-124.

12. Ijaz MU, Tahir A, Samad A, Ashraf A, Ameen M, Imran M, Yousaf S and **Sarwar N**, 2020. Casticin alleviates testicular and spermatological damage induced by cisplatin in rats. Pak Vet J. DOI: 10.29261/pakvetj/2019.xxx (**Impact Factor: 1.175**)
13. **Sarwar N**, Ahmed R, Saadullah M, Khan KU, Kamran S, Baig FA, Mansoor MK, Aqib AI, Prince K, Saleem MZ, Manzoor AW, Sadia H. Prevalence of Helicobacter pylori infection and its associated diseases in low socio-economic workers in tertiary care hospital of Lahore, Pakistan. Biomedical Letters 2019; 5(1):1-6.
14. MUHAMMAD WASEEM, **NOREEN SARWAR**, AYESHA SAJJAD, RABIYA JAMIL, MUHAMMAD JAWAD ANWAR, 2019. Isolation of Gram Positive and Gram-Negative Bacteria from operation theaters of Tertiary Care Hospital and Molecular Detection of Staphylococcus Aureus Genes.13(4): 742-744.
15. **Sarwar N**, Mehmood A, Sheraz A and Noman M, 2019. Protective effect of probiotics in combination with vaccination on antibody response, biochemical and hematological indices in broilers. Pak Vet J, 39(3): 451-454 (**Impact Factor: 1.217**)
16. **Noreen Sarwar**, Khushi Muhammad, Masood Rabbani, Muhammad Younus Rana, Mobeen Sarwar, Muhammad Asad Ali, Jawad Nazir and Muhammad Kamran. Factors affecting potency of hemorrhagic septicemia vaccine. 2015. International Journal of Agriculture and Biology. 17(2): 387-390. (**Impact Factor: 1.04**)
17. **Noreen Sarwar**, Khushi Muhammad, Masood Rabbani, Muhammad Younus Rana, Mobeen Sarwar, Muhammad Asad Ali, Kashif Hanif and Muhammad Kamran.2013. Optimization of physico-chemical factors augmenting in vitro biomass production of *Pasteurella multocida*. The Journal of Animal & Plant Sciences, 23(4):1085-1088. (**Impact Factor: 0.549**)
18. Mobeen Sarwar, Khushi Muhammad, Masood Rabbani, Muhammad Younus, **Noreen Sarwar**, Muhammad Asad Ali and Abdul Ahad. 2013. Prevalence of Avian Influenza Viruses in Live Bird Markets of Lahore. The Journal of Animal & Plant Sciences, 23(2): 388-392. (**Impact Factor: 0.549**)

National and International Conferences Attended / Abstract Published:

- Oral Presentation in “**PCR based identification of *Staphylococcus aureus* isolated from different operation theaters of tertiary care hospital and antibiotic susceptibility by disk diffusion method**” in National Conference on Frontiers in Applied Biological Sciences-FABS, 13-14 December, 2023, LGU, Lahore
- Oral Presentation “**Molecular Detection of Colistin Resistance Gene (MCR-1) in *E. coli* Isolated from Cloacal Swabs of Broilers**” Current and Innovative Trends in Applied Bio-Sciences (CITABS), 21-22nd November, 2022, LGU, Lahore
- Oral Presentation “**Effect of Probiotics in Combination with Vaccination on Antibody Response, Biochemical and Hematological Indices in Broilers**” Online Conference on Recent Advances in Applied Biosciences (CRAAB 2021) 30-31st March, 2021, LGU, Lahore
- Oral Presentation “**Evaluation of antibody production against oil base Haemorrhagic septicemia vaccines by IHA, CFT AND ELISA**” First National Conference on Entrepreneurship Avenues in Biological Sciences (NCEB), 8-9 January, 2020, LGU, Lahore

- Oral Presentation “**Microbiological Profile and Qualitative Screening of Antimicrobial Drug Residues in Commercial Poultry Meat**” in International Poultry Expo, September 13-15,2019, Lahore Expo Center

Person/Organizer of the event

- "Immunophenotyping of poultry Immune cells for vaccine research using Flow Cytometry" Organized by IOM, UVAS, Lahore 6, June 2023
- Antimicrobial Susceptibility Testing (Using Disk Diffusion), Laboratory Quality Management System and AMR Data Analysis using WHONET” Organized by HSP, The Fleming Fund and DAI at Provincial Disease Diagnostic laboratory, Lahore 08-10 March 2023
- Resource person in “Microbiological Techniques” for UG students of BS Hons. Applied Microbiology and MLT Organized by IOM, UVAS, Lahore, 21 Sep to 06 Oct, 2022
- Resource person in “Veterinary diagnostics and Surveillance Techniques” Organized by IOM, UVAS, Lahore, 05- 07 Jan, 2022
- Resource Person **02 Days Training on Diagnosis of COVID-19 using RT-PCR**, Organized by IOM, UVAS, Lahore 13 – 14 July, 2021
- Resource Person **03 Days Training on Working in BSL-3 Laboratory for Emerging Pathogens**, Organized by IOM, UVAS, Lahore, 06 – 08 July, 2021
- Resource person in “Molecular detection of Lumpy Skin Disease virus (LSDV) in cattle and Guidelines for its control and prevention” Organized by IOM, UVAS, Lahore 31st March - 1st April, 2022
- Resource Person **03 Days Hands on Training on Advanced Biorisk Management for Officer of Diagnostic Lab L&DD Department** Organized by IOM, UVAS, Lahore 10 – 12 March,2021
- **Resource Person in Training workshop** “Laboratory biosafety, equipment maintenance and waste disposal” for laboratory assistant of L&DD at Institute of Microbiology, UVAS, Lahore 13-15October, 2020
- **Resource person** in training workshop “Basic Lab Techniques for students of BS Hons. Applied Microbiology” Organized by IOM, UVAS, 03-12 July 2018

Training courses Attended/Participated:

National

- Hand on Training “**Microbiological Techniques**” for students of B.S (Hons) Applied Microbiology and Medical lab Technician at Institute of Microbiology, UVAS, Lahore 20-09-2022 to 06-10-2022
- **52 weeks of Biosafety program in Pakistan** by American Society for Microbiology (ASM) and Safer behaviors
- **Virtual Training on Biorisk Management** at Anthrax Lab, IOM, UVAS, Lahore June 28-July 2, 2021
- "**Sharing Pakistani Experiences in Developing and Implementing Good Clinical Laboratory Practices for Human and Animal Health: A Virtual Workshop**" Jointly Convened by the Pakistan Academy of Sciences (PAS), NIH, and the U.S. National Academies of Sciences, Engineering, and Medicine (NASEM) 14,16,18 June, 2021

- **“Virtual Biological Risk Management Conference”** organized by PBSA in collaboration with Fogarty International Center (FIC), NIH-USA June 4-5, 2021
- **“Microbiological Evolution: Future Challenges”** 10th May, 2021
- **Antiviral Drug Design and Discovery** October 10, 2020
- International Webinar on **COVID-19 Biochemical Diagnosis and Community Response** 21 August, 2020
- **Estimation of global burden of disease (GBD)** 21-22 February, 2020
- First National Conference on Entrepreneurship Avenues in Biological Sciences (NCEB) 8-9 January, 2020
- **One Health Training Program** Workshop in Islamabad. 13-16 September 2019
- **Workplace Harmony challenges issues and policies** 28 March, 2019.
- **Constructive alignment of teaching learning context** 18-20 March, 2019
- **“Mapping of DVM curriculum for OIE compliance and integrated learning Interventions** 2-5 Sep, 2018
- International Training workshop on **“Molecular characterization and field surveillance of foot and mouth disease virus”**. 30th July -3rd August 2018
- International Training workshop on **“Evaluation of Foot and Mouth disease virus vaccine”** 23-29 April, 2018
- **Mapping of DVM curriculum for OIE compliance and integrated learning interventions** (07-11th May) Organized by IVPD & UVAS.
- **Evaluation of Foot and Mouth disease virus vaccine** (23-29 April 2018), Organized by UVAS.
- **International training course on Poultry viral diagnostics** (05-12 March 2018), Organized by Royal Veterinary College, University of London and Department of Microbiology, UVAS, Lahore.
- **Environmental Sampling conducted with collaboration of Higher Education Commission and British council** (1st – 2nd August 2012) at University of Veterinary and Animal sciences (UVAS), Lahore, Pakistan.
- **Serodiagnosis of Animal Microbial Diseases** (7 – 10 September, 2009) (CFT, Skin Sensitivity tests, AGPT, HA & HI, Fluorescent Antibody Technique, ELISA)
- **Fermentation for biomass production of *Pasteurella multocida*** (14-17 September 2009) at University of Veterinary and Animal sciences (UVAS), Lahore, Pakistan.
- **Primer designing for Microbial Identification using PCR** (10 – 11 November, 2009) at University of Veterinary and Animal sciences (UVAS), Lahore, Pakistan.
- **Molecular Techniques (PCR, RT-PCR) for diagnosis of Animal Microbial Diseases** (16 – 19 November 2009) at University of Veterinary and Animal sciences (UVAS), Lahore, Pakistan.
- **Indirect Sandwich Enzyme Linked Immunosorbent Assay** (1st – 3rd March 2010) at University of Veterinary and Animal sciences (UVAS), Lahore, Pakistan.
- **Preparation and valuation of Foot and Mouth disease and Hemorrhagic Septicemia vaccine** (2nd – 12th August, 2010) at University of Veterinary and Animal sciences (UVAS), Lahore, Pakistan

- **Application of Bioinformatics in understanding the nature of microbes** (1st – 2nd August, 2012) at University of Veterinary and Animal sciences (UVAS), Lahore, Pakistan.

In USA

- Biochemical characterization of gram-negative bacteria using **API Rapid identification kits**
- **CLSI-based determination of antimicrobial resistance** profiles of *Pasteurella multocida* using micro broth dilution
- **Isolation and characterization of *Pasteurella multocida* plasmids**
- **Detection of virulence genes of *Pasteurella multocida*** using real-time RT PCR
- **Genotyping of *Pasteurella multocida* using Pulsed Field Gel Electrophoresis**
- **Application of Gelcompar software** and tools to analyze phenotype and genotype data for constructing phenograms, cladograms and dendrograms

Indonesia

- **“Controlling disease outbreaks of especially dangerous pathogens by strengthening one health strategies in Pakistan”** in Bali 7-14, October 2019 (8 days) by The University of Tennessee Center for Agriculture and Food Security and Preparedness
- **“Advanced agricultural bio risk assessment training”** in Jakarta. May 7-11, 2018 by The University of Tennessee Center for Agriculture and Food Security and Preparedness

Memberships:

- Member Pakistan Veterinary Medical Council (PVMC)
- Member Pakistan Society for Microbiology (PSM)
- Member American Society of Microbiology (ASM)
- Member International Veterinary Vaccinology Network (IVVN)
- National Academy of Young Scientists (NAYS)
- Lifetime member Alumni Association of UVAS, Lahore Pakistan

Computing Skills:

Microsoft office (Word, Excel, PowerPoint), EndNote XI (reference manager), Primer Designing Software (Primer premier, MEGA 5.1, BioEdit, Clustal X).

Languages:

- English: Fluent in reading, writing and speaking (medium of education)
- Urdu: Fluent in reading, writing and speaking (National language)
- Punjabi: Fluent in reading, writing and speaking (Mother tongue)