

# CURRICULUM VITAE

## MUHAMMAD UMAR ZAFAR KHAN

**DVM, M. Phil, Ph.D. (LVRI-CAAS)** (Microbiology & Molecular Biology)

Assistant Professor/ HEC-Approved Supervisor/ RVMP/RVMF

Certified Master Trainer of Pedagogical Skills (Qatar & Canada)

Institute of Microbiology, University of Agriculture, Faisalabad (IOM-UAF), Pakistan.

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### Career summary:

I began my veterinary career in clinical practice, later advancing into clinical microbiology and molecular diagnostics during my doctoral training with focus on infectious diseases and advanced techniques. Today, I blend hands on clinical insight with diagnostic and marketing expertise positioning veterinary diagnostic solutions, communicating value to stakeholders, and providing evidence-based guidance that strengthens clinical decisions, disease surveillance, and animal health outcomes..

### EMPLOYMENT:

- **Assistant Professor** Institute of Microbiology -UAF, Faisalabad, Pakistan (**Feb 2022- To date**)
- **Assistant Professor/** Head of Department of Veterinary Sciences, Superior University (**Sep 2021-Jan 2022**)
- **Research Associate** at State Key Laboratory of Innovative Team for GI Infection & Mucosal Immunity of Swine & Poultry Lanzhou Veterinary Research Institute Chinese Academy of Agricultural Sciences, China (**03-2017 to 08-2020**)
- Worked as **Incharge of 24/7 Extension** Service, UVAS, Lahore, and Veterinary Teaching Hospital at Sattar Walla Outreach Centre of University of Veterinary & Animal Sciences, Lahore, Pakistan. (**Sep 2013 to Aug 2016**)

### EDUCATION:

#### PhD

**Beijing China (2016-2020)**

- **Thesis Title:** Profiling of the Molecular Typing of *Clostridium perfringens* isolated from Broiler Chicken in China & Pakistan. (**1<sup>st</sup> Study from China-Pakistan on DNA-Fingerprinting**)
- State Key Laboratory of Innovative Team for GI Infection & Mucosal Immunity of Swine & Poultry Lanzhou Veterinary Research Institute Chinese Academy of Agricultural Sciences, China
- **Major:** Preventive Veterinary Science (**Microbiology and Molecular Biology**)

#### M.Phil.

**Lahore, Pakistan (2013-15)**

- **Thesis Title:** Common Nosocomial Bacterial Isolation & Identification from Veterinary Hospitals.
- **University of Veterinary and Animal Sciences, Lahore, Pakistan**
- **Major:** Clinical Medicine

#### D.V.M.

**Lahore, Pakistan (2008-13)**

**Major:** Veterinary Medicine

- **University of Veterinary and Animal Sciences Lahore, Pakistan**
- **Outreach Activities/Community/Extension services**
- Incharge/Conducted a series of farmer days to demonstrate diseases of veterinary importance to the farmers elaborating on the benefits of healthy animal farming and 24/7 Extension services UVAS, Lahore.

**PROJECTS:**

1. A Novel Formulation Strategy for Combating Necrotic Enteritis in Poultry: A Network Pharmacology and Molecular Docking Approach Targeting Net-B Toxin in Poultry (**PARB-2025 Shortlisted , 33,000\$**)
2. A potent candidate drug formulation for controlling Net-b toxin-induced Necrotic Enteritis in poultry”. (Budget 40,000\$ Submitted to Punjab Agriculture Board) As PI. **[Shortlisted]**
3. Genomic insights into the host-specific adaptation of a zoonotic *Clostridium perfringens* through Nanopore sequencing and implications for diagnostics. (**Budget 13,636\$ as Co-PI Submitted to NIH. [Decision Awaiting]**)
4. Molecular Epidemiology and Antimicrobial Resistance Profiling of *Clostridium Perfringens* from Livestock and Poultry. As PI **[Submitted to Agriculture Linkages Program (ALP) 35,000\$]**
5. Structural Bioinformatics Of Net-B Toxin: A Novel Potent Candidate Drug Formulation For Controlling Necrotic Enteritis In Poultry : As PI **[Submitted to Higher Education Commission under NRP 32,500\$]**

RESEARCH INTERESTS:	PROFESSIONAL SKILLS
<ul style="list-style-type: none"> <li>▪ Bacterial Population Genetics</li> <li>▪ Animal Disease Modeling (Mathematical and Statistical Models)</li> <li>▪ Molecular biology / Biotechnology</li> <li>▪ Emerging Animal Diseases and Public Health</li> <li>▪ Development of Novel and Diagnostic Tools</li> <li>▪ Biohazardous Waste Management / Bio Risk Management</li> <li>▪ Care and Use of Biosafety Cabinet</li> <li>▪ On-Farm Culture (Mastitis Control Strategy)</li> </ul> <p><b>Animal Experimentation</b> Skillful handling of laboratory animals including chicken, sheep, and rabbit Sample collection from a pet and large animal</p>	<p><b>Microbiology and Molecular Biology</b></p> <ul style="list-style-type: none"> <li>▪ Bacterial Isolation and Identification</li> <li>▪ DNA/RNA extraction</li> <li>▪ PCR /qPCR</li> <li>▪ Protein purification and Western blot</li> <li>▪ Gene cloning</li> <li>▪ DNA Fingerprinting (PFGE/MLST)</li> </ul> <p><b>Bioinformatics</b></p> <ul style="list-style-type: none"> <li>▪ Strategic design of PCR primers</li> <li>▪ In-silico analysis of DNA sequence</li> <li>▪ Next-Generation Sequencing Analysis (Variant, SNP Calling, Phylogenetic Analysis)</li> <li>▪ Experience in software such as DNA-STAR, Snap Gene, and Bioedit. PAUP etc.</li> <li>▪ Evolution and Phylogenetic Analysis (Bayesian)</li> <li>▪ Molecular Docking (Schrödinger)</li> <li>▪ R- Studio</li> </ul>

**MEMBERSHIP TO LEARNED SOCIETIES**

- Frontline Foundation USA, Member
- British Society for Antimicrobial Chemotherapy, (Member)
- Incharge ASM (USA) Student Chapter, UAF.
- Pakistan Biological Safety Association, (Member)
- Pakistan Veterinary Medical Council, (Member)
- Member UVAS Alumni, (Member)

Serving As **Reviewer** of **Peer Reviewed Journals**

- Frontiers In Microbiology
- Springer Nature
- Microbial Pathogenesis
- Antibiotics
- Pathogen's
- Pakistan Veterinary Journal
- Int. Journal of Agriculture and Biology

Sr.No	STUDENTS	RESEARCH PROJECTS MPhil/PhD : AS SUPERVISOR	STATUS
1	<b>Faiqa Tabassum</b> (PhD Scholar)	MOLECULAR EPIDEMIOLOGY OF HEMOLYSINS PRODUCING <b>STAPHYLOCOCCUS AUREUS</b> AT HUMAN-ANIMAL-ENVIRONMENTAL INTERFACE	Research completed (Thesis Writing)

2	<b>Nasrullah</b>	ISOLATION AND MOLECULAR CHARACTERIZATION OF MILK BORNE BACTERIAL PATHOGENS FROM RAW MILK OF <i>CAMELUS DROMEDARIUS</i>	Graduated 2025
3	<b>Maha Javed</b>	DETECTION AND MOLECULAR CHARACTERIZATION OF <b><i>STAPHYLOCOCCUS AUREUS</i></b> BIOFILM AND AMR POTENTIAL THROUGH SURFACE ENHANCED RAMAN SPECTROSCOPY	Graduated 2025
4	<b>Shehroz Sarfaraz</b> (MPhil Scholar)	MOLECULAR CHARACTERIZATION, ANTIMICROBIAL RESISTANCE PROFILING, AND ASSESSMENT OF BIOFILM-PRODUCING POTENTIAL OF <b><i>CLOSTRIDIUM PERFRINGENS</i></b> TYPE A	Graduated 2024
5	<b>Edah Nayab Victor</b> (MPhil Scholar)	MOLECULAR CHARACTERIZATION, ANTIMICROBIAL PROFILING, AND BIOFILM FORMATION FROM <b><i>PSEUDOMONAS AERUGINOSA</i></b>	Graduated 2024
6	<b>Aimen Majeed</b> (MPhil Scholar)	MOLECULAR CHARACTERIZATION OF ESBL-PRODUCING <b><i>KLEBSIELLA PNEUMONIAE</i></b> ISOLATED FROM A URINE SAMPLE	Graduated 2024
7	<b>Hina Khurshid</b> (MPhil Scholar)	IDENTIFICATION AND MOLECULAR INVESTIGATION OF SHIGA TOXIN-PRODUCING <b><i>ESCHERICHIA COLI</i></b> ALONG ANTIMICROBIAL RESISTANCE PROFILE FROM HUMAN URINARY TRACT INFECTION	Graduated 2024
8	<b>Ammara Naeem</b> (MPhil Scholar)	ISOLATION AND MOLECULAR CHARACTERIZATIONS OF <b><i>STAPHYLOCOCCUS AUREUS</i></b> FROM THE NASAL CAVITY OF CATS AND DOGS AND IT'S ANTIBIOTIC SUSCEPTIBILITY PROFILE	Graduated 2024
9	<b>Rabia Tahir</b> (MPhil )	ISOLATION AND MOLECULAR IDENTIFICATION OF ANTIMICROBIAL RESISTANCE GENES IN <b><i>ESCHERICHIA COLI</i></b> ISOLATED FROM <i>PANTHERA LEO</i>	Graduated 2023
10	<b>Shamas Ara</b> (MPhil)	DETECTION OF ANTIMICROBIAL RESISTANCE AND RESISTANT GENE IN FAECAL <b><i>ESCHERICHIA COLI</i></b> ISOLATES FROM CAPTIVE DEER	Graduated 2023

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#### Workshops/training Convened/Organized

- **Invited Speaker** for “**Scientific Writing and Publishing**” at Lanzhou Veterinary Research Institute, Lanzhou, China **02-Sep-2024**
- **Focal Person** One Day International Workshop on “Computer Aided Development of Antimicrobial Agents” **28-Nov 2023** in Collaboration with HEVTTC, China.
- **The Organizer** Two Days Workshop on “Primer Designing and Phylogenetic Analysis and its Application in Life Science” **25-26 Oct 2023**, UVAS Lahore, Pakistan.
- Nominated for the National Faculty Development Program (NEDP) for Newly Inducted Faculty Members by Higher Education Commission, Pakistan **20 Feb 2023- 10 Mar 2023**.
- Two Days Workshop on Effective Pedagogical Strategies for Lecturers and Assistant Professors (Master Trainer Series) .**17-18-Nov-2022**
- **Organized** a One-day Workshop on Primer Designing, PCR Optimization, Phylogenetic Analysis, and Its Application in Biomedical fields funded by **EFS-USDA 24-Aug-2022** at the Institute of Microbiology University of Agriculture Pakistan.

- **Guest Speaker** in Summer School from **6-19 June 2022** at Kazakh National Agrarian University, Kazakhstan.
- **Guest Speaker** in Winter School from **15-27 February 2021** at Kazakh National Agrarian University, Kazakhstan.
- **Resource Person** One-Day Workshop on Understanding Phylogenetic Analysis and its Interpretation **20-Feb 2020** CVAS, Jhang, Pakistan.
- **Resource Person** Two-Day Workshop on Understanding Phylogenetic Analysis and its Interpretation **11-12 Feb 2020** UVAS, Lahore Pakistan
- Nominated as **Curator of PubMLST** scheme for *Clostridium perfringens* (**Since January 2019**) <https://pubmlst.org/cperfringens/>
- **Invited speaker** at International Conference on “*Trans-Boundary Diseases of Veterinary and Public Health* **4<sup>th</sup> to 6<sup>th</sup> October 2018**, UVAS, Lahore, Pakistan.
- Chinese Government Scholarship (CSC) Winner from **2016 –2020**
- Won a scholarship of 1000 USD from University of Idaho Center for Health in the Human Ecosystem (CHHE) in recognition of outstanding application & exemplary work in my field (**May 2018**)

<b>Courses Taught to: DVM/ BS(H )Micro/ BS(H) HND, BS(H) FST</b>	
<b>Undergraduates</b>	<b>Postgraduates</b>
i. MB-306 Introduction to Molecular Biology	i. MICRO-702 Advanced Bacteriology and Mycology (Old Scheme)
ii. MICRO-302 Introduction to Veterinary Microbiology	ii. MICRO-702 Cellular and Molecular Immunology
iii. MICRO-402 Introduction to Veterinary Bacteriology and Mycology	iii. MICRO-704 Infectious Diseases and One Health
iv. MB-302 Microbial Physiology and Metabolism	iv. MICRO-706 Microbial Physiology and Virulence
v. MB-508 Community Health and Hygiene	v. MICRO-709 Public Health Microbiology
vi. MB-507 Food and Dairy Microbiology	vi. MICRO-705 Microbial Pathogenesis and Virulence
vii. MB-406 Genetic Engineering and Microbial Biotechnology	vii. MICRO-700 Introductory Microbiology
viii. MB-503 Antimicrobial Resistance and Infection Control	viii. MICRO-711 Environmental Microbiology
ix. MB-505 One Health	
x. MB-410 Introduction to Microbial Genetics	
xi. MB-510 Immunodiagnostics	
xii. MB-511 Computational Biology	
xiii. Micro-402 General Veterinary Bacteriology and Mycology	

### **CONFERENCES/WORKSHOPS ATTENDED**

- Hands-on training on the *Latest Bioinformatics Tools & Technologies*, Department of Bioinformatics and Computational Biology Virtual University of Pakistan **October 08-09,2018**
- International Training workshop on traditional Chinese Veterinary Medicine & Techniques Lanzhou, **China.2017**

- International Training Workshop on Major Transboundary Animal Diseases Diagnosis Technology, (LVR)I, Lanzhou, **China.2017**
- International Seminar on “*Emerging pathogens and BSL III Facility*” organized by The Pirbright Institute UK and University of Veterinary and Animal Sciences Lahore Pakistan, **October 25, 2016**
- Master Trainer program for “*Laboratory biosafety and risk management*” September 7-11, 2015, at the Department of Microbiology, University of Veterinary and Animal Sciences (UVAS), **Lahore Pakistan.**

### **Abstract Published:**

#### **2<sup>nd</sup> International Brain and Biomedicine Conference (IBCC-2024)**

1. *Clostridium perfringens* type A Isolated from Poultry Origin: Insights into Prevalence, Molecular Characterization, and Antimicrobial Resistance Profiling Muhammad Shehroz Sarfraz , Sultan Ali , Rizwan Aslam , Mavra Choudhary, Saad Zafar, Muhammad Shahid Mahmood<sup>1</sup> , Edah Nayab Victor , Faisal Masoud<sup>1</sup> , **Muhammad Umar Zafar Khan\***
2. UTI infection caused by Escherichia coli isolated from Humans: Molecular characterization of Shiga Toxin-Producing *Escherichia coli*, and Antimicrobial resistance profiling Hina Khurshid\*, Sultan Ali, Rizwan Aslam, Muhammad Shahid Mahmood<sup>1</sup>, Farah Naz, **M. Umar Zafar Khan<sup>1</sup>**
3. Occurrence of Multi-Drug Resistance *Pseudomonas aeruginosa* from Dermal Infection in Faisalabad Sadia Yousuf, Rimsha Siddique, Mavra Choudhary, Noor Fatima, Tehreem Rana<sup>1</sup>, **M Umar Zafar Khan**, Muhammad Shahid Mahmood, Rizwan Aslam, Sultan Ali\*
4. Antibiotic Resistance Profiling of *Campylobacter jejuni* isolated from cattle in District Faisalabad, Punjab Mavra Choudhary, Aqsa Akram, Noor Fatima, **Muhammad Umar Zafar Khan**, Muhammad Naveed Anwar, Muhammad Sohail Sajid, Muhammad Shahid Mahmood, Rizwan Aslam, Sultan Ali\*
5. Molecular Characterization of Shiga-Toxigenic *Escherichia Coli* O157 in Goat and Camel Milk Javeria Mumtaz, Ahmed Aniq Raza, Rahmeen Qamar, **Umar Zafar Khan**, Muhammad Shahid Mahmood, Rizwan Aslam, Muhammad Naveed Anwar, Sultan Ali
6. Preparation And Evaluation Of Oil-Adjuvanted Inactivated Bivalent Vaccine Against Avian Influenza Virus (AIV) And Newcastle Disease Virus (NDV) Areeba Javaid, Hafsa, Zahida Riaz, Sultan Ali, Muhammad Naveed Anwar, **Muhammad Umar Zafar Khan**, Muhammad Asim, Muhamad Shahid Mahmood and Faisal Masoud **IPEX,2024.**
7. Antimicrobial Resistance Profiling Of Biofilm Forming *Clostridium Perfringens* Type A Isolates From Broiler Birds: A One Health Concern Muhammad Shehroz Sarfraz, Sultan Ali<sup>1</sup>, Muhammad Saqib, Muhammad Shahid Mahmood, Shumaila Khalid, Tahir Munir, **Muhammad Umar Zafar Khan\* (IPEX 2024)**
8. Development And Evaluation Of Chitosan Nanoparticles And Montanide As Vaccine Adjuvant For Inactivated Newcastle Disease Vaccine Zahida Riaz<sup>1</sup>, Hafsa, Sultan Ali, Muhammad Naveed Anwar, **Muhammad Umar Zafar Khan**, Muhamad Shahid Mahmood and Faisal Masoud. **(IPEX, 2024)**

### **PUBLICATIONS**

1. Muneeb, M., Khan, E. U., Ali, M., Haque, M. N. U., **Khan, M. U. Z.**, & Ahmad, S. **(2025).** Comparative Effects of Antibiotic and Antimicrobial Peptide on Growth Performance, Gut

Morphology, Intestinal Lesion Score, Ileal Microbial Counts, and Immune Status in Broilers Challenged with Necrotic Enteritis. *Probiotics and Antimicrobial Proteins*, 1-15. (Q1)

2. Humza, M., **Zafar Khan, M. U.**, Sholkamy, E. N., Basit, A., Iqbal, B., Anwar, M. N., & Liu, Y. (2025). Inhibitory activity studies of the detoxifying bacterial strain "Lactobacillus brevis 121A" against *Penicillium verrucosum* growth and Ochratoxin A yield. *Journal of Taibah University for Science*, 19(1), 2242632. (2025)
3. Nisar Khan, et al. (2025). Possible role of companion birds in one health implication of multidrug-resistant *Pseudomonas aeruginosa* isolated from feces of captive wild birds, *Journal of Wildlife and Biodiversity*, 9(1), 262-279. DOI: <https://doi.org/10.5281/zenodo.14634661>
4. Yang S, **Khan MUZ** [1<sup>st</sup> Equal], Pan S, Zhang X, Fang Y, Gai W, Zhang J and Liu Y, 2024. Rapid detection of *Lawsonia intracellularis* by a quantitative PCR based on immunomagnetic beads. *Pak Vet J.* <http://dx.doi.org/10.29261/pakvetj/2024.209> (Q1)
5. Article: Durrani RH, Sheikh AA, Humza, M, Ashraf S, Kokab A, Mahmood T and Khan **MUZ**, 2024. Evaluation of antibiotic resistance profile and multiple antibiotic resistance index in avian adapted *Salmonella enterica* serovar Gallinarum isolates. *Pak Vet J.* <http://dx.doi.org/10.29261/pakvetj/2024.253> (Q1)
6. **Zafar Khan MU**, Khalid S, Humza M, Yang S, Alvi MA, Munir T, Ahmad W, Iqbal MZ, Tahir MF, Liu Y and Zhang J (2022) Infection Dynamics of *Clostridium perfringens* Fingerprinting in Buffalo and Cattle of Punjab Province, Pakistan. *Front. Vet. Sci.* 9:762449. doi: 10.3389/fvets.2022.762449. (Q1)
7. **Khan, M. U. Z.**, Humza, M., Yang, S., Iqbal, M. Z., Xu, X., & Cai, J. (2021). Evaluation and optimization of antibiotics resistance profile against *Clostridium perfringens* from buffalo and cattle in Pakistan. *Antibiotics*, 10(1), 59. . (Q1)
8. **Khan, M. U. Z.**, Liu, B., Yang, S., Xu, X., Wang, Y., & Cai, J. (2021). Genetic diversity of *Clostridium perfringens* strains isolated from broiler chickens revealed by PFGE analysis in China and Pakistan. *Pakistan Veterinary Journal*, 41(1). . (Q1)
9. **Khan, M.U.Z.**; Humza, M.; Yang, S.; Alvi, M.A.; Iqbal, M.Z.; Zain-ul-Fatima, H.; Khalid, S.; Munir, T.; Cai, J. Occurrence and Toxicogenetic Profiling of *Clostridium perfringens* in Buffalo and Cattle: An Update from Pakistan. *Toxins* 2021, 13, 212. <https://doi.org/10.3390/toxins13030212> . (Q1)
10. Yang, S.; **Zafar Khan, M. U** [1<sup>st</sup> Equal]. Liu, B.; Humza, M.; Yin, S.; Cai, J. In Vitro Analysis of TGF- $\beta$  Signaling Modulation of Porcine Alveolar Macrophages in Porcine Circovirus Type 2b Infection. *Vet. Sci.* 2022, 9, 101. <https://doi.org/10.3390/vetsci9030101> (Q2)
11. Yanhua Wang, **Muhammad Umar Zafar Khan**, Xiao Xu, and Jianping Cai\* *Clostridium perfringens* VirS/VirR two-component system regulation mechanism <http://kns.cnki.net/kcms/detail/35.1284.R.20190722.1145.004.html>,
12. Xiao Xu, Yanhua Wang, **Muhammad Umar Zafar Khan**, Jianping Cai\* Development of an RPA diagnostic method for *Gallus gallus* for *Clostridium perfringens*. <http://www.cqvip.com/QK/93994A/201912/7100636195.html>

13. Moon, A.; Sun, Y.; Wang, Y.; Huang, J.; **Zafar Khan, M.U.**; Qiu, H.-J. Lactic Acid Bacteria as Mucosal Immunity Enhancers and Antivirals through Oral Delivery. *Appl. Microbiol.* **2022**, *2*, 837-854. <https://doi.org/10.3390/applmicrobiol2040064> (Q2)
14. Alvi, M.A., Ali, R.M.A., Li, L., Saqib, M., Qamar, W., Hassan, A., Ghafoor, M., Rahman, S.U., **Khan, M.U.Z.**, Fu, B.Q. and Liu, Y., 2023. Phylogeny and population structure of *Echinococcus granulosis* (sensu stricto) based on full-length cytb-nad2-atp6 mitochondrial genes—First report from Sialkot District of Pakistan. *Molecular and Biochemical Parasitology*, *253*, p.111542 (Q1)
15. Sheikh M, Khan HM, **Zafar Khan MU**, Sharif A. Formulation, Evaluation and Optimization of Antimicrobial Potential of Herbal Cream Containing *Allium sativum*, *Moringa oleifera* Extracts and *Thymus vulgaris* Oil. *Curr Pharm Biotechnol.* 2023 May 4. doi: 10.2174/1389201024666230504124838. Epub ahead of print. PMID: 37143275 (Q2)
16. Zhang, J.; Hou, Q.; Ma, W.; Chen, D.; Zhang, W.; Wubshet, A.K.; Ding, Y.; Li, M.; Li, Q.; Chen, J.; Dai, J.; Wu, G.; Zhang, Z.; Zaberezhny, A.D.; Pejsak, Z.; Tarasiuk, **K.**; **Zafar Khan, M.U.**; Wang, Y.; He, J.; Liu, Y. A Naked-Eye Visual Reverse Transcription Loop-Mediated Isothermal Amplification with Sharp Color Changes for Potential Pen-Side Test of Foot-and-Mouth Disease Virus. *Viruses* **2022**, *14*, 1982. <https://doi.org/10.3390/v14091982> (Q1)
17. Yang, Liu, Yin, Shang, Zhang, **Muhammad Umar Zafar Khan**, Cai. (2019). *Porcine Circovirus* Type 2 Induces Single Immunoglobulin Interleukin-1 Related Receptor (SIGIRR) Down-regulation to Promote Interleukin-1 $\beta$  Upregulation in Porcine Alveolar Macrophage. *Viruses*, *11*(11),1021. doi:10.3390/v11111021 (Q1)
18. Alvi MA, Ohiolei JA, Saqib M, Tayyab MH, **Zafar Khan MU**, Li L, Aqib AI, Hassan A, Alvi AA, Qamar W, Fu B-Q, Yan H-B and Jia W-Z (2020) First Report on Molecular Characterization of *Taenia multiceps* Isolates from Sheep and Goats in Faisalabad, Pakistan. *Front. Vet. Sci.* *7*:594599. doi:10.3389/fvets.2020.594599 (Q1)
19. Yang, S., Li, L., Yin, S., Shang, Y., Khan, **M. U. Z.**, He, X.... Cai\*, J. (2018). Single-domain antibodies as promising experimental tools in imaging and isolation of porcine epidemic diarrhea virus. *Applied Microbiology and Biotechnology*.doi:10.1007/s00253-018-9324-7 (Q1)
20. Yang, S., Yin, S., Shang, Y., Liu, B., Yuan, L., **Zafar Khan, M. U.** Cai, J. (2017). Phylogenetic and genetic variation analyses of *porcine circovirus* type 2 isolated from China. *Transboundary and Emerging Diseases*, *65*(2), e383–e392. doi:10.1111/tbed.12768 (Q1)
21. Hasnain, Mirza J., **Muhammad UZ Khan**, Khizra Maqsood, Tahera Aslam, Masroor E. Babar, Shunli Yang, Huma Sohail, Muhammad T. Pervez, and Jianping Cai. "An Overview of Pathways Network Analysis of Pendred Syndromic Genes: Pathways Network Analysis of Pendred Syndromic Genes." *Proceedings of the Pakistan Academy of Sciences: B. Life and Environmental Sciences* *57*, no. 2 (2020): 15-26.(Q4)
22. Sadiq S, Ahmad MUD, Chaudhry M, Akbar H, Mushtaq MH, Shehzad F, Hassan S, **Khan MUZ**, 2021. Molecular epidemiology of zoonotic *Salmonella* Enteritidis isolated from poultry and human sources by multilocus sequence typing. *Pak Vet J*, *41*(2): 264-268. <http://dx.doi.org/10.29261/pakvetj/2020.103> (Q1)

23. Shumaila Khalid, Waqar Ahmad, **Muhammad Umar Zafar Khan\*\***, Muhammad Humza Muti-ur-Rehman Khan, Qmar-un-Nisa, Tahir Munir Antibacterial Effect of Platelet-Rich Plasma (PRP) Against Bubaline Mastitis as a Novel Alternative. (**Pathogens, Under Review**)
24. MS Sarfaraz, Zafar Khan MU, Khalid S, Humza M, Yang S, Alvi MA, Munir T, Ahmad W, Iqbal MZ, Tahir MF, Liu Y and Zhang J **Zafar Khan MU\***, A systematic review and meta-analysis on prevalence and antimicrobial resistance profile of *Campylobacter jejuni* isolated from food and food-related materials in Pakistan (2011–2023) (**Int Journal of Food Microbiology**)
25. Muhammad Shehroz Sarfraz, Sultan Ali, Muhammad Saqib, Muhammad Shahid Mahmood, **Muhammad Umar Zafar Khan\*** Antimicrobial Resistance Profiling of Biofilm Forming *Clostridium perfringens* type A Isolates from broiler birds: A one Health Concern (Submitted Veterinary Quarterly)

## **Book Chapters**

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1. Nanotechnology: A synergistic approach for enhanced therapeutic outcomes in alternative medicine. Sarwar F, Mahmood A, Sarwar A, Rana TA, Batool N, Mahmood S, Naz G, Ali A, **Khan MUZ** and Aslam RS, **2024**. Complementary and Alternative Medicine: Nanotechnology-I. Unique Scientific Publishers, Faisalabad, Pakistan, pp: 153-163. <https://doi.org/10.47278/book.CAM/2024.062>
2. ***Clostridium difficile* Infection (CDI) in Human-Animal Interface: A One Health Perspective 2023** Saad Zafar<sup>1</sup>, **Muhammad Umar Zafar Khan<sup>1</sup>**, Muhammad Shahid Mahmood<sup>1</sup>, Rao Zahid Abbas<sup>2</sup>, Muhammad Numan Akram<sup>3</sup>, Muhammad Naveed Anwar<sup>1</sup>, Muhammad Imran Arshad<sup>1</sup>, Rizwan Aslam<sup>1</sup>, Mavra Chouhdary<sup>1</sup>, Noor Fatima<sup>1</sup> and Sultan Ali<sup>1\*</sup> One Health Tri aid Unique Scientific Publishers.
3. **Bacterial Biofilms and their Regulatory Approaches 2023** Muhammad Adnan Liaqat<sup>1</sup>, Muhammad Shahid Mahmood<sup>1</sup>, Muhammad Numan Akram<sup>2</sup>, Muhammad Imran Arshad<sup>1</sup>, Rizwan Aslam<sup>1</sup>, Muhammad Kasib Khan<sup>3</sup>, **Muhammad Umar Zafar Khan<sup>1</sup>**, Noor Fatima<sup>1</sup> and Sultan Ali<sup>1\*</sup> \* One Health Tri aid Unique Scientific Publishers.
4. **Antimicrobial Residues and Food of Animal Origin 2023** Noor Fatima<sup>1</sup>, Muhammad Shahid Mahmood<sup>1</sup>, Muhammad Naveed Anwar<sup>1</sup>, Rizwan Aslam<sup>1</sup>, Muhammad Imran Arshad<sup>1</sup>, Zeeshan Nawaz<sup>2</sup>, **Muhammad Umar Zafar Khan<sup>1</sup>**, Mudassir Ali<sup>3</sup>, Mavra Chouhdary<sup>1</sup> and Sultan Ali<sup>1\*</sup> \* One Health Tri aid Unique Scientific Publishers.

## **Manuals: (As 1<sup>st</sup> & Co-Author)**

5. [Computational Biology: A beginner's guideline for exploring exquisiteness of dry lab realm \( Hands-on Training Manual\)](#)
6. A Concise Laboratory Manual of Systematic Bacteriology (for UGS), **2<sup>nd</sup> Edition (Published)**
7. Practical Manual of Veterinary Bacteriology and its Field Application (for UGS) **1<sup>st</sup> Edition, (In Press)**
8. Practical Manual on Molecular Biology for UGS **1<sup>st</sup> Edition (In press)**

## **Other scholarly activities**

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### **(i) Editorial/Advisory/scholarly work:**

1. HEC-approved Ph.D. supervisor
2. Editor (Technical) Veterinary Observer Monthly
3. Tutor AN Qasmi *w.e.f.* 15-09-2022 till to-date
4. Reviewer Microbial Pathogenesis (Elsevier) (Q1)
5. Reviewer International Journal of Agriculture and Biology (IJAB)
6. Reviewer Pakistan Veterinary Journal (Q1)
7. Focal Person of Office of Research and Commercialization (ORIC) UAF

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**Administrative work, co-curricular and extracurricular activities, etc.**

1. Assistant Superintendent (Sir Syed Hall UAF (April 2022- to date)
2. Member Quality Enhancement Cell (QEC), UAF (Aug-2022-to-date)
3. Internships Incharge BS(Hons) Microbiology, Institute of Microbiology, UAF (Jul-2022-to-date)
4. Co-Advisor Undergraduate students Institute of Microbiology, UAF (Jul-2022-to-date)
5. Co-Advisor Undergraduate students DVM 7<sup>th</sup> Semester FVS UAF (Jul-2022-to-date)
6. Member, Board of Studies, Clinical Medicine and Surgery, UAF (Sep-2022-to-date)
7. Member Quality Enhancement Cell (QEC) UAF. (Oct-2022-to date)

**LANGUAGE SKILLS**

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1) English

2) Arabic

3) Chinese

4) Urdu

**References:** Will be furnished on demand.