

Dr. Muhammad Arif Rizwan

DVM, MPhil, PhD

Lecturer | Department of Epidemiology and Public Health

Cholistan University of Veterinary and Animal Sciences (CUVAS), Bahawalpur, Pakistan



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PROFESSIONAL PROFILE

Dr. Muhammad Arif Rizwan holds a DVM (Gold Medalist, 2014) and an MPhil in Clinical Medicine (2016) from UVAS Lahore. He earned his PhD at the Wuhan Institute of Virology, University of Chinese Academy of Sciences, China, as an ANSO Scholar. His doctoral research used phylogenetics, multi-omics, and genomic surveillance to investigate influenza A virus evolution and pharyngeal microbiome disruption under changing epidemiological pressures.

His research is grounded in the One Health framework, with a focus on respiratory pathogen genomics, zoonotic surveillance, and mucosal ecosystem dynamics. His work highlights the value of integrated viral-bacterial surveillance for post-pandemic outbreak preparedness and antimicrobial stewardship. He has published in journals including npj Biofilms and Microbiomes, Viruses, and Journal of Medical Virology.

He began his academic career as a Lecturer in Clinical Medicine before joining the Punjab Livestock & Dairy Development Department as a Veterinary Officer through the Punjab Public Service Commission (PPSC). He later joined CUVAS, where he teaches and conducts research at the intersection of epidemiology, genomic surveillance, and public health. As Vice President of the One Health Club CUVAS, he contributes to cross-sectoral disease surveillance capacity and the translation of pathogen genomic intelligence into public health policy in Pakistan.

RESEARCH INTERESTS

- Evolution
- Genomics
- Metagenomics
- Bioinformatics Analysis of Pathogenic Microbes

EDUCATION

PhD

Wuhan Institute of Virology, University of Chinese Academy of Sciences, China — ANSO Scholar

MPhil in Clinical Medicine (2016)

University of Veterinary and Animal Sciences (UVAS), Lahore

DVM (2014)

University of Veterinary and Animal Sciences (UVAS), Lahore — Gold Medalist

AWARDS & DISTINCTIONS

Appreciation Certificate — In recognition of research publications, ORIC, CUVAS.

ANSO Scholarship for Young Talents — PhD Scholarship, 2022.

Gold Medal in DVM, 2014 — Awarded by ILDPC & PVMA.

Merit Certificate in DVM, 2014.

Merit-Based Laptop — Government of Punjab, Pakistan.

PROFESSIONAL EXPERIENCE & SERVICE

Lecturer, Department of Epidemiology & Public Health, Cholistan University of Veterinary and Animal Sciences, Bahawalpur.

Vice President, One Health Club CUVAS.

Researcher / PhD Scholar, Wuhan Institute of Virology, University of Chinese Academy of Sciences, China.

Lecturer, Institute of Continuing Education & Extension, Cholistan University of Veterinary and Animal Sciences, Bahawalpur.

Veterinary Officer (BPS-17), Livestock & Dairy Development Department, Punjab.

Lecturer, Department of Clinical Medicine & Surgery, Riphah College of Veterinary Sciences, Lahore.

TRAINING, COURSES & WORKSHOPS

2024 Summer School on Frontier and Interdisciplinary Sciences for International Students of the University of Chinese Academy of Sciences, 4–10 August 2024, UCAS Yanqihu Campus, Huairou, Beijing, China.

BGI (Beijing Genomics Institute) International Summer Workshop 2024 & ICG-19 Youth Symposium: “Bio Revolution for Sustainable Future,” 28 July–3 August 2024, BGI Centre, Shenzhen, China.

International Workshop on Biosafety Laboratory Management and Techniques, 4–18 November 2023, State Key Laboratory, Wuhan Institute of Virology and University of Chinese Academy of Sciences, China.

10th Wuhan International Symposium on Modern Virology, 28–29 October 2023, held as a sub-forum of the Hubei Science and Technology Academic Annual Conference.

RNA Sample NGS Library Construction Practical Training, Phase II, 2023, State Key Laboratories of Virology & Ab Clonal Technology Co., Ltd., China.

One-Day Hands-On Training on Lumpy Skin Disease (LSD), 2022, Cholistan University of Veterinary and Animal Sciences, Bahawalpur, Pakistan.

Two-Day Workshop on Promoting Research Excellence in Academics Across Pakistan, Research Academy – On Campus (Elsevier), 2022.

One-Day Seminar: China–ASEAN Forum of Veterinary Vaccine & Drugs, December 2021, Beijing, China.

One Health Week, 3–10 November 2020, Cholistan University of Veterinary and Animal Sciences, Bahawalpur, Pakistan.

One Health Week, 7–14 November 2019, Cholistan University of Veterinary and Animal Sciences, Bahawalpur, Pakistan.

In-Service Competency Enhancement Training for University Faculty, April 2019, Centre for Educational Policy and Administration, UVAS.

Business Opportunities in Sheep & Goat Farming, August 2015, Centre for Human Resource and Development, UVAS.

PUBLICATIONS

1. Public Health & Respiratory Virus Genomics

1. Noman M, Li Y, Huang J, Liu H, Isiaka ID, Rizwan MA, Chen H, Li W, Wang Y, Han F, Xu J, Liu X, Du H, Liu Y, Du Q, Liu D, Lu X, Yan Y. Pharyngeal Microenvironment Associated with Human Rhinovirus Infection in Children: Insights from Metatranscriptomic Sequencing. *npj Biofilms and Microbiomes*, 2026. (Impact factor: 11.4)
2. Rizwan MA, Li Y, Huang J, Liu H, Noman M, Isiaka ID, Chen H, Li W, Liu Y, Wang H, Xiao Y, Yan Y, Lu X, Liu D. (2026). Genomic Evolution of Influenza A(H1N1)pdm09 and A/H3N2 Viruses Among Children in Wuhan, China, Spanning the COVID-19 Pandemic (2020–2023). *Viruses*, 18(2), 210. <https://doi.org/10.3390/v18020210> (Impact factor: 3.5)
3. Huang J, Li Y, Chen H, Liu H, Li W, Isiaka ID, Du H, Noman M, Rizwan MA, Du Q, Li Y, Lin Y, Liu Y, Lu X, Liu D, Yan Y. (2024). Epidemiological, Clinical, and Genomic Traits of PIV in Hospitalized Children After the COVID-19 Pandemic in Wuhan, China. *Journal of Medical Virology*, 96, e70117. <https://doi.org/10.1002/jmv.70117> (Impact factor: 6.8)
4. Ishaq SE, Abdulqadir SZ, Khudhur ZO, Omar SA, Qadir MK, Awla HK, Rasul MF, Bapir AA, Zanichelli A, Mansoor MK, Kaleem M, Rizwan MA, Smaila SW, Babaei E. (2021). Comparative study of SARS-CoV-2 antibody titers between male and female COVID-19 patients living in Kurdistan region of Iraq. *Gene Reports*, 25, 101409.

2. One Health, Zoonoses & Veterinary Public Health

5. Safdar M, ur Rehman S, Younus M, Rizwan MA, Kaleem M, Ozaslan M. (2024). One Health approach to Nipah virus prevention. *Vacunas*.
6. Kaleem M, Durani AZ, Safdar M, Rizwan MA, Khan I, Iqbal MK, Mehmood K. (2024). Bovine brucellosis: Exploring the role of phytonutrients in treating the disease. *Comparative Clinical Pathology*, 33, 897–903. <https://doi.org/10.1007/s00580-024-03612-3>
7. Kaleem M, Durrani AZ, Rizwan MA, Arain MA, Saeed M, Bhutto ZA, Kasi KK, Bacha U. (2021). Epidemiological investigation of outbreak of Brucellosis at private dairy farm, Central Punjab-Pakistan. *J Adv. Anim. Vet. Sci.*, 4(8), 394–397.
8. Rizwan MA, Yaqub W, Durrani AZ, Ahmad A, Fatima A, Kaleem M, Siyal FA, Bhutto ZA, Asif M. (2021). Serodetection of antibodies for *Mycobacterium avium* subspecies *Paratuberculosis* in sheep along with its associated risk factors in District Rahim Yar Khan. *Uni. Sindh J Anim. Sci.*, 3(1), 9–13.
9. Aqib AI, Ijaz M, Durrani AZ, Anjum AA, Hussain R, Rizwan MA, Farooqi SH, Hussain K, Sana S. (2021). Coag gene prevalence and associated risk factors with camel mastitis in Pakistan. *Pak Vet J*, 37(2), 160–164.

3. Collaborative Work — Cancer Bioinformatics, Livestock & Miscellaneous

10. Syed Sabir Ali Shah, Madiha Zaynab, Jallat Khan, Bushra Munir, Hafsa Ilyas, Nimra Arshad, Abdullah Sethar, Tamseel Saleem, Kashif Prince, Rabab Akhtar, Muhammad Arif Rizwan*, Anam Aftab. Exploring KRAS Expression Heterogeneity in Esophageal Carcinoma: Implications for Prognosis, Therapy, and Diagnosis. *Kurdish Studies*, August 2024, 12(5), 721–730. ISSN 2051-4883 (Print) | ISSN 2051-4891.
11. Muhammad Asghar Khan, Muhammad Imran, Muhammad Kashif Iqbal, Muhammad Khizer Hayat, Uzma Azeem Awan, Kashif Prince, Qaiser Akram, Israr Khan, Umair Younas, Jamal Muhammad Khan, Muhammad Arif Rizwan. Comprehensive Bioinformatics Analysis Reveals GAPDH as a Prognostic Biomarker in Liver Hepatocellular Carcinoma and Head and Neck Squamous Cell Carcinoma. *Kurdish Studies*, June 2024, 12(5), 434–442. ISSN 2051-4883 (Print) | ISSN 2051-4891.
12. Muhammad Afzal, Zahid Iqbal Rajput, Sobia Mumtaz, Kashif Prince, Shahid Moin Qureshi, Hafiz Shehzad Muzammil, Muhammad Junaid, Dilshad Rashid, Umair Younas, Maryam Saddiqa, Muhammad Arif Rizwan*. Deciphering Key Hub Genes in Medulloblastoma: Integrative Analysis of Transcriptomic Datasets Reveals Potential Biomarkers and Therapeutic Targets. *J Popl Ther Clin Pharmacol*. <https://doi.org/10.53555/jptcp.v31i6.6813>

13. Soomro IA, Abbas M, Janyaro H, Siddique A, Hayyat K, Hussain I, Gull S, Rizwan MA, Jatoti BA, Bughio E. (2024). Deciphering the role of Vascular Endothelial Growth Factor, A (VEGFA) in colon adenocarcinoma progression: A comprehensive bioinformatics analysis. *J Popl Ther Clin Pharmacol*, 31(5), 351–360.
14. Ullah H, Tariq S, Lanjar Z, Hussain I, Shamim A, Noori N, Hakeem S, Bughio E, Rahimoon MM, Rizwan MA, Janyaro H. (2024). Deciphering the orchestrated symphony: ANLN's multifaceted role in liver hepatocellular carcinoma pathogenesis and prognosis. *J Popl Ther Clin Pharmacol*, 31(4), 2005–2014.
15. Ejaz M, Gull S, Umbreen H, Noureen F, Hameed SA, Kalwar Q, Bughio R, Rizwan MA, Farooq J, Janyaro H, Adnyana IMDM. (2024). The up-regulated cul7 gene is associated with pathogenesis, metastasis, and low survival rates in liver hepatocellular carcinoma patients. *J Popl Ther Clin Pharmacol*, 31(4), 1411–1420.
16. Rasoul AA, Khudhur ZO, Hamad MS, Ismaeal YS, Smail SW, Rasul MF, Mohammad KA, Bapir A, Omar SA, Qadir MK, Rajab MF, Salihi A, Kaleem M, Rizwan MA, Qureshi AS. (2021). The role of oxidative stress and haematological parameters in relapsing-remitting multiple sclerosis in Kurdish population. *Multiple Sclerosis and Related Disorders*, 56, 103228.
17. Safdar M, Kaleem M, Duarte PM, Tazerji SS, Ozaslan M, Hassanpour S, Rath J, Priyadarsini S, Rizwan MA. (2024). Review on optimizing dairy sector efficiency: Integrating genetic markers with management techniques. *Ecol. Genet. Genomics*, 100259. <https://doi.org/10.1016/j.egg.2024.100259>
18. Tariq M, Khan MS, Mubashir M, Safdar M, Ozaslan M, Farooq Z, Rizwan MA, Kaleem M, Ullah Q, Siddique F, Junejo Y. (2022). Review on Trypanosomiasis and their prevalence in ruminants. *Zeugma Biological Science*, 3(2), 12–31.
19. Mumtaz S, Iqbal MK, Rizwan MA, Kaleem M, Maqbool B, Noman M. (2023). Effect of diarrhea on serum electrolytes and trace elements in sheep and goats. *Uni. Sindh J Anim. Sci.*, 7(3), 57–61.
20. Iqbal MK, Mehmood K, Ahmed S, Nabi F, Rizwan MA, Kaleem M, Ahmad M, Waheed A, Li J. (2021). FK228 ameliorates the liver toxicity and oxidative stress on thiram-induced tibial dyschondroplasia in chicken. *Pakistan Journal of Zoology*.
21. Safdar M, Rizwan MA, Kaleem M. (2021). How to assess evolutionary relationship of HSP 60 genes in goat and other animals. *Zeugma Biological Science*, 2(3), 15–17.

BOOK CHAPTER

Asim M, Rizwan MA, Khan SU, Razzaq N, Haider SS, Qureshi SM, Kaleem M, Zeeshan M, Ahsan T, Ghazali MH. (2024). Mitigating zoonotic transmission: probiotics and prebiotics strategies in control of brucellosis. In Farooqi SH, Aqib AI, Zafar MA, Akhtar T, Ghafoor N (eds.), *Complementary and Alternative Medicine: Prebiotics and Probiotics*. Unique Scientific Publishers, Faisalabad, Pakistan, pp. 304–312. <https://doi.org/10.47278/book.CAM/2024.423>

MEMBERSHIP

Pakistan Veterinary Medical Council.