

DR. MUHAMMAD NAWAZ **(Tenured Professor)**



TEMPORARY/POSTAL ADDRESS

Tenured Professor, Institute of
Microbiology, University of Veterinary and
Animal Sciences, Lahore
E-mail: muhammad.Nawaz@uvas.edu.pk
Cell: 0333-7773240

PERMANENT ADDRESS

Mian House, Street Umar Bin Khatab, Mumtaz
Colony, Narowal
Punjab, Pakistan
Nationality: Pakistan
Date of Birth: 14-10-1982

OBJECTIVE

To pursue further heights in University of Veterinary and Animal Sciences, Lahore through dedication, commitment and hard work and to strives for excellence in microbiological, and health sciences by continuous learning.

EDUCATION

PhD (Medical Microbiology)	2007-2011
Xi'an Jiaotong university, Xi'an, P. R. China	
M.Sc. Microbiology and Molecular Genetics	2003–2006
University of the Punjab, Lahore, Pakistan	
B.Sc. Zoology, Botany, Chemistry	2001–2003
University of the Punjab, Lahore, Pakistan	
F. Sc. (Pre–Medical)	1998–2001
F.C College Lahore, Pakistan	
Matriculation	1996–1998
Govt. High School Aurangabad, Narowal, Pakistan	

EXPERIENCE

27th August 2022-to date

Tenured Professor, Institute of Microbiology, UVAS, Lahore, Pakistan

28th August 2018- 27th August 2022

Tenured Associate Professor, Dept. of Microbiology, UVAS, Lahore, Pakistan

28th August 2012- 27th August 2018

Assistant Professor (TTS), Dept. of Microbiology, UVAS, Lahore, Pakistan

22nd August 2011-21 August 2012:

Assistant Professor (IPFP), Dept. of Microbiology, UVAS, Lahore, Pakistan

March 2010 – December 2010

Research fellow at Center of Disease Control and Prevention (CDC) Xian, China

March 2007 – August 2007

Visiting Lecturer, Department of Microbiology and Molecular Genetics. University of the Punjab, Lahore Pakistan

RESEARCH INTEREST

- Development of Probiotics and effective microbes targeting select benefits for poultry and human
- Isolation, characterization and evaluation of industrially important microbes
- Antimicrobial resistance, its molecular mechanisms and strategies for its modulation or reversal
- Industrial Microbiology, Probiotics and antimicrobials

COURSES TAUGHT:

Undergraduate Level

Bacterial Cell Physiology, Antimicrobial Resistance and Probiotics, Microbial Genetics, Soil Microbiology, Environmental Microbiology, Food and Dairy Microbiology, Industrial Microbiology, Pharmaceutical Microbiology, Medical Microbiology

Postgraduate Level

Microbial Physiology, Microbial Genetics, Food Microbiology, Antimicrobial Resistance, Environmental Microbiology

PUBLICATIONS:

1. A. Donia, **M. Nawaz**, M. F. Shahid, R. Shahid, A. Javed, T. Yaqub, H. Bokhari. 2024. SEROPREVALENCE OF IGG ANTIBODIES AGAINST SARS-COV-2 N PROTEIN AMONG VACCINATED AND UNVACCINATED SUBJECTS IN LAHORE, PAKISTAN. Acta Medica Bulgarica 51.
2. Ashraf M, **Nawaz M**, Asif A, Ali M, Mehmood A, Aziz M, Shabbir M, Mukhtar N, Shabbir M, Raza S. 2023. Temporal study of wastewater surveillance during September 2020 to March 2021:

-
- An estimation of COVID-19 patients in Lahore-Pakistan. *Environmental Science and Pollution Research*.
3. Aziz MW, Mukhtar N, Anjum AA, Mushtaq MH, Ashraf MA, Nasir A, Shahid MF, **Nawaz M**, Shabbir MZ, Sarwar N. 2023a. Genomic Diversity and Evolution of SARS-CoV-2 Lineages in Pakistan. *Viruses* 15:1450.
 4. Aziz MW, Mukhtar N, Anjum AA, Mushtaq MH, Shahid MF, Ali M, Shabbir MAB, Ali MA, **Nawaz M**, Yaqub T. 2023b. Molecular Characterization and Selection of Indigenous SARS-CoV-2 Delta Variant for the Development of the First Inactivated SARS-CoV-2 Vaccine of Pakistan. *Vaccines* 11:607.
 5. Beig M, Ali M, Javed H, Yaqub T, Mehmood AK, **Nawaz M**, Raza S, Ashraf M, Shabbir M, Mukhtar N. 2023. Molecular surveillance and epidemiology of variants of concern of SARS-CoV-2 during the fifth wave of COVID-19 in Punjab province, Pakistan.
 6. Beig MM, Ali MA, Javed H, Yaqub T, Mehmood AK, **Nawaz M**, Raza S, Ashraf MA, Shabbir MAB, Mukhtar N. 2024. Geospatial Dynamics of SARS-CoV-2 Variants during the Fifth Wave of COVID-19 in Punjab, Pakistan. *Advancement in Life Sciences* 11:493-499.
 7. Donia A, Furqan Shahid M, Hassan S-u, Shahid R, Ahmad A, Javed A, **Nawaz M**, Yaqub T, Bokhari H. 2022. Integration of RT-LAMP and Microfluidic Technology for Detection of SARS-CoV-2 in Wastewater as an Advanced Point-of-care Platform. *Food and Environmental Virology* 14:364-373.
 8. Ijaz S, Ansari F, **Nawaz M**, Anjum AA, Rasool K. 2023. Genetic Characterization of Carbapenem Resistant *Acinetobacter baumannii* in Tertiary care settings of Lahore, Pakistan. *Advancements in Life Sciences* 10.
 9. Ilyas I, Ali M, Anjum A, **Nawaz M**, Firyal S. 2024. Antibiotic resistance modulation of *Clostridium perfringens* type D using indigenous plants extracts. *Malaysian Journal of Microbiology* 20:58-66.
 10. Khan I, **Nawaz M**, Anjum AA, Ahmed M-u-D, Tanvir R, Sarwar N, Ashraf MA, Mehmood A, Aqib M. 2023. *Limosilactobacillus fermentum* IKP 111 reduces pathogen load and improves immunity of broilers when challenged with *Salmonella enteritidis*. *Microbial Pathogenesis* 185.
 11. M. I. Najeed MA, A. A. Anjum, A. Maqbool, M. A. Ali, M. **Nawaz**, T. Ali, Manzoor R. 2022. Biofuel production potential of indigenous isolates of *Scenedesmus* sp. from lake water in Pakistan. *Malaysian Journal of Microbiology*. 18:380-388.
 12. Malik F, **Nawaz M**, Anjum AA, Firyal S, Shahid MA, Irfan S, Ahmed F, Bhatti AA. 2022. Molecular characterization of antibiotic resistance in poultry gut origin Enterococci and horizontal gene transfer of antibiotic resistance to *Staphylococcus aureus*. *Pakistan Veterinary Journal* 42:383-389.
 13. Mehmood A, **Nawaz M**, Rabbani M, Mushtaq M. 2023a. Probiotic effect of *Limosilactobacillus fermentum* on growth performance and competitive exclusion of *Salmonella gallinarum* in poultry. *Pak Vet J*. <http://dx.doi.org/10.29261/pak>.
 14. Mehmood A, **Nawaz M**, Rabbani M, Mushtaq MH. 2023b. In Vitro Characterization of Probiotic Potential of *Limosilactobacillus fermentum* against *Salmonella Gallinarum* Causing Fowl Typhoid. *Animals* 13:1284.
 15. ---. 2024. Whole Genome Sequence and In Silico Analysis of Probiotic Potential of *Limosilactobacillus fermentum* PC-10 and PC-76 Isolated from Poultry Gut. *Pakistan Journal of Zoology*.
 16. Muneer S, Mushtaq MH, Chaudhry M, Khan A, Iqbal SU, **Nawaz M**, Awan F, Ahmed N. 2024. IMMUNOGLOBULIN-G SEROPREVALENCE AGAINST SARS-COV-2 AND ASSOCIATED RISK FACTORS IN LAHORE, PAKISTAN; A POPULATION-BASED SURVEY. *Journal of Population Therapeutics and Clinical Pharmacology* 31:2399-2408.
 17. Murtaza N, **Nawaz M**, Yaqub T, Mehmood AK. 2024. Impact of *Limosilactobacillus fermentum* probiotic treatment on gut microbiota composition in sahiwal calves with rotavirus diarrhea: A 16S metagenomic analysis study. *BMC Microbiology* 24:114.
 18. Mustafa A, **Nawaz M**, Rabbani M, Tayyab M, Khan M. 2022. Characterization and evaluation of

-
- anti-Salmonella enteritidis activity of indigenous probiotic lactobacilli in mice. *Open Life Sciences* 17:978-990.
19. Najeeb M, Ahmad M-D, Anjum A, Maqbool A, Ali M, **Nawaz** M, Ali T, Manzoor R. 2022. Distribution, screening and biochemical characterization of indigenous microalgae for bio-mass and bio-energy production potential from three districts of Pakistan. *Brazilian Journal of Biology* 84:e261698.
 20. **Nawaz** M, Ashraf MA, Ali MA, Shabbir MZ, Shabbir MAB, Altaf I, Raza S, Rafique S, Hassan S, Sardar N. 2022. Renessans Helps in Early Clearance of SARS-CoV-2: In-Vivo Activity of the Iodine Complex in Rhesus macaque. *Life* 12:1424.
 21. NAZ G, ANJUM AA, ALI T, **NAWAZ** M, IQBAL S, ABBAS M, MANZOOR R. 2023a. Molecular Characterization of Ochratoxin a Producing Indigenous Aspergillus Strains from Poultry Feed in Pakistan. *Sains Malaysiana* 52:821-835.
 22. Naz G, Anjum AA, Ali T, **Nawaz** M, Iqbal S, Manzoor R. 2023b. ACTIVITY OF PLANT ESSENTIAL OILS AGAINST OCHRATOXIN A PRODUCING ASPERGILLUS OCHRACEUS. *Journal of Animal and Plant Sciences* 33.
 23. Naz G, Anjum AA, **Nawaz** M, Iqbal S, Azeem S, Ali T, Manzoor R. 2023c. Evaluation of Cinnamomum verum Essential Oils against Ochratoxin A-producing Aspergillus parasiticus in Stored Wheat, Maize and Rice. *Polish Journal of Environmental Studies*.
 24. Rasool N, Omer MO, Javeed A, **Nawaz** M, Imran M, Hussain M, Mushtaq Z, AL Jbawi E. 2023a. Pharmacological effect of Argyrolobium roseum (Camb.) Jaub & Spach extracts against lead-induced toxicity in rats. *Food Science & Nutrition*.
 25. Rasool N, Omer MO, Javeed A, **Nawaz** M, Rasheed MA, Imran M, Hussain M, Dawood AF, Mushtaq Z, Jbawi EA. 2023b. Phytochemical properties and in-vitro cytotoxicity, genotoxicity and mutagenicity assessment of ethanolic and aqueous extracts of Argyrolobium roseum (Camb.). *International Journal of Food Properties* 26:1457-1469.
 26. Salman MM, **Nawaz** M, Yaqub T, Mushtaq H. 2023a. Investigation of milk microbiota of healthy and mastitic Sahiwal cattle. *BMC Microbiology* 23.
 27. Salman MM, **Nawaz** M, Yaqub T, Mushtaq MH. 2023b. Exploring the Milk Microbiota of Healthy and Mastitic Nili Ravi Buffalo Using 16S rRNA Gene Base Metagenomic Analysis. *Animals* 13:2298.
 28. ---. 2024. Milk microbiota of Holstein Friesian cattle reared in Lahore: association with mastitis. *Saudi Journal of Biological Sciences* 31:103984.
 29. Sardar N, Yaqub T, Anjum AA, Javed M, Ayub S, Mukhtar N, Aslam HB, Wolfe AJ, Schabacker DS, Forrester S. 2023. ENDEMIC SEROPREVALENCE AND FARMER CONTROL MEASURES OF ANTHRAX AMONG RUMINATE ANIMALS IN PAKISTAN. *Pakistan Journal of Plant Sciences* 33.
 30. Tariq M, Anjum A, Sheikh A, Awan A, Sattar M, Ali T, **Nawaz** M. 2022. PHYSICAL AND CHEMICAL FACTORS AFFECTING BIOMASS AND ALPHA TOXIN PRODUCTION OF CLOSTRIDIUM PERFRINGENS TOXINOTYPE A. *JAPS: Journal of Animal & Plant Sciences* 32.
 31. Yaqub, T., **Nawaz**, M., Shabbir, M.Z., Ali, M.A., Altaf, I., Raza, S., Shabbir, M.A.B., Ashraf, M.A., Aziz, S.Z., Cheema, S.Q. and Shah, M.B., 2021. A longitudinal survey for genome-based identification of sars-cov-2 in sewage water in selected lockdown areas of lahore city, pakistan; a potential approach for future smart lockdown strategy. *Biomedical Environmental Sciences*, 34(9), p.729-733. **(IF: 3.118)**
 32. Donia, A., Shahid, R., **Nawaz**, M., Yaqub, T. and Bokhari, H., 2021. Can we develop oncolytic SARS-CoV-2 to specifically target cancer cells? *Therapeutic Advances in Medical Oncology*, 13, p.17588359211061988. **(IF: 8.168)**
 33. Saeed, S., **Nawaz**, S., Nisar, A., Mehmood, T., Tayyab, M., **Nawaz**, M., Firyal, S., Bilal, M., Mohyuddin, A. and Ullah, A., 2021. Effective fabrication of zinc-oxide (ZnO) nanoparticles using Achyranthes aspera leaf extract and their potent biological activities against the

-
- bacterial poultry pathogens. *Materials Research Express*, 8(3), p.035004. (IF: 1.62)
34. Naseer, B., Iqbal, S., Wahid, N., Jamshaid Qazi, H., Nadeem, M. and **Nawaz, M.**, 2021. Evaluation of antioxidant and antimicrobial potential of rutin in combination with butylated hydroxytoluene in cheddar cheese. *Journal of Food Processing and Preservation*, 45(1), p.e15046. (IF: 2.190)
35. Raza, S., Mukhtar, N., **Nawaz, M.**, Ali, M.A., Shabbir, M.A.B., Ashraf, M.A., Ali, Z., Saleem, M.R., Latif, R. and Yaqub, T., 2021. A Cross-Sectional Survey of Knowledge, Attitude, and Practices of University Students in Pakistan Regarding COVID-19. *Frontiers in public health*, 9. (IF: 3.709).
36. **Nawaz, M.**, Donia, A., Mustafa, A., Ullah, N., Mukhtar, N., Yaqub, T. and Bokhari, H., 2021. Can Probiotics Play an Important Role Against COVID-19?. *Biomedical Journal of Scientific & Technical Research*, 40(1), 31841-31844
37. Javed, F., Ali, Z., Iqbal, S., Ahmed, N., Farooq, Z., Masood, F. and **Nawaz, M.**, 2021. Production of synbiotic product containing galacto-oligosaccharides and saccharomyces boulardii and evaluation of its in-vitro bifidogenic effect. *Journal of Microbiology, Biotechnology and Food Sciences*, 2021, pp.197-200.
38. Ullah, A., Anjum, A.A., Rabbani, **M.**, **Nawaz, M.**, Ashraf, M., Ijaz, M., Ali, A., Rashid, A., Najeeb, I. and Pervez, A., 2021. Phytochemical composition and In-vitro activity of ethanolic extract of Eucalyptus globulus leaves against multidrug resistant poultry pathogens. *Cellular and Molecular Biology*, 67(1), pp.159-164. (IF: 1.77)
39. Ullah, A., Anjum, A.A., Rabbani, M., Ijaz, M., **Nawaz, M.**, Ashraf, M., Ali, A., Rashid, A., Najeeb, I. and Hussain, A., 2021. Activity of ethanolic extract of Eucalyptus globulus leaves against multi drug resistant poultry pathogens in broiler chicks. *Cellular and Molecular Biology*, 67(1), pp.153-158. (IF: 1.77)
40. Yasmin, S., **Nawaz, M.**, Anjum, A.A., Ashraf, K., Ullah, N., Mustafa, A., Ali, M.A. and Mehmood, A., 2020. Antibiotic susceptibility pattern of Salmonellae isolated from poultry from different Districts of Punjab, Pakistan. *Pak. Vet. J*, 40, pp.98-102. (IF: 1.175)
41. Yasmin, S., **Nawaz, M.**, Anjum, A.A., Ashraf, K., Basra, M.A.R., Mehmood, A., Khan, I. and Malik, F., 2020. Phytochemical analysis and In Vitro activity of essential oils of selected plants against Salmonella enteritidis and Salmonella gallinarum of poultry origin. *Pak. Vet. J*, 40(02), pp.139-144. (IF: 1.175)
42. Khan, M., Anjum, A.A., **Nawaz, M.**, Awan, A.R. and Ali, M.A., 2020. Effect of Lactobacillus gallinarum PL 53 Supplementation on Xylose Absorption and Intestinal Morphology in Broilers Challenged with Campylobacter jejuni. *Pakistan Veterinary Journal*, 40(2). (IF: 1.175)
43. Khan, M., Anjum, A.A., **Nawaz, M.** and Awan, A.R., 2020. In vitro characterization of probiotic properties and anti-campylobacter activity of Lactobacillus spp. isolated from poultry, fermented foods and human faeces. *J. Anim. Plant Sci.*, 30, pp.336-344. (IF: 0.481)
44. Khan, I., **Nawaz, M.**, Anjum, A.A., Ahmad, M.U.D., Mehmood, A., Rabbani, M., Mustafa, A. and Ali, M.A., 2020. Effect of Indigenous Probiotics on Gut Morphology and Intestinal Absorption Capacity in Broiler Chicken Challenged with Salmonella enteritidis. *Pakistan Journal of Zoology*, 52(5), p.1825. (IF: 0.75)
45. **Nawaz, M.**, Ali, M.A., Ashraf, M.A., Shabbir, M.Z., Shabbir, M.A.B., Altaf, I., Raza, S., Rafique, S., Hassan, S., Sardar, N. and Mehmood, A., 2020. An assessment of efficacy of Iodine complex (Renessans) against SARS-CoV-2 in non-human primates (Rhesus macaque). *bioRxiv*. doi: <https://doi.org/10.1101/2020.11.17.377432>Batool,
46. S.A., Ahsan, F., **Nawaz, M.**, Anjum, A.A., Khan, A.U., Ullah, N., Ali, M.A. and Murtaza, N., 2020. STUDY OF IN-VITRO PROBIOTIC PROPERTIES AND ANTIBIOTIC RESISTANCE IN LACTOBACILLI ISOLATED FROM COMMERCIAL PROBIOTIC PRODUCTS IN PAKISTAN. *Pakistan*

47. Tayyab, M., Ashraf, K., Lateef, M., Anjum, A.A., Ali, M.A., **Nawaz, M.**, Nazir, M.M., Naz, S. and Ahmad, N., 2020. EFFICACY OF ANTI-BABESIA DRUGS IN RELATION TO HEMATOLOGICAL PARAMETERS IN DOGS. *JAPS, Journal of Animal and Plant Sciences*, 30(5), pp.1341-1346. (IF: **0.481**)
48. Altaf, I., Nadeem, M.F., Hussain, N., **Nawaz, M.**, Raza, S., Ashraf, M.A., Ali, M.A., Hassan, S., Aziz, M.W., Matti, N. and Ashraf, M., 2021. An in vitro antiviral activity of iodine complexes against SARS-CoV-2. *Archives of Microbiology*, 203 (7), pp.4743-4749. (IF: **2.552**)
49. Azeem, N., **Nawaz, M.**, Anjum, A.A., Saeed, S., Sana, S., Mustafa, A. and Yousuf, M.R., 2019. Activity and anti-aflatoxigenic effect of indigenously characterized probiotics Lactobacilli against *Aspergillus flavus*—A common poultry feed contaminant. *Animals*, 9(4), p.166. (IF: **1.832**)
50. Khan, I., **Nawaz, M.**, Anjum, A.A. and Ahmad, M.U.D., 2019. Isolation and in vitro Characterization of Anti-Salmonella Enteritidis Probiotic Potential of Indigenous Lactobacilli from Poultry. *Pakistan Veterinary Journal*, 39(4). (IF: **1.36**)
51. Khan, M., Anjum, A.A., **Nawaz, M.**, Awan, A.R. and Ali, M.A., 2019. Effect of Newly Characterized Probiotic Lactobacilli on Weight Gain, Immunomodulation and Gut Microbiota of *Campylobacter jejuni* Challenged Broiler Chicken. *Pakistan Veterinary Journal*, 39(4). (IF: **1.36**)
52. Firyal, S., Tanveer, S., Awan, A.R., Tayyab, M., Wasim, M., **Nawaz, M.**, Sattar, H., **Nawaz, S.**, Saeed, S. and Ali, M.M., 2019. Association of bovine tumor necrosis factor alpha gene polymorphism with mastitis in Nili Ravi buffaloes. *Pak. Vet. J*, 39, pp.128-131. (IF: **1.36**)
53. Ahmad, A., Anjum, A.A., Rabbani, M., Ashraf, K., Awais, M.M., **Nawaz, M.**, Ahmad, N., Asif, A. and Sana, S., 2019. Effect of fermented rice bran on growth performance and bioavailability of phosphorus in broiler chickens. *Indian Journal of Animal Research*, 53(3), pp.361-365. (IF: **0.437**)
54. Tayyub, M., Ashraf, K., Lateef, M., Anjum, A.A., Ali, M.A., Ahmad, N., **Nawaz, M.** and Nazir, M.M., 2019. Genetic diversity of canine Babesia species prevalent in pet dogs of Punjab, Pakistan. *Animals*, 9(7), p.439. (IF: **1.832**)
55. Sultana, T., Arooj, F., **Nawaz, M.**, Alam, S., Iqbal, M.N., Ashraf, A. and Kashif, S., 2019. Phytoremediation Efficiency of Sunflower (*Helianthus annuus*) and Bryophyllum (*Bryophyllum pinnatum*) in Removing Heavy Metals from Polluted Soil. *International Journal of Alternative Fuels and Energy*, 3(2), pp.31-35.
56. Siddiqui, S., Samra, M.M., **Nawaz, M.**, Shahid, M., Ramzan, A., Athar, M.M. and Basra, M.A.R., 2019. Modulative effect of a new hydrazide derivative on wheat-induced pulmonary inflammation in rats. *Experimental Physiology*, 104(6), pp.896-919. (IF: **2.624**)
57. Saeed, A., Ahsan, F., **Nawaz, M.**, Iqbal, K., Rehman, K.U. and Ijaz, T., 2019. Incidence of vancomycin resistant phenotype of the methicillin resistant *Staphylococcus aureus* isolated from a tertiary care hospital in Lahore. *Antibiotics*, 9(1), p.3. (IF: **2.921**)
58. Saleem, N., **Nawaz, M.**, Ghafoor, A., Javeed, A., Mustafa, A., Yousuf, M.R. and Khan, I., 2018. Phenotypic and Molecular Analysis of Antibiotic Resistance in Lactobacilli of Poultry Origin from Lahore, Pakistan. *Pakistan Veterinary Journal*, 38 (4). (IF: **1.37**)
59. Mallhi, I.Y., Sohaib, M., Khan, A.U. and **Nawaz, M.**, 2019. Evaluating food safety knowledge, practices, and microbial profile of meat in abattoirs and butchery shops in Lahore, Pakistan. *Journal of food safety*, 39(2), p.e12612. (IF: **1.665**)
60. Manzoor, M., Farooq, Z., Iqbal, S., Mukhtar, H. and **Nawaz, M.**, 2018. Quantification of aflatoxins in maize samples collected from various parts of the Punjab, Pakistan. *JAPS: Journal of Animal & Plant Sciences*, 28(6). (IF: **0.27**)

-
61. Samreen, F.G.; Muzaffar, R.; **Nawaz, M.**; Gul, S.; Basra, M.A.R. Synthesis, Characterization and Anti-Microbial Activity of *Citrus limon* Mediated Nanoparticles. *Preprints* **2018**, 2018110417 (doi: 10.20944/preprints201811.0417.v1).
 62. **Nawaz, F.**, Tanvir, R., **Nawaz, M.**, Javeed, A. and Sajid, I., 2018, October. The effects of polar and non polar compounds from endophytic actinomycetes in *Ocimum tenuiflorum* (Tulsi) and *Azadirachta indica* (Neem) on veterinary and human pathogens. In *MDPI AG in 4th international electronic conference on medicinal chemistry session (ECMC-4)*. <https://doi.org/10.3390/ecmc-4-05567>.
 63. Firyal, S., Tanveer, S., Awan, A.R., Tayyab, M., Wasim, M., **Nawaz, M.**, Sattar, H., **Nawaz, S.**, Saeed, S. and Ali, M.M., 2018. Association of Bovine Tumor Necrosis Factor Alpha Gene Polymorphism with Mastitis in Nili Ravi Buffaloes. *Pak Vet J.* (IF: 1.21)
 64. Anjum, A.A., Tariq, N., **Nawaz, M.**, Nasir, M., Hameed, A., Sana, S., Sajid, M.A., Ahmad, S., Towakal, F. and Ali, M.A., 2018. Occurrence Of Bacterial Contaminants In Poultry Meals And Their Antibiotic Resistance Pattern. *Pakistan Journal of Science*, 70(2).
 65. Arif A, **Nawaz M**, Rabbani M, Iqbal S, Mustafa A, Yousuf MR and Muhammad K, 2018. Screening, characterization and physicochemical optimization of phosphorus solubilization activity of potential probiotic lactobacillus spp. *Pak Vet J.* <http://dx.doi.org/10.29261/pakvetj/2018.061> (IF: 1.21)
 66. Raza S, Alvisi G, Shahin F, Husain U, Rabbani M, Yaqub T, Anjum AA, Sheikh AA, **Nawaz M** and Ali MA. Role of Rab GTPases in HSV-1 infection: Molecular understanding of viral maturation and egress. *Microb Pathog.* 2018; 118:146-153. (IF: 2.009)
 67. Madeeha Tariq, **Muhammad Nawaz**, Aftab Ahmad Anjum, Saba Sana, Mian Abdul Hafeez, Jawad Nazir, Wasim Shahzad and Muhammad Imran Najeeb. 2017. Production and characterization of phytase from indigenous *Aspergillus niger* isolates. *Pak. J. Agri. Sci.*, Vol. 54(4), 799-806; 2017 (IF: 0.690).
 68. Ali Ahmed, A.A Anjum, M. Rabbani, K. Ashraf, **M. Nawaz**, S. Sana, A. Asif. 2017. Diversity of Phytase producing non-toxigenic fungi isolated from soil. *J. Anim. Plant Sci.* (Accepted, Available online). (IF: 0.38)
 69. Ali Ahmed, A. A Anjum, M. Rabbani, K. Ashraf, M. M. Awais, **M. Nawaz**, N. Ahmed, A. Asif, S. Sana. 2017. Effect of fermented rice bran on growth performance and bioavailability of phosphorous in broiler chickens. *Indian Journal of Ani. Reseach.* DOI: 10.18805/ijar.v0i0F.8002. (IF: 0.185)
 70. Asifa Rasool, A. A. Anjum, M. Rabbani, M. Lateef, F. Akhtar, H. Afroz, J. Muhammad and **M. Nawaz**. 2017. Molecular characterization and phylogenetic analysis of *Mycoplasma synoviae* isolated from chicken. *J. Anim. Plant Sci.* (Accepted, Available online). (IF: 0.38)
 71. Asifa Rasool, A. A. Anjum, M. Rabbani, M. Lateef, **M. Nawaz**, F. Akhtar, A. Kanwal, S. Sattar. 2017. Preparation of *Mycoplasma synoviae* antigens and evaluation by rapid slide agglutination and enzyme linked immunosorbent assay. *J. Anim. Plant Sci.* 27(3): 841-847. (IF: 0.38)
 72. Amir Rasool, Muti-ur-Rehman Khan, Muhammad Asad Ali, Aftab Ahmad Anjum, Ishtiaq Ahmed, Asim Aslam, Ghulam Mustafa, Saima Masood, Muhammad Amjad Ali, **Muhammad Nawaz**. 2017. Anti-avian influenza virus H9N2 activity of aqueous extracts of *Zingiber officinalis* (Ginger) and *Allium sativum* (Garlic) in chick embryos. *Pak. J. Pharm. Sci.*, 30 (4): 341-344. (IF: 0.682).

-
73. S. Sana, A. A. Anjum, **M. Nawaz**, M.D. Ahmad and M. Rabbani (2017). Diversity of soil borne starch hydrolyzing fungi of livestock farms. *J. Anim. Plant Sci.* 27(2): 407-414. **(IF: 0.38)**.
74. Muhammad Asad Ali, Khushi Muhammad, Aftab Ahmad Anjum, Mansur-ud-Din Ahmad, Masood Rabbani, Muhammad Zubair Shabbir, Arfan Ahmad, **Muhammad Nawaz**, Muhammad Tasleem Ghori, Javed Muhammad, Haroon Rashid Chaudhry, Tariq Jamie, Muhammad Haisem, Tasmia Awan, Rais Ahmad and Bhushan M Jayarao. 2017. Association of soil chemistry and other factors with spatially distributed *Burkholderia mallei* DNA in Punjab province, Pakistan. IEEE Access. Proceedings of 2017 14th International Bhurban Conference on Applied Sciences & Technology (IBCAST) Islamabad, Pakistan, 10th -14th January, 2017. Pp: 220 – 236. **(IF: 1.249)**.
75. Ghulam Mustafa, S Iqbal, F. Rizwan, M. Y. Zahoor and **M. Nawaz**. 2016. Preparation and evaluation of glycemic response of inulin fortified ice cream in healthy individuals. *Pak. J. Food Sci.* 26(1): 29-37.
76. Habib, A.A Anjum, M. Rabbani, MUD Ahmad, M. A Ali, **M. Nawaz**, M. Kamran and H. M Khan. 2016. Occurrence of Antimicrobial Resistant Bacteria in dogs suffering from enteritis. *The JAPS.* 26 (1): 13-16. **(IF: 0.448)**.
77. S. Asghar, M. Arif, **M. Nawaz**, K Muhammad, M.A. Ali, M. D. Ahmad, S. Iqbal, A.A. Anjum, M. Khan, J. Nazir. (2016). Selection, characterization and evaluation of potential probiotic *Lactobacillus spp.* isolated from poultry droppings. *Beneficial Microbes.* 7 (1): 35-44. **(IF: 2.614)**
78. Aziz, K., **Nawaz, M.**, Nazir, J., Anjum, A. A., Yaqub, T., Ahmad, M. U. D., Khan, M. (2015). Isolation, characterization and effect of auxin producing bacteria on growth of triticum aestivum. *Journal of Animal and Plant Sciences*, 25(4). **(IF: 0.448)**.
79. **M. Nawaz**, C. Ma, Muhammad Asim R Basra, J. Wang, and J. Xu. 2015. Amelioration of ovalbumin induced allergic symptoms in Balb/c mice by potentially probiotic strains of lactobacilli. *Beneficial Microbes*. DOI: <http://dx.doi.org/10.3920/BM2014.0141>. **(IF: 2.614)**
80. Aziz, G., **M. Nawaz**, A.A. Anjum, T. Yaqub, M.D. Ahmed, **J. Nazir**, S.U. Khan, and K. Aziz. 2015. Isolation and characterization of phytase producing bacterial isolates from soil. *J. Anim. Plant Sci.* 25(3): 2015. **(IF: 0.448)**
81. Hamid Akbar, Muhammad Arif Khan, Shehla Gul Bokhari, Mansuruddin Ahmed, **Muhammad Nawaz**, Aftab Ahmed Anjum and Humaira Majeed Khan. 2015. Efficacy of Medetomidine Hydrochloride Alone and In Combination with Ketamine Hydrochloride for Surgical Anesthesia in Cats. *Pakistan Veterinary Journal.* **(IF: 1.392)**
82. Khan, M., J. Nazir, A.A. Anjum, M. Ahmad, **M. Nawaz**, and M.Z. Shabbir. 2014. Toxinotyping and Antimicrobial Susceptibility of Enterotoxigenic *Clostridium perfringens* Isolates from mutton, beef and chicken meat. *J Food Sci. Technol.* DOI 10.1007/s13197-014-1584-3. **(IF: 2.203)**
83. M. Kamran, M. U. D. Ahmad, A. A. Anjum, A. Maqbool, K. Muhammad, **M. Nawaz**, N.U. Hudda, S. Sana and M. A. Ali. 2014. Studies on the antibiotic susceptibility pattern of isolates of *P. multocida* from buffaloes. *J. Anim. Plant Sci.* 24 (5): 1565-1568. **(IF: 0.448)**

-
84. M. Kamran, M. D. Ahmad, A. A. Anjum, A. Maqbool, K. Muhammad, H. M. Khan, N. Huda, **M. Nawaz** and M. A. Ali. 2014. Antigenic variation among *Pasteurella multocida* isolates from diseased buffaloes by protein profiling and cluster analysis. *The Journal of Animal & Plant Sciences*, 24(4): 2014, Page: 101-109. **(IF: 0.448)**
85. Ma, C.; Wang, Z.; Li, S.; Xing, Y.; Wu, R.; Wei, J.; **Nawaz, M.**; Tian, H.; Xu, B.; Wang, J.; Yu, P. Analysis of an Outbreak of Hemorrhagic Fever with Renal Syndrome in College Students in Xi'an, China. *Viruses* 2014, 6, 507-515. **(IF: 3.353)**
86. S. Sabir, Anjum AA, Ijaz T, Ali MA, Khan MR, **Nawaz M.** Isolation and antibiotic susceptibility of *E. coli* from urinary tract infections in a tertiary care hospital. *Pak J Med. Sci.* 2014;30(2): 389-392 (IF: 0.231)
87. Ahmad MUD., Sarwar A, Najeeb MI, **Nawaz M**, Anjum AA, Ali MA and Mansur N. 2013. Assessment of microbial load of raw meat at abattoirs and retail outlets. *The Journal of Animal & Plant Sciences*, 23(3): 745-748 **(IF: 0.549)**
88. Akram Q, Muhammad K, Rabbani M, Nazir J, **Nawaz M**, Hanif K, Shakoore Z. 2013. Augmentation of biological titer of Foot and Mouth Disease Virus in In Vitro culture. *The Journal of Animal & Plant Sciences*. 23(3): 771-774. **(IF: 0.549)**
89. Yu P, Ma C, **Nawaz M**, Han L, Zhang J, Du Q, Li S, Feng Q, Wang J, Xu J. 2013. An Outbreak of Acute Respiratory Disease Caused by "Human Adenovirus Type 7" in a Military Training Camp in Shaanxi, China. *Microbiology and immunology*. 57:553-560 **(IF: 1.306)**
90. Ma, C.; Yu, P.; **Nawaz, M.**; Zuo, S.; Jin, T.; Li, Y.; Li, J.; Li, H.; Xu, J., Hantaviruses in rodents and humans, Xi'an, PR China. *Journal of General Virology*. **2012**, 93 (10), 2227-36. (3.33). **(IF=3.27)**
91. Ma, C.; Wu, X.; **Nawaz, M.**; Li, J.; Yu, P.; Moore, J. E.; Xu, J., Molecular characterization of fecal microbiota in patients with viral diarrhea. *Current Microbiology* **2011**, 63 (3), 259-66. **(IF=1.815)**
92. **Nawaz, M.**; Wang, J.; Zhou, A.; Ma, C.; Wu, X.; Moore, J. E.; Millar, B. C.; Xu, J., Characterization and transfer of antibiotic resistance in lactic acid bacteria from fermented food products. *Current Microbiology* 2011, 62 (3), 1081-9. **(IF=1.815)**
93. **Nawaz, M.**; Wang, J.; Zhou, A.; Ma, C.; Wu, X.; Xu, J., Screening and characterization of new potentially probiotic lactobacilli from breast-fed healthy babies in Pakistan. *African Journal of Microbiology Research* 2011, 5 (12), 1428-1436. (IF=0.539)
94. Zhou, A.; **Nawaz, M.**; Duan, Y.; Moore, J. E.; Millar, B. C.; Xu, J.; Yao, Y., Molecular characterization of isoniazid-resistant Mycobacterium tuberculosis isolates from Xi'an, China. *Microbial Drug Resistance* **2011**, 17 (2), 275-81. **(IF=2.153)**
95. Zhou, A.; **Nawaz, M.**; Xue, X.; Karakousis, P. C.; Yao, Y.; Xu, J., Molecular genotyping of Mycobacterium tuberculosis in Xi'an, China, using MIRU-VNTR typing. *International Journal of Tuberculosis and Lung Diseases* **2011**, 15 (4), 517-22. **(IF=2.731)**
96. Hayat, K.; Asim, M. B.; **Nawaz, M.**; Li, M.; Zhang, L.; Sun, N., Ameliorative effect of thymoquinone on ovalbumin-induced allergic conjunctivitis in Balb/c mice. *Current Eye Research* **2011**, 36 (7), 591-8. **(IF=1.280)**
97. Wu, X.; Ma, C.; Han, L.; **Nawaz, M.**; Gao, F.; Zhang, X.; Yu, P.; Zhao, C.; Li, L.; Zhou, A.; Wang,

J.; Moore, J. E.; Millar, B. C.; Xu, J., Molecular characterisation of the faecal microbiota in patients with type II diabetes. *Current Microbiology* **2010**, *61* (1), 69-78. **(IF=1.510)**

98. Chen, Q.; Wang, Z.; Xiong, Y.; Xue, W.; Kao, X.; Gao, Y.; Nawaz, M.; Song, D., Selenium increases expression of HSP70 and antioxidant enzymes to lessen oxidative damage in Fincoal-type fluorosis. *Journal of Toxicological Sciences* **2009**, *34* (4), 399-405

RESEARCH PROJECTS:

Sr. No.	Project Title	Funding Agency	Worth (Millions)	Status
1.	Metagenomic Analysis of Udder Microbiome and Development of Indigenous Probiotics for Control of Bovine Mastitis (PI)	PHEC	8 million	In Progress.
2.	Isolation of Enterotoxigenic <i>Clostridium Perfringens</i> from mutton, beef, and poultry meat and their Toxinotyping. (CO-PI)	HEC	0.50 million	Completed
3.	Development and Evaluation of Probiotics and plant extracts targeting increased phosphorus availability and decreased ammonia emission in poultry (PI)	HEC	3.0 million	Completed
4.	Characterization, Development and Evaluation of Indigenous Probiotics Targeting Control and Mitigation of <i>Salmonella</i> in Poultry and Human (PI)	HEC	6.00 million	Completed
5.	Evaluation of Anti-Campylobacter Activity of Indigenous Probiotic Lactobacilli alone and in combination with Different Organic Acids in Poultry (CO-PI)	HEC (NRPU)	3.4 million	Completed
6.	Evaluation and Characterization of Probiotic Bacteria for Enhanced and Efficient Poultry Production (PI)	HEC	0.5 million	Completed
7.	Optimization of Smart Surveillance for Smart Lock Down Strategy Through Monitoring SARS-COV-2 From Sewage Water (Co-PI)	Primary & Secondary HealthCare Department	17 million	Completed
8.	Development and pre-clinical studies of inactivated COVID-19 vaccine (CO-PI)	Health Care and Medical Education Department	100 Million	Phase-1 Completed

9.	Development and Evaluation of Indigenous Probiotic Targeting Control of Calf Diarrhea and Enhanced Production (PI)	PARB		Submitted
10.	Rapid Identification of COVID-19 immune health care workers and essential services providers to enhance national capacity to fight COVID-19 (PI)	PSF		Submitted
11.	Isolation of Enterotoxigenic <i>Clostridium Perfringens</i> from mutton, beef, and poultry meat and their Toxinotyping. (CO-PI)	HEC	0.50 million	Completed
12.	Development and Evaluation of Probiotics and plant extracts targeting increased phosphorus availability and decreased ammonia emission in poultry (PI)	HEC	3.0 million	Completed
13.	Preparation and evaluation of polyvalent snake anti-venom immunoglobulins” (PI)	PARB	31 million	Approved By Technical Committee
14.	Preparation and evaluation of multivalent vaccine for <i>Clostridium perfringens</i> using locally characterized toxinotypes (CO-PI)	HEC	7.90 million	Completed
15.	Development and evaluation of Lactobacillus based mucosal vaccine delivery vector for New Castle disease virus (CO-PI)	PARB	48.23 million	Submitted
16.	Development and evaluation of indigenous probiotics for mitigation and control of <i>Salmonella gallinarum</i> and <i>Salmonella pullorum</i> in poultry (PI)	PARB	13.37 million	Submitted
17.	Development and evaluation of novel probiotics, bacteriophage cocktails and vaccines against drug resistant bacterial etiologies of poultry and aquaculture (Team Member)	HEC-TDF	149 million	Submitted
18.	Water based epidemiology and development of an early warning system for emerging antibiotic resistance (PI)	PHEC	8.6 million	Submitted
19.	Development and Evaluation of Probiotics for Targeting Remediation of chromium and Arsenic in Gut (PI)	PHEC	9.7 million	Submitted
20.	Development, Evaluation and commercialization of novel, indigenous and cost-effective probiotics for food and pharmaceutical applications (PI)	GCF	102 million	Submitted

PAPERS PRESENTED (ORAL) IN SCIENTIFIC CONFERENCES:

1. **Muhammad Nawaz.** Paper presentation entitled “Modulation of ampicillin and ciprofloxacin resistance in *E. coli* of poultry origin by medicinal plant extracts” in One health International Conference, (OHC-2017) CVAS Jhang, UVAS Lahore November 13th-15th, 2017
2. **Muhammad Nawaz.** Paper presentation entitled “Evaluation of probiotic potential of locally characterized *Lactobacillus* spp. in broiler chicks” in 10th Biennial International conference of Pakistan Society of Microbiology. Exploring Microbes for future endeavors. March 25-28, 2015. University of the Punjab, Lahore, Pakistan
3. **Muhammad Nawaz.** Paper presentation entitled “Preventive effect of probiotic lactobacillus strains on ovalbumin induced allergic symptoms in Balb/C mice”. International conference & Expo 2014” on “Recent Developments in Human Nutrition. UVAS at PC, Lahore on 19th March, 2014
4. **Muhammad Nawaz.** Paper presentation entitled “Antiallergic effects of a probiotic strain, *Lactobacillus fermentum* NWS29 in Ovalbumin induced allergic airway Inflammation in BALB/c mice”. 2012. 2nd International Conference on Future Perspective of Food Processing Industry in Pakistan organized by GCU, Faisalabad.

ABSTRACTS PUBLISHED IN SCIENTIFIC PROCEEDINGS

1. Isolation and Identification of Indigenous *Clostridium perfringens* from Sheep. 2021. 4th Annual Conference on Stem Cell and Regenerative Medicine organized by University of Central Punjab, Lahore.
2. Investigation of anti-SARS-Cov-2 potential of ethanolic and methanolic extracts of *Allium sativum*, *Zingiber officinale*, *Eucalyptus globulus* and *Cinnamomum verum*. 2021. 13th International Biennial Conference, Pakistan Society for Microbiology (TIBC-PSM-2021), Organized by Department of Microbiology, Government University, Faisalabad, Punjab, Pakistan.
3. Optimization of *Streptococcus uberis* vaccine against mastitis. 2021. 13th International Biennial Conference, Pakistan Society for Microbiology (TIBC-PSM-2021), Organized by Department of Microbiology, Government University, Faisalabad, Punjab, Pakistan.
4. Comparative effect of organic acids and aqueous extract of Garlic and Ginger on survival of *Campylobacter jejuni* on chicken meat. 2021. 13th International Biennial Conference, Pakistan Society for Microbiology (TIBC-PSM-2021), Organized by Department of Microbiology, Government University, Faisalabad, Punjab, Pakistan.
5. Activity of plant extracts against corbapenum resistant *Acenitobacter baumannii*. 2020. 1st National Conference on Entrepreneurship Avenues in Biological Sciences (NCEB).
6. Isolation and toxinotyping of *Clostridium perfringens* from sheep. 2020. 1st National Conference on Entrepreneurship Avenues in Biological Sciences (NCEB).
7. Enterococci in poultry gut- A potential antibiotic reservoir. 2019. 21st International Poultry Science Conference at Expo center Lahore.

8. Alternative approaches to control salmonellosis in poultry. 2019. 21st International Poultry Science Conference
9. Isolation and in vitro characterization of anti-*Salmonella enteritidis* probiotic potential of indigenous lactobacilli from poultry. 2019. 21st International Poultry Science Conference
10. Transferable antibiotic resistances in lactobacilli of poultry gut origin a potential threat to public health. 2018. 15th international bhurban conference on applied sciences & technology
11. Dynamics of aflatoxin producing fungi in home mixed and commercial poultry feed. 2018. 15th international bhurban conference on applied sciences & technology
12. Genetic diversity of canine babesia species prevalent in pet dogs. 2018. 15th international bhurban conference on applied sciences & technology
13. Fancy birds: carriers of antibiotic resistance salmonellae and Escherichia coli. 2018. 15th international bhurban conference on applied sciences & technology
14. Incidence of mycoflora in animal feed and feed ingredients. 2018. 15th international bhurban conference on applied sciences & technology Bacteriological and mycological analysis of mixed vegetables salads for toxic potential. 2018. 15th international bhurban conference on applied sciences & technology
15. M. A. Ali, K. Muhammad, A. A. Anjum, M. D. Ahmad, M. Rabbani, M. Z. Shabbir, A. Ahmad, **M. Nawaz**, M. T. Ghori, J. Muhammad, H. R. Chaudhry, T. Jamil, M. Haisem, T. Awan, R. Ahmad and B. M. Jayarao. Association of soil chemistry and other factors with spatially distributed *Burkholderia mallei* DNA in Punjab province, Pakistan. January, 10th–14th. 2017. 14th International Bhurban Conference on Applied Sciences & Technology (IBCAST) Islamabad, Pakistan
16. B. Chaudhry, **M. Nawaz**, A.A. Anjum, A. Mustafa, M. Khan and M.A. Ali. Modulation of ampicillin and ciprofloxacin resistance in *E. coli* of poultry origin by medicinal plant extracts. November 13th-15th, 2017. One health International Conference, (OHC-2017) CVAS Jhang, UVAS Lahore
17. Q. Ain, **M. Nawaz**, M.A. Basra, M.I. Najeeb, M.A. Ali, A.A. Anjum, A. Mustafa and A. Khalid. Effect of different medicinal plant extracts on activity of ciprofloxacin and ampicillin against *Salmonella enterica*. December 19th-20th, 2017. International Conference on Recent Advances in Clinical Research, UVAS, Lahore
18. S. Sana, A.A. Anjum, **M. Nawaz**, M.A. Ali and M.I. Najeeb. In-Vitro evaluation and optimization of starch hydrolyzing potential of *Fusarium* isolated from soil of livestock farms. December 19th-20th, 2017. International Conference on Recent Advances in Clinical Research, UVAS, Lahore
19. Ghafoor A, A.A. Anjum, T. Yaqub, M.D. Ahmad, S. Sana, M.A. Ali and **M. Nawaz**. In-Vitro activity of plant essential oils against aflatoxin producing *Aspergillus flavus* from poultry feed. December 19th-20th, 2017. International Conference on Recent Advances in Clinical Research, UVAS, Lahore
20. Kousar, A., M.A. Ali, A.A. Anjum, M.D. Ahmad, **M. Nawaz**, A.K. Mahmood, M.I. Najeeb, M. Khan, S. Sana, M.A. Hafeez, M. Azhar, R. Khan and A. Razaq. Isolation,

- molecular identification and antibiotic resistance pattern of Salmonellae from fancy birds. 2016. 2nd International Conference on Zoonoses, FVS, BZ University, Multan
21. Sana, S., A.A. Anjum, M.D. Ahmad, **M. Nawaz**, I. Najeeb, A. Ahmad and M.A. Ali. *Penicillium*: A potential candidate for amylase production. 2016. 1st Biotechnology World Conference on advancements in biotechnology, Govt. College Women University Faisalabad and Akhuwat Faisalabad Institute of Research Science and Technology
 22. Ahmad, A. A.A. Anjum, M. Rabbani, K. Ashraf, **M. Nawaz**, A. Asif and S. Sana. Optimization of culture conditions for Phytase producing *Aspergillus flavus* Phy168 isolated from soil of livestock farms. 2016. 1st Biotechnology World Conference on advancements in biotechnology, Govt. College Women University Faisalabad and Akhuwat Faisalabad Institute of Research Science and Technology
 23. Saima Asghar, **Muhammad Nawaz**, Muhammad Asad Ali, Mansur-ud-din Ahmad, Khushi Muhammad, Aftab Ahmad Anjum, Madeeha Khan. Evaluation of probiotic potential of locally characterized *Lactobacillus spp.* in broiler chicks. 10th Biennial International conference of Pakistan Society of Microbiology. Exploring Microbes for future endeavors. March 25-28, 2015. University of the Punjab, Lahore, Pakistan
 24. Sohail Aslam, Aftab Ahmad Anjum, **Muhammad Nawaz**, Imran Altaf, Muhammad Wasim, Muhammad Asad Ali, Sehrish Firyal, Muhammad Zubair Shabbir and Hassan Saleem. Isolation, characterization and use of phytases producing bacterial isolates to enhance the phosphorous content of poultry feed. 2015. International Poultry Nutrition conference and expo-15. November 3-4, 2015. Page: 41
 25. Nayyab Tariq, Aftab Ahmad Anjum, **Muhammad Nawaz**, Muhammad Nasir, Abdul Hameed, Saba Sana and Muhammad Asad Ali. Occurrence of bacterial contaminants in poultry meals and their antibiotic resistance pattern. International Poultry Nutrition conference and expo-2015. November 3-4, Page: 42.
 26. Saba Sana, Aftab Ahmad. Anjum, **Muhammad Nawaz**, Mansur-ud-Din Ahmad and Kinza Khan. Amylase production potential of indigenous *Aspergillus niger* isolates from soil of livestock farms. International Livestock, Dairy and Poultry Congress. April 3-4, 2015. Pp: 44.
 27. S. Sana, A. A. Anjum, **M. Nawaz**, M. D. Ahmad and M. Khan. Starch hydrolyzing potential of non-toxigenic *Aspergillus terreus* isolates from soil of livestock farms in Lahore, Pakistan. 37th All Pakistan Science Conference, 16-17, November, 2015. Page: 02
 28. M. Khan, **A. A. Anjum**, M. Ashraf, **M. Nawaz**, M. D. Ahmad and S. Sana. Efficacy of *Eucalyptus globulus* and *Calotropis procera* extracts against *Staphylococcus aureus* and *Salmonella enterica*. 37th All Pakistan Science Conference, 16-17, November, 2015. Page: 04
 29. Rasool, M. R. Khan, M. A. Ali, A. A. Anjum, I. Ahmad, A. Aslam, G. Mustafa, S. Masood and **M. Nawaz** . Anti-Avian influenza virus H₉N₂ activity of *Zingiber officinalis* and

- Allium sativum* aqueous extracts on pathogenicity in chicken embryos. 37th All Pakistan Science Conference, 16-17, November, 2015. Page: 05
30. S. A. Raja, M. Ashraf, A. A. Anjum, A. Javed and **M. Nawaz**. Activity of *Zingiber officinale* essential oil and its various fractions against multi-drug resistant *Staphylococcus aureus* isolates. 37th All Pakistan Science Conference, 16-17, November, 2015. Page: 12
 31. S. Asif, N. Qamar, A. A. Anjum, **M. Nawaz**, K. Muhammad, and M. A. Ali. Prevalence of multi drug resistant Salmonella in meat samples of Lahore, Pakistan. 37th All Pakistan Science Conference, 16-17, November, 2015. Page: 20
 32. Memoona Manzoor, Zubair Farooq, Sanaullah Iqbal, **Muhammad Nawaz** and Hina Mukhtar. Aflatoxin free maize through detoxification by using 1N citric acid. International Human Nutrition conference & expo-15. November 3-4, 2015. page:57
 33. Memoona Manzoor, Zubair Farooq, Sanaullah Iqbal, **Muhammad Nawaz** and Hina Mukhtar. Quantification of Aflatoxin in maize samples collected from various parts of the Punjab, Pakistan. International Human Nutrition conference & expo-15. November 3-4, 2015. Page:60
 34. Farah Javed, Sanaullah Iqbal, Zubair Farooq, Faiza Masood and **Muhammad Nawaz**. Production of synbiotic product containing galacto-oligosaccharides and *Saccharomyces boulardii* and evaluation of its in vitro bifidogenic effect. International Human Nutrition conference & expo-15. November 3-4, 2015. Page 115
 35. Preventive effect of probiotic *Lactobacillus* strains on ovalbumin induced allergic symptoms in Balb/C mice. 2014. International Conference & Expo 2014. Recent Developments in Human Nutrition, Lahore, Pakistan. Pp: 53
 36. M.S. Ahmad, A. Maqbool, A.A. Anjum, M.A. Ali, **M. Nawaz** and A.N. Ahmad. 2014. Rodents from urban habitats of Lahore-Pakistan as zoonotic vectors of *Hymenolepis nana*. 1st International Conference on Zoonoses. BZU, Multan, Pakistan. Pp: 56
 37. H.R. Farooq, A.A. Anjum, K. Muhammad, M.D. Ahmad, M.A. Ali and **M. Nawaz**. Microbiological quality assessment of fresh fruit juices and milk shakes in Lahore. 2014. International Conference & Expo 2014. Recent Developments in Human Nutrition, Lahore, Pakistan. Pp: 113.
 38. Khan, M., A.A. Anjum, M.D. Ahmad, **M. Nawaz**, and J. Nazir. Toxinotyping and antimicrobial susceptibility of Enterotoxigenic *Clostridium perfringens* isolates from mutton, beef and chicken meat. DAAD-HEC international summer school entitled "Food Security in Times of Climate Change. COMSATS, Islamabad, November 2-5, 2013. pp: 28
 39. Screening and characterization of probiotic lactic acid bacteria from fermented food Products. 2013. Proceedings of the 2nd international workshop on Dairy Science Park. 18-20 Nov. 2013. Faculty of Animal Husbandry and Veterinary Sciences, The University of Agriculture, Peshawar-Pakistan, pp:103
 40. Akram, Q., K. Muhammad, M. Rabbani, J. Nazir, **M. Nawaz**, K. Hanif, and Z. Shakoor. Augmentation of biological titer of foot and mouth disease virus in *in vitro* culture. 2nd

- International workshop on dairy science park. University of Agriculture, Peshawar, November 18-20, 2013. pp:103
41. **Muhammad Nawaz**, Aftab Ahmad Anjum and Jiru Xu. Antiallergic effects of a probiotic strain, *Lactobacillus fermentum* NWS29 in Ovalbumin induced allergic. 2nd International Conference on Future Perspective of Food Processing Industry in Pakistan & 2nd Food and Nutrition Expo. Government College University, Faisalabad. Held on 11-12 December 2013. Pp: 63
 42. Muhammad Naeem Iqbal, Aftab Ahmad Anjum, Khushi Muhammad, Azhar Maqbool, **Muhammad Nawaz**, Muhammad Asad Ali and Gull Naz. Microbial Load of commercial fruit Juices in Lahore City. International Conference on Future Perspective of Food Processing Industry in Pakistan & 2nd Food and Nutrition Expo. Government College University, Faisalabad. Held on 11-12 December 2012. Pp: 47
 43. Sana Hameed, Aftab Ahmad Anjum, Khushi Muhammad, Atif Hanif, **Muhammad Nawaz**, Muhammad Asad Ali, Gull Naz, and Muhammad Hadayat Rasool. Monitoring of Mixed Vegetable Salads for Microbial Quality. International Conference on Future Perspective of Food Processing Industry in Pakistan & 2nd Food and Nutrition Expo. Government College University, Faisalabad. Held on 11-12 December. 2012. Pp: 77
 44. Hanif, K., K. Muhammad, A.A. Anjum, M.S. Khan, J. Nazir and **M. Nawaz**. Optimization of polymerase chain reaction for the detection of *Clostridium chauvoei* in clinical specimen for cattle. 1st national symposium on new horizons of microbiology, Department of Microbiology, Fedral Urdu University of Arts Sciences and Technology Karachi, November 7-8, 2012. pp:46

TRAININGS/ WORKSHOPS/ PROFESSIONAL DEVELOPMENT:

RESOURCE PERSON

1. **Resource Person** Three days hands on training on “**Advanced Biorisk Management for Officer of Diagnostic Lab Livestock & Dairy Development Department Punjab**” organized by Directorate of Animal Disease Diagnostic, Reporting and Surveillance, L&DD Department Punjab in Collaboration with Institute of Microbiology, UVAS, Lahore from March 10-12, 2021.
2. **Resource Person** Two days training on “**Diagnosis of Covid-19 using RT-PCR**” at BSL-3 Laboratory for emerging pathogens organized by Institute of Microbiology, UVAS, Lahore from July 13-14, 2021.
3. **Resource Person** Three days training on “**Working in BSL-3 Laboratory**” for officer of Livestock and Dairy Development Department Baluchistan at BSL-3 Laboratory for emerging pathogens organized by Institute of Microbiology, UVAS, Lahore from December 27-29, 2021.

4. **Resource Person** Two days training on “**Diagnosis of Covid-19 using RT-PCR**” for officer of Livestock and Dairy Development Department Baluchistan at BSL-3 Laboratory for emerging pathogens organized by Institute of Microbiology, UVAS, Lahore from December 30-31, 2021.
5. **Resource Person** in a three-day training of trainer’s workshop on “**Writing a competitive Grant Proposal**” organized by Department of Microbiology, UVAS from 21-23 January, 2020.
6. **Resource Person** in three-day training on **Working in BSL-3 Laboratory**” organized by Institute of Microbiology, UVAS from April, 08-10, 2020
7. **Resource Person** in two-day training on “**Diagnosis of COVID-19 USING RT-PCR**” organized by Institute of Microbiology, UVAS from April, 13-14, 2020
8. **Resource Person** in three-day training on “**Laboratory Biosafety, equipment maintenance and waste disposal**” for laboratory assistant of L&DD Punjab” organized by Institute of Microbiology, UVAS from October 13-15, 2020
9. **Resource Person** in two days training workshop on “**Advanced Detection of Food Borne Pathogens**” organized by Department of Microbiology, UVAS from 26-27th December, 2019.
10. **Resource Person** in “**Two-day Hands-on training workshop on Molecular Detection of Food borne Pathogens**” organized by Quality operation Laboratory on 28-29 November, 2019.
11. **Resource Person** in International Training Course on “**Poultry Viral Diagnostics**” organized by Department of microbiology, UVAS from 5-03-2018 to 12-03-2018
12. **Resource Person** in training workshop entitled “**Advanced Lab Techniques**” for lab assistants and lab attendants of UVAS at University of Veterinary and Animal Sciences, Lahore from 10-01-2018 to 12-01-2018
13. **Resource Person** in Training Program entitles “**Basic Chinese Language Course**” organized by UVAS-Pak China DESK from 27th March -10th April, 2017
14. **Resource Person** in Two-week Training of Young Faculty members of SBBUVAS (SKRAND) organized by Department of Microbiology, UVAS, Lahore from July 17-30, 2016
15. **Resource Person** in Three Day Training on “**Advanced Lab Techniques**” for Lab Assistants and Lab Attendants of UVAS organized by Department of Microbiology, UVAS from July 20-22, 2016
16. **Resource Person** in Workshop on “**Basic Lab techniques** “for Lab assistants and Lab attendants of UVAS organized by Department of Microbiology, UVAS from August 3-7, 2015
17. **Resource Person** in Workshop on “**Immunity and Immunogenesis**” 4-8 August 2014, Department of Microbiology, University of Veterinary and Animal Sciences, Lahore

18. **Resource Person** in Workshop on “**Complement fixation test**” 7-8 April 2014, Department of Microbiology, University of Veterinary and Animal Sciences, Lahore
19. **Resource Person** in Workshop on “**Laboratory techniques in Microbiology**” 27 Jan – 01 Feb 2014, Department of Microbiology, University of Veterinary and Animal Sciences, Lahore
20. **Resource Person** in Workshop on “**Common Laboratory Practices in Food Microbiology**” 23-27 September 2013, Department of Microbiology, University of Veterinary and Animal Sciences, Lahore
21. **Resource Person** in Workshop on “**Basic Laboratory techniques in bacteriology**” 16-20 September 2013, Department of Microbiology, University of Veterinary and Animal Sciences, Lahore
22. **Resource Person** in Two-day workshop on “**Use of Endnote Software in Article and Thesis Writing**” on 28-29 September 2012.
23. **Resource Person** in Workshop on Basic laboratory techniques in Microbiology “**Isolation and identification of food borne bacterial pathogens from foods of animal origin**” from 24- 28 September 2012.

SECRETARY:

- 1- **Secretary** three-days training on “**Working in BSL-3 Laboratory**” from 08-10th April, 2020
- 2- **Secretary** Three days hands on training on “**Advanced Biorisk Management for Officer of Diagnostic Lab Livestock & Dairy Development Department Punjab**” organized by Directorate of Animal Disease Diagnostic, Reporting and Surveillance, L&DD Department Punjab in Collaboration with Institute of Microbiology, UVAS, Lahore from March 10-12, 2021.
- 3- **Secretary** Two days training on “**Diagnosis of Covid-19 using RT-PCR**” at BSL-3 Laboratory for emerging pathogens organized by Institute of Microbiology, UVAS, Lahore from July 13-14, 2021.

CHIEF ORGANIZER:

- 1- **Chief Organizer** Two Days Hands on Training on “**16S Metagenomics: Data Analysis and Application**” from June 02-03, 2022.

TRAININGS / WORKSHOPS / PROFESSIONAL DEVELOPMENT (PARTICIPATION)

1. **Participated** in Seminar on “**Cooperation in Animal Epidemic Prevention and Control for Belt and Road Countries**” organized by Jiangsu inspection and Quarantine Institute of Quality, China, from May 12th- June 1st, 2021.
2. **Participated** in “**Virtual Training on “Biorisk Management**” organized by Association for Biorisk management in collaboration with Health Security Partner (HSP) and UVAS, from June 28th- July 2nd, 2021.

3. **Participated** in two days “Workshop on “**Patent Drafting**” Organized by Technology and Innovation Support Center in collaboration with veterinary Academy, UVAS from January 07-08, 2020.
4. **Participated** in two days “National Workshop on “**Patent Drafting**” Organized by In Service Training Facility of Advance Veterinary Education and Professional Development for Veterinary Professional Development in collaboration with Technology and Innovation Support Center (TISC) on 18th-19th June, 2019 at Conference Hall, UVAS.
5. **Participated** in International Workshop on “**Biosafety Laboratory Management and Techniques**” hosted by the Ministry of Foreign Affairs of the People’s Republic of China and the Chinese Academy of Sciences (CAS), and organized by Wuhan Institute of Virology (WIV), CAS on November 03 -09, 2019.
6. **Participated** in **Biosafety Leadership Summit** Organized by Pakistan Biological Safety Association at Ramada Hotel Islamabad on 18th-19th March 2019.
7. **Participated** in three days **International Poultry Expo-2019**, organized by Pakistan Poultry Association from 13-15th September, 2019 held at Expo center, Lahore
8. **Participated in** four days training workshop on “**One Health Training Program in Person Training**” organized by American Society of Microbiology in collaboration with Pakistan Biological Safety Association at COMSTECH Secretariat, Islamabad from 22-25th July 2019.
9. **Participated** in “**One Health International Conference (OHC 2017)** on November 13-15, 2017 organized by College of Veterinary & Animal Sciences, Jhang-Pakistan. (Sub Campus) UVAS Lahore
10. **Participated** in Two days “National Workshop on the “**Intellectual Property Protection for the Inventions Related to Agriculture and Animal Sciences**” in collaboration with Punjab Agriculture Research Board (PARB) on October 09-10, 2017 at Conference Hall, UVAS
11. **Participated** in “**In-Service Short-Term Training of University and College Faculty**” from 03-08-2016 to 05-08-2016, Department of Microbiology, UVAS, Lahore
12. **Participated in** “**Food Safety & Halal Standards Compliance Management**” certified Training Workshop April 13,2016 organized by **Punjab Halal Development Agency**
13. **Participated** in One day Workshop on “**Role of Imaging Techniques in Plant Disease Diagnosis**” on May 5, 2015 organized by Department of Plant Pathology, University of Sargodha
14. **Participated** in “**37th All Pakistan Science Conference**” held on 16th and 17th November, 2015 at **Pakistan Council of Scientific and Industrial Research (PCSIR) Labs, Ferozpur Road, Lahore**
15. **Participated** in two days training workshop on “**Fermenter Studies and End-Product Analysis by HPLC**” organized by **Institute of Industrial Biotechnology** June 29-30, 2015

16. **Participated** in “**International Conference & Expo 2014 Recent Developments in Human Nutrition**” on 19-20 March, 2014 organized by **UVAS, Lahore and Nutritionists Association of Pakistan** at Pearl Continental Hotel, Lahore
17. **Participated** in two days “**International Conference on Pharmaceutical Toxicology**” on April 25-26, 2013 held at **Department of Pharmacology and Toxicology, UVAS, Lahore** in collaboration with **HEC Islamabad, Pakistan & Department of Clinical Neuroscience, University of Cambridge, UK**
18. **Participated** in 2nd International Conference on “**Future Perspectives of Food Processing Industry in Pakistan & 2nd Food and Nutrition Expo**” organized by Department of Food Science on December 11-12, 2012
19. **Participated** in “**Current approaches for the diagnosis and control of Avian Mycoplasmosis**” Organized by UDL, UVAS, Lahore in collaboration with University of Connecticut (UCONN), USA on September 03-04, 2012 (2 days duration)
20. **Participated** in orientation workshop on ISI Web of Knowledge, 10th May, 2007, Organized by Punjab University Library

BOOKS / CONTRIBUTION TO EDITED VOLUMES BOOKS / MONOGRAPHS

1. Manual of Immunological Techniques. 2015. Prof. Dr. Khushi Muhammad, Prof. Dr. Masood Rabbani, Prof. Dr. Aftab Ahmad Anjum, Dr. Ali Ahmad Sheikh, Dr. Jawad Nazir, Dr. **Muhammad Nawaz**, Dr. Haroon Rashid Ch, Dr. Muhammad Asad Ali, Dr. Kashif Hanif, Mrs. Rubina Yasmin and Dr. Imran Altaf. Volume-I. (In Press)
2. Laboratory Manual on Quality Control of Milk. 2015. Prof. Dr. Khushi Muhammad, Prof. Dr. Masood Rabbani, Prof. Dr. Aftab Ahmad Anjum, Dr. Ali Ahmad Sheikh, Dr. Jawad Nazir, Dr. **Muhammad Nawaz**, Dr. Haroon Rashid Ch, Dr. Muhammad Asad Ali, Dr. Kashif Hanif, Mrs. Rubina Yasmin and Dr. Imran Altaf. Creatspace. ISBN-13: 9781515382164.
3. One Health: Open-source Bacteriology. Create Space Independent Publishing Platform; 1st Edition (May 26, 2014). (Co-author/Team Member) ISBN: 13: 9781494746889, ISBN: 10: 1494746883
4. Sample collection guide-a practical approach, 2013. Nexus Academic Publishers Pakistan, pp 1-13 <http://nexusacademicpublishers.com/books>
5. Introduction to Veterinary Biotechnology: Biotechnology concise notes. Create Space Independent Publishing Platform; 1st Edition (December 12, 2013). (Co-author/Team Member) ISBN: 13: 9781494468484

MEMBERSHIP OF PROFESSIONAL SOCIETIES:

- American Society of Microbiology
- Pakistan Society of Microbiology
- Member, National Academy of Young Scientist, Pakistan

- Life Member, Pakistan Association for the advancement of Science, Pakistan

ADVISORY SERVICES

- **Class Advisor**, 4th Year & Extra- BS (Hons.) Applied Microbiology
- **Tutor**, University of Veterinary and Animal Sciences, Lahore

MEMBERSHIP UNIVERSITY / PROFESSIONAL STATUTORY BODIES:

- **Coordinator**, Bacteriology & Mycology Section, IoM
- **Coordinator**, Molecular Microbiology Section, IoM
- **Manager**, Post Graduate Research Lab, IoM
- **Manager**, Probiotics Research Lab
- **Member**, BSL-3 laboratory Management Team
- **Member**, committee to “Establish optimized Diagnosis of Corona Virus”
- **Focal Person**, QEC, Department of Microbiology
- **Focal Person**, PM Laptop Scheme, Department of Microbiology
- **Secretary**, Board of studies, Department of Microbiology, Faculty of Veterinary Science
- **Member**, Board of studies of the Department of Microbiology
- **Member**, Faculty Board, Faculty of Veterinary Sciences, UVAS, Lahore
- **Member**, Internship Placement Committee, BS (Hons.) Applied Microbiology, UVAS, Lahore
- **Member**, Internship Monitoring Committee, BS (Hons.) Applied Microbiology, UVAS, Lahore
- **Member**, Time table committee for BS (Hons.) Applied Microbiology, Undergraduate programs, UVAS
- **Member**, Disciplinary committee, Annual Sports UVAS
- **Member**, Disciplinary committee in the “International conference and expo 2014 “Recent developments in Human Nutrition” held on 19-20 March 2014 at PC Hotel Lahore
- **Member**, Memento Committee
- **External Examiner**, postgraduate thesis examination at Microbiology and Molecular genetics, Punjab University, Lahore, Department of Microbiology, Kohat University of Science and Technology and Department of Industrial Biotechnology, GCU, Lahore

CO-CURRICULAR ACTIVITIES AND EXTRA-CURRICULAR ACTIVITIES

- **Vice President**, **Chess club** of the University
- **Member**, Organizing Committee Scientific Exhibition, UVAS

AWARDS/DISTINCTIONS

- Won HEC overseas scholarship for MS/MPhil leading to PhD in selected fields phase II

- Received Certificate of Appreciation from Chief Minister, Punjab “for providing the outstanding services during COVID-19 pandemic for diagnosis of COVID-19 at BSL-3 Laboratory for Emerging Pathogens, Institute of Microbiology, UVAS, Lahore since April, 2020.
- Received Honoraria from worthy Vice Chancellor, University of Veterinary and Animal Sciences, Lahore “For providing the outstanding services during COVID-19 pandemic for diagnosis of COVID-19 at BSL-3 Laboratory for Emerging Pathogens, Institute of Microbiology, UVAS, Lahore since April, 2020.
- Received Certificate of Appreciation from Primary and Secondary Health Care Department “For outstanding work on COVID-19 Pandemic” at BSL-3 Laboratory for Emerging Pathogens, Institute of Microbiology, UVAS, Lahore since April, 2020.
- Received Certificate of Appreciation by Pakistan Veterinary and Veterinary Council (PVMC) “For outstanding services during COVID-19 Pandemic for the diagnosis of COVID-19 at BSL-3 Laboratory for Emerging Pathogens, Institute of Microbiology, UVAS, Lahore since April 2020”.

REFERENCES

- Will be provided on demand