

NADIA MUKHTAR
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A. Personal Statement

My area of interest including disease diagnosis of Public Health Infections and research including emerging and zoonotic infections. Communicable disease monitoring and surveillance. Previously, was supervising the treatment facilities for Dog bite patients at center and working on diagnosis of Emerging infections, Tuberculosis, CCHF, Zikavirus, Chikungunya, WestNile Virus, MERS-Corona Virus, Dengue, HCV, and HIV.

Research **Impact Factor: 59.60**

Education and Training

University of the Punjab	B. Sc. (Hons.) 2008 (1 st Div)
	Zoology
University of Veterinary and Animal Sciences	M. Phil 2011 (1 st Div)
	Microbiology
University of Veterinary and Animal Sciences	Ph. D 2016
	Microbiology

PhD Research:

Supervised by **Prof. Dr. Tahir Yaqub**

Topic: Isolation and Molecular Characterization of Rotavirus from Calf Diarrhea and Preparation of Vaccine

M.Phil. Research:

Supervised by **Prof. Dr. Masood Rabbani**

Topic: Comparative Efficacy of Recombinant Avian Influenza H9N2 HVT Vected Vaccine in Poultry

B. Positions and Honors

Positions and Employment

May-2021 – Present	Assistant Professor, Institute of Microbiology, UVAS Lahore
October-2019 – 2020	Assistant Professor, HOD Department of Parasitology and Medical Immunology, Institute of Public Health Lahore
Feb-2018 – Feb 2019	Senior Scientific Officer and Focal Person, Provincial TB Reference Lab, Punjab TB Control Program, Primary & Secondary HealthCare Department, Govt. of Punjab
December, 2016- Feb-2018	Molecular Biologist, Punjab AIDS Control Program, and Incharge Dog Bite Centre, Primary & Secondary HealthCare Department, Govt. Of Punjab
May-November 2016	Consultant, Primary & Secondary HealthCare Department, Govt. Of Punjab
January, 2016- April, 2016	Tutor/Instructor at Department of Microbiology, Virtual University of Pakistan
Nov, 2015- Jan, 2016	Assistant Professor, Department of Medical Lab Sciences, University of Lahore
Aug, 2015-Nov, 2015	Senior Technologist, Doctors Hospital and Medical Center, Lahore

May, 2011-June, 2014

Research Associate, Quality Operations Laboratory, University of Veterinary and Animal Sciences Lahore, Pakistan

Honors

- Got a certificate from Universite de Lauzanne in a Pasteur International Workshop on Surveillance and Control of Rabies Phnom Penh, at Institute Pasteur Du Cambodia from 27th October – 07th November 2015
- Won a Scientific Exchange Award as the part of AAAS BMENA Scientific Exchange Program, supported by a grant from the U.S. Department of State (2013)
- Research Associate in a project “Development of Vaccine for the Control of Buffalo & Cattle Calf Diarrhea” funded by Punjab Agriculture Research Board (2011-2014)
- Team Member of “Ecosystem Health in the Pamirs” Funded Project by AAAS, USA
- Team Member of “Implementation of Bio-risk Management of Dengue Vectors in Lahore, Pakistan” Funded Project by BEP, USA (2013)
- Team Member of “Biosafety and Biosecurity Capacity Building Measures in Pakistan” Funded Project by BEP, USA (2013)
- Team Member of “A Pilot Study for the Prevention and Control of Rabies” Funded Project by WHO (2013)
- Student participant in a project “A metagenomics approach to unbiased identification of pathogens endemic to Pakistan” funded by (DTRA), USA (2011-2015)

Trainings

International:

1. Institut Pasteur International Workshop on Surveillance and Control of Rabies Phnom Penh, at Institute Pasteur Du Cambodia from 27th October – 07th November 2015
2. Metagenomic investigations of respiratory infections of Sheep at Harvil’s Lab, PennState University, USA from 19th Jan to 19th Feb, 2014.
3. Molecular Detection and Isolation of Mycoplasma: Application for Diagnostic of Contagious caprine pleuropneumoniae organized by International Center for Research on Agronomy and Development (CIRAD, France) Funded by American association of Advancement of Science (AAAS) from 7th Oct 2013 to 8th Nov. 2013.
4. Advanced Mosquito Surveillance and identification Molecular Techniques for Dengue Detection in Mosquitoes Organized by Department of Vector Biology Research Program at U.S Naval Medical Research Unit no. 3 Cairo, Egypt from 24-28 March, 2013.
5. Molecular and Serological tools for Dengue and CCHF Diagnostics Organized by Department of Virology at U.S Naval Medical Research Unit no. 3 Cairo, Egypt from 16-20 June, 2013.
6. Participated in Conference on Transboundary Animal Diseases in Pamirs and Outskirts, Dushanbe, Tajikistan from 5-7 March, 2012.

National:

7. As organizer participated in an International Workshop on “Master Trainer Program for laboratory Biosafety and Risk Management” in a joint collaboration with Institute of Public Health, Lahore and UVAS, funded by NAMRU-3 Egypt, held on 7th -12th September, 2015 at UVAS, Lahore
8. As Organizer participated in National Workshop on “Controlling Laboratory Biorisks” in a joint collaboration with Institute of Public Health, Lahore and UVAS, funded by NAMRU-3 Egypt, held on 11-13th May, 2015 at IPH, Lahore

9. National Awareness Conference on **“Tuberculosis: a Zoonosis”** Organized by Quality Operations Laboratory, held on 16th April, 2013 at UVAS, Lahore.
10. National workshop on **“National Workshop on Recombinant Technologies in Vaccine Development”** Organized by Institute of Biochemistry & Biotechnology, held on 11th April, 2013 at UVAS, Lahore.
11. National workshop on **“Newcastle Disease: Prevention and control in Pakistan”** Organized by Institute of Biochemistry & Biotechnology, held on 5th November, 2012 at UVAS, Lahore.
12. Participated in **“Current Approaches for the Diagnosis & Control of Avian Mycoplasma”** organized by University Diagnostic Lab in collaboration with University of Connecticut, USA under Pak (HEC)-US Cooperation Program Research Project, at University of Veterinary & Animal Sciences Lahore on 3-4 September, 2012.
13. Participated in **“Application of Bioinformatics in understanding the nature of Microbes”** organized by University Diagnostic Lab & Quality operations Lab under DTRA, USA funded Research Project at University of Veterinary & Animal Sciences Lahore on 1-2 August, 2012.
14. Participated in **“Modern Techniques in Cell Culture”** held by Quality Operations Laboratory at University of Veterinary & Animal Sciences Lahore on 16-19 July, 2012.
15. Participated in National Conference on **“Nanotechnology-Its application in animal Production and Health”** organized by Institute of Biochemistry & Biotechnology at University of Veterinary & Animal Sciences Lahore on 16th April, 2012.
16. Participated in National Training Workshop on **“GIS/GPS Application in Epidemiology of Human & Animal Diseases & in Biological Science Research”** held by University Diagnostic Laboratory at University of Veterinary & Animal Sciences Lahore on 28 Nov. to 02 Dec. 2011.
17. Participated in **“Provincial Advocacy Seminar”** held in connection with “World TB Day, 2011” at University of Veterinary & Animal Sciences Lahore on 24th March, 2011.
18. Workshop on **“Experimental Design & Data Analysis”** held at Department of Statistics & Computer Science, University of Veterinary & Animal Sciences Lahore from March 16-18, 2011.
19. Two days seminar and workshop on **“Environment Toxicology & Health”** at Department of Pharmacology & Toxicology, University of Veterinary & Animal Sciences Lahore from March 8-9, 2011.
20. Training on **“Avian Mycoplasmas”** at UDL, UVAS, Lahore on 6th – 7th Jan 2011.
21. Training on **“Propagation of New Castle disease virus in chicken embryo and detection of its immunogenic proteins using SDS-PAGE”** at Department of Microbiology, UVAS, Lahore on 31st May -4th June 2010.
22. Training on **“Monitoring of raw milk for sorbitol non-fermenting E. coli”** at Department of Microbiology, UVAS, Lahore on 17th -21st May 2010.
23. One week training on **“Development & Optimization of RT-PCR for the diagnosis of RNA virus”** at WTO, University of Veterinary & Animal Sciences Lahore from March 16-20, 2010
24. Participated in **“6th Asian Buffalo conference (international)”** on October 26-30, 2009 held at University of Veterinary & Animal Sciences, Lahore
25. Participated in **“26th Pakistan Congress of Zoology (international)”** on April 04-06, 2006 held at University of The Punjab, Lahore
26. Two weeks training on **“Environmental Sampling”** at Wildlife & Ecology, University of Veterinary & Animal Sciences Lahore from March to September 2009.

C. Selected Peer-reviewed Publications

1. Sardar N, Yaqub T, Anjum A, Javed M, Ayub S, **Mukhtar N**, Aslam H, Wolfe AJ, Schabacker DS, Forrester S. Endemic seroprevalence and farmer control measures of anthrax among ruminant animals in Pakistan. Volume 33, No. (4), 2023.

- 2.
3. Aziz MW, **Mukhtar N**, Anjum AA, Mushtaq MH, Shahid MF, Ali M, Shabbir MAB, Ali MA, Nawaz M, Yaqub T. 2023. 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(3): 607.
4. Kabir S, Tahir Z, **Mukhtar N**, Sohail M, Saqalein M, Rehman A. 2020. Fluoroquinolone resistance and mutational profile of gyrA in pulmonary MDR tuberculosis patients. *BMC pulmonary medicine*. 20: 1-6.
- 5.
6. Kabir, S., Tahir, Z., **Mukhtar, N.**, Sohail, M., Saqalein, M., & Rehman, A. (2020). Fluoroquinolone resistance and mutational profile of gyrA in pulmonary MDR tuberculosis patients. *BMC Pulmonary Medicine*, 20, 1-6.
7. Shahid, M.F., Shabbir, M.Z., Ashraf, K., Ali, M., Yaqub, S., **Mukhtar, N.**, Khan, A.Z., Tahir, Z., Yaqub, T (2020). Seroprevalence of Crimean Congo haemorrhagic fever among three selected risk human groups in disease endemic region of Pakistan. *Zoonoses Public Health*. 00:1–5.
8. Shahid, M.F., Shabbir, M., Ashraf, K., Ali, M., Yaqub, S., Rahman, A., Sardar, N., **Mukhtar, N.**, Tahir, Z., Yaqub, T. (2020). Sero-Epidemiological Survey of Crimean-Congo Hemorrhagic Fever among the Human Population of the Punjab Province in Pakistan. *Virologica Sinica*, 35(4): 486-489.
9. Yaqub, T., Oneeb, M., **Mukhtar, N.**, Tahir, Z., Shahid, F., Subhan, S., Mo Salman (2019). Crimean–Congo Haemorrhagic Fever: Case study analysis of a sporadic outbreak from Chakwal, Pakistan. *Zoonoses Public Health*. 66:871–873
10. Ali, M., Yaqub, T., **Mukhtar, N.**, Imran, M., Ghafoor, A., Shahid, M.F., Naeem, M., Iqbal, M., Smith, G.J. and Su, Y.C., 2019. Avian Influenza A (H9N2) Virus in Poultry Worker, Pakistan, 2015. *Emerging infectious diseases*, 25(1), p.136.
11. Yasmin, F., Yaqub, T., Idrees, M., Shahzad, W., Hashmi, A.S., Aqil, K., **Mukhtar, N.**, Zahoor, M.Y., Akhtar, N. and Umar, S., 2018. Cloning and expression of NS3 gene of Pakistani isolate type 2 dengue virus. *Journal of Veterinary Research*, 62(1), pp.17-26.
12. Sohail, T., Yaqub, T., Abbas, T., Rabbani, M., Nazir, J., Maqbool, S.M., Yaqub, S., Habib, M., **Mukhtar, N.**, Shahbaz, M. and Zahoor, M.Y., 2019. Seroprevalence of Bluetongue virus in small and large ruminants in Punjab province, Pakistan. *Acta tropica*, 189, 22-29.
13. Linz, B., **Mukhtar, N.**, Shabbir, M.Z., Rivera, I., Ivanov, Y.V., Tahir, Z., Yaqub, T. and Harvill, E.T., 2018. Virulent Epidemic Pneumonia in Sheep Caused by the Human Pathogen *Acinetobacter baumannii*. *Frontiers in Microbiology*, 9.
14. Yasmin, F., Yaqub, T., Khan, I., Shahzad, W., Hashmi, A.S., Tahir, Z., **Mukhtar, N.** and Umar, S., 2018. Antiviral Activity of Thiazolidine Derivatives Against Dengue Virus in Huh-7 Cell Line. *Jundishapur Journal of Microbiology*, 11(2):e62467
15. Habib, M., Yaqub, T., Nazir, J., Shehzad, W., Sohail, T., **Mukhtar, N.**, Mehboob, A., Munir, M. and Shabbir, M.Z., 2018. Genomic and biological characterization of Newcastle disease viruses isolated from migratory mallards (*Anas platyrhynchos*). *Archives of virology*, pp.1-10.
16. Yaqub, T., Shabbir, M.Z., **Mukhtar, N.**, Tahir, Z., Abbas, T., Amir, E. and Defang, G., 2017. Detection of selected arboviral infections in patients with history of persistent fever in Pakistan. *Acta tropica*, 176, pp.34-38.
17. Amjed, S., Junaid, K., Jafar, J., Amjad, T., Maqsood, W., **Mukhtar, N.**, Tariq, K., Sharif, M., Awan, JS., Ansari, F., 2017. Detection of antibacterial activities of Miswak, Kalonji and Aloe vera against oral pathogens and antiproliferative activity against cancer cell line. *BMC Complementary and alternative medicine*, 17:265.
18. Ali, M., Yaqub, T., **Mukhtar, N.**, Imran, M., Ghafoor, A., Shahid, M.F., Yaqub, S., Smith, G., Su, Y.C. and Naeem, M., 2017. Prevalence and Phylogenetics of H9N2 in Backyard and Commercial Poultry in Pakistan. *Avian Diseases*.
19. **Mukhtar, N.**, T. Yaqub, A. Masood, H. Javed, J. Nazir, A. Aslam, A. Ali, M. Javed, A. Nadeem, T. Hussain, Z. Tahir, H. Aslam (2016). Molecular Characterization of Bovine Rotaviruses in Pakistan. *Jundishapur J*. DOI: 10.5812/jjm.41001

20. **Mukhtar, N.**, T. Yaqub, M. Munir, J. Nazir, A. Aslam, A. Masood, Z. Tahir, M. Javed, A. Nadeem (2016). Prevalence of Bovine Rota Virus in Calves, Punjab, Pakistan. **J. Anim. Plant Sci.** 27 (1)/ accepted
21. Tahir Z, Ahmad MU, T. Yaqub, HJ. Hshmi, MH. Mushtaq, **N. Mukhtar**, H. Javaid (2016). Prevalance and factors associated with Diabetes Mellitus among Multi Drug resistant TB patients in Pakistan. *Pak. J. Zool.*
22. Rehmani. SF, A. Wajid, T. Bibi, B. Nazir, **N. Mukhtar**, A. Hussain, NA. Lone, T. Yaqub and CL Afonso (2015). Presence of Virulent Newcastle Disease Virus in Vaccinated Chickens Farms in Pakistan. **J Clin Microbiol.** 53(5):1715-8.
23. Sana I, M. Javed, T. Yaqub, M. Iqbal, A. Nadeem, **N. Mukhtar**, F. Maccee (2014). Genetic Basis of Estrous in Bovine: A Review. **Int. J. Adv. Res.** 2 (4): 962-966
24. Peyraud, A., F. Poumarat, F. Tardy, L.M. Silván, K. Hamroev, T. Tilloev, M. Amirbekov, K. Tounkara, C. Bodjo, H. Wesonga, I.G. Nkando, S. Jenberie, M. Yami, E. Cardinale, D. Meenowa, M.R. Jaumally, T. Yaqub, M.Z. Shabbir, **N. Mukhtar**, M. Halimi, G.M. Ziay, W. Schauwers, H. Noori, A.M. Rajabi, S. Ostrowski and F. Thiaucourt (2014). An international collaborative study to determine the prevalence of contagious caprine pleuropneumonia by monoclonal antibody-based cELISA. **Veterinary Research**, 10:48 doi:10.1186/1746-6148-10-48
25. Shaheen, F., M. Rabbani, Z.A. Qureshi, M. Hassan, A. Ahmad, F. Akhtar, S.Q. Afridi, H.B. Aslam, M. Akbar, T. Bibi, **N. Mukhtar** (2014). Surveillance of Insectivorous Bat population for Rabies virus in Pakistan. **J. Inf. Mol. Biol.** 2 (3): 39 – 42
26. Iqbal, M, T. Yaqub, **N. Mukhtar**, M.Z. Shabbir, J. MacCauly (2013). Infectivity and transmissibility of H9N2 avian influenza virus in chickens and wild terrestrial birds. **Vet. Res.** Doi, 10.1186/1297-9716-44-100
27. Shabbir M.Z., Z. Siamak, T. Yaqub, N. Jawad, M. Shabbir, **N. Mukhtar**, M. Shafee, M. Sajid, M. Anees, M. Abbas, M.T. Khan, A.A. Ali, A. Ghafoor, A. Ahad, A.A. Channa, A.A. Anjum, M.N. Kalhor, A. Ahmad, M.U. Goraya, Z. Iqbal, S.A. Khan, H.B. Aslam, K. Zehra, M.U. Sohail, W. Yaqub, N. Ahmad, M. Berg, M. Munir (2013). Genetic diversity of Newcastle disease virus in Pakistan: a countrywide perspective. **Virol. J**10:170, (DOI: 10.1186/1743-422X-10-170)
28. Shabbir, M. Z., M. Abbas, T. Yaqub, **N. Mukhtar**, A. Subhani, H. Habib, M. U. Sohail, M. Munir (2013). Genetic analysis of Newcastle disease virus from Punjab, Pakistan. **Virus Genes**, 46:309–315.
29. Afridi S.Q, M.N. Zahid., M.Z. Shabbir., Z. Hussain., **N. Mukhtar**, M.Y. Tipu., F. Akhtar, T. Yaqub (2013). Prevalence of HCV genotypes in district Mardan. **Virol J.** 20; 10:90. doi: 10.1186/1743-422X-10-90.
30. Rasheed, M., S.F. Rehmani, M. Iqbal, A. Ahmad, F. Akhtar, R. Akhtar, T. Bibi, H. Aslam, S.Q. Afridi, **N. Mukhtar**(2013). Seropositivity to Avian Influenza Virus Subtype H9N2 among Human Population of selected districts of Punjab, Pakistan. **J. Infec. Mol. Biol**1 (2): 32 – 3
31. Naseer, H., S. Faryal, T. Yaqub, A.A. Anjum, M.Y. Zahoor, M. Waseem, **N. Mukhtar** and A.R. Awan(2013). Molecular basis of tetracycline resistance in *Escheresia coli* isolates recovered from poultry drinking water. **Int.J. Agr. Bio.**, 1560:8530
32. T. Bibi, A. Aslam, S. F. Rehmani, A.Y. Shaheen, **N. Mukhtar**, A. Wajid, S. Jabeen, S.Q. Afridi, H.A. Shahid (2013). Segregation of Plasma Cells in Lymphoid Organs by Various Routes of Vaccination against Newcastle Disease in Broiler Chickens. **J. Infec. Mol. Biol** 1 (3): 41 – 45
33. Munir, M., M. Z. Shabbir, T. Yaqub, M. A. B. Shabbir, **N. Mukhtar**, M. R. Khan, e and M. Berg (2012). Complete Genome Sequence of a Velogenic Neurotropic Avian Paramyxovirus 1 Isolated from Peacocks (*Pavo cristatus*) in a Wildlife Park in Pakistan. **J. Virol.** 86(23): 13113-13114.
34. Yaqub, T., S. Sadaf, **N. Mukhtar**, H. Zaneb, M. Z. Shabbir, A. Ahmed, A. Aslam, K. Ashraf, N. ahmad, H. Rehman (2012).The influence of time elapsed after milking and lactation stage on the Lactoperoxidase System of Milk in Sahiwal Cattle and Nili-Ravi Buffaloes. **Int. J. Dairy Tech.** 65(3): 360 -364.

D. Oral Presentations:

1. Yaqub, T., **N. Mukhtar**, M.Z. Shabbir, M. Munir, J. Nazir, A. Masood, Z. Tahir, M. Javed (2015). Prevalence And Epidemiology Of Bovine Rota Virus In Calves In Punjab Province, Pakistan In 8th Asian Buffalo Congress Held In Istanbul, Turkey From 21 - 25 April 2015.
2. **Mukhtar, N.**, M.Z. Shabbir, M. Munir, A. Masood, Z. Tahir, J. Nazir, T. Yaqub (2015). Molecular Based Investigation Of Vp4 And Vp6 Gene Of Bovine Rotavirus In Pakistan 8th Asian Buffalo Congress Held In Istanbul, Turkey From 21 - 25 April 2015.

E. Poster Presentation:

1. Shabbir, M.Z., Y. Ivanov, J. Park, M. Rabbani, T. Yaqub, **N. Mukhtar**, A. Ahmad, E.T. Harvill (2015). Culture-Independent Analysis Of Gastrointestinal Tract Microbiome Of Clinically Healthy And Diseased Calves In Pakistan 8th Asian Buffalo Congress Held In Istanbul, Turkey From 21 - 25 April 2015.

F. TECHNICAL EXPERTISE

I have a good experience of applied research and disease diagnosis including Tuberculosis, HIV/AIDS, Rotavirus, Coronavirus, Viral hemorrhagic fevers including CCHF, Chikungunya, WestNile Virus, Dengue, Chikungunya, MERS-Corona virus. Paramyxoviruses, Orthomyxovirus, Lyssavirus etc.

Molecular Biology & Biochemistry Technique

- Standardization of PCR, RT-PCR, Flow Cytometry

Immuno-fluorescence technique

- Fluorescent antibody test (FAT) for identification of virus and bacteria using monoclonal and group specific antibodies.

Microbial Technique

- Isolation, Identification and Quantification of different type of bacteria

Egg Inoculation and Cell Culture Technique

- Isolation of Highly and Low Pathogenic Avian Influenza Virus subtype such as H5N1, H9N2, and H7N3, Paramyxovirus, Rotavirus, Retroviruses.

Serological Technique

- Identification and titration of virus/serum by Haemagglutination and Haemagglutination inhibition (HI) test.
- Different types of ELISA such as direct, indirect, Sandwich, competitive and dot ELISA
- AGID, RBPT etc.

Animal handling experience

- Experience in maintenance, care and handling of lab animal like mice, rat and chickens for experimental studies.

PROJECTS SUBMITTED AND COMPLETED

Sr. #	Title of Project (attach one page summary of each project)	Status of Project	As PI or Co-PI/Team Member
1	Transboundary Ecosystem Health in the Pamirs, Pakistan, funded by American Association for the Advancement of Science (AAAS) 2011-2012	Completed	Team Member
2	Molecular Detection and Isolation of Mycoplasma: Application for Diagnostic of Contagious caprine pleuropneumoniae organized by International Center for Research on Agronomy and Development (CIRAD, France) Funded by American Association of Advancement of Science (AAAS) from 7 th Oct 2013 to 8 th Nov. 2013	Completed	PI
3	Implementation of Bio-risk Management of Dengue Vectors in Lahore, Pakistan funded by BEP, USA 2012-2014	Completed	Team Member
4	Metagenomic investigations of respiratory infections of Sheep funded by Defense Threat Reduction Agency (DTRA), USA 2010-2015	Completed	Research Student/Team Member
5	Development of Vaccine for the Control of buffalo and cattle Calf Diarrhoea funded by Punjab Agriculture Research Board (PARB) 2011-2014	Completed	Research Associate
6	Biosafety and Biosecurity Capacity Building Measures in Pakistan funded by BEP, USA 2012-2014	Completed	Team Member
7	A pilot study for the Prevention and control of Rabies funded by WHO 2014-2015	Completed	Team Member
8	Viral Hemorrhagic Fever disease Surveillance, diagnostic testing and laboratory capacity building in Pakistan funded by NAMRU-3 Egypt 2014-2015	Completed	Team Member
9	Serological Evidences for Emerging Diseases at the Level of Human and Animal Interface funded by CRDF 2015-2016	Completed	Team Member
10	Deciphering the role of Bats as natural reservoir for zoonotic and emerging pathogens of public health (Project ID: GTR3-15-61876-0). Value funded by CRDF 2015-2016	Completed	Team Member