MUHAMMAD QAMAR SAEED

PRESENT ADDRESS: Department of Microbiology and Molecular Genetics, Bahauddin Zakariya University, Multan, Pakistan

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CAREER OBJECTIVES

- To involve myself in research work related to understanding of infection biology of important viruses and its application in the field of gene therapy of genetic disorders and industrial scale bioproduction
- To investigate patterns and molecular basis of antimicrobial resistance
- To be an accomplished teacher at university level with ability to motivate students by invoking the vision and excitement for understanding and applying new knowledge for betterment of society.
- To involve in the promotion of scientific culture through co-curricular activities designed to inculcate passion for knowledge

CURRENT POSITION

(2013 ONWARD) ASSISTANT PROFESSOR

Institution: Department of Microbiology and Molecular Genetics, BZ University Multan, Pakistan; Research Theme: I am currently developing a microbiology platform to focus on the emerging challenge of antimicrobial resistance and applications of bacteriophages in infection control.

ACADEMIC QUALIFICATION

(2009-2013) PHD (VECTOROLOGY)

Doctoral School: Brain Cognition, and Behavior, Sorbonne Université; Research Topic: Studies on Impairment, Improvement and Control of Lentiviral Vectors Integration

(2008-2009) MASTER 2 RESEARCH (TISSUE, CELL AND GENE BASED BIOTEHRAPIES)

Faculty of Medicine, Université Paris-Est Créteil; Research Topics: Use of Synthetic Zinc Finger Protein Tethers to Target Lentiviral Vector Integration on Specific Locus (Master Research); Development and Characterization of Corticotropin Releasing Hormone

Receptor-2 Knock-out Cell Line by RNAi (Internship); Extraction of DNA Binding Domain of meCP2 Protein and its characterization (Industry Project)

(2007-2008) FRENCH LANGUAGE DIPLOMA

Alliance Françaises du Lahore Pakistan; DILF, DELF A and B; Institut Catholique de Paris; Diplôme Intermédiaire en Langue Française

(2002-2006) BECHALOR OF SCIENCE (ZOOLOGY)

Center for Undergraduate Studies, Bahauddin Zakariya University Multan, Pakistan; Research Topic: Blood Composition of Blue Rock Pigeon (*Columba livia*) and Indian Bullfrog (*Rana Tigrina*)

(2000-2002) F. SC. (PRE-MEDICAL)

Govt. College Bosan Road Multan, Pakistan

(1997-1999) MATRIC (SCIENCE)

Govt. High School Kabirwala (Distt. Khanewal), Pakistan

AWARDS AND FELLOWSHIPS

- Merit Scholarship from Distt. Khanewal on the Basis of Matriculation with Distinction
- Award of HEC Scholarship to Pursue Master and Doctoral Studies in France
- Award of French Ministerial Scholarship for PhD Studies in France

RESEARCH SKILLS AND EXPERTISE

HIV BIOLOGY: Biochemistry and Biology of HIV Proteins and their Cellular Partners, Development of Mutant HIV Viruses and their Characterization, In Vitro and In Vivo Characterization of HIV Enzyme Integrase and its Mutants

LENTIVIRAL VECTORS: Design Optimization to Achieve Better Efficiency of Transduction, Development and Characterization of Non-Integrative Vectors for Safer Gene Therapy in Quiescent Cells, Production of Large Vector Stocks for Gene Therapy Applications (Including Adeno-Associated Virus based Vectors), Development of Autoguided HIV Vectors Carrying Instructions within on where to Integrate (Ongoing Work)

PROTEIN SCIENCE: Design and Chemical/Biological Characterization of DNA Binding Proteins, Design and Characterization of Modular Multifunctional Fusion Proteins, Species Specific Codon Optimization for Better Expression of Foreign Proteins in Prokaryotic and Eukaryotic Expression Systems, Protein-Protein Interactions Studies, Western Blotting

RECOMBINANT DNA TECHNOLOGY: Working knowledge of Ubiquitous and Cell Specific Promoter Systems for Expression of Transgene, DNA/Gene cloning in Prokaryotic and Eukaryotic Expression Plasmids and in Viral Vectors, Use of Various DNA Manipulation Enzymes (Restriction, Phosphorylation, Dephosphorylation, Ligation Enzymes etcetera), Gene Analysis and Designing Softwares such as Serial Cloner™, ApmlifX™, Vector NTI™ etcetera

BACTERIAL AND CELL MAMMALIAN CULTURE: Large Scale Plasmid Production, Production and Maintenance of Transformation Competent Bacteria, Bacterial Culture on Liquid and Solid Media, Selection of Transformed bacteria, Sterile Maintenance and Propagation of Mammalian Cell Lines, Production, Selection and Maintenance of Engineered Cell Lines for Experimental Purposes, Immunocytochemistry, Fluorescence and Confocal Microscopy

BACTERIOPHAGES: Isolation, Enrichment and Characterization of bacterial viruses on the basis of infection category

MOLECULAR BIOLOGY TECHNIQUES: Polyacrylamide Gel Electrophoresis, Agarose Gel Electrophoresis, Determination of Protein-DNA Binding Affinities by Using Gel Shift Assays, Polymerase Chain Reaction (PCR), Quantitative-Realtime PCR, DNA/RNA/Protein Extraction, Primer Designing for Classical and Quantitative PCR

STRUCTURAL BIOLOGY: Execution of high-performance molecular dynamics simulations and molecular modeling using GROMACS to analyze protein-ligand binding and enzyme stability. Application of structural docking and in silico modeling toolkits to forecast gain-of-function variations and map evolutionary resistance pathways. Integration of structural insights with empirical validation tools including gel shift assays, Serial Cloner, AmplifX, and Vector NTI. Structural design and optimization of modular multi-functional fusion proteins, DNA-binding proteins, and species-specific codon systems.

PUBLICATIONS

No.	Paper Title & Authors	Year	Impact Factor	Quartile
First/Corresponding Author Publications				
1	**Saeed, M.Q.**, Dufour, N., Bartholmae, C., et al. Comparison Between Several Integrase-defective Lentiviral Vectors Reveals Increased Integration of an HIV Vector Bearing a D167H Mutant. *Mol. Ther. Nucleic Acids* 3, e213.	2014	7.0	Q1
2	Gohar, M., Ali, H.A., **Saeed, M.Q.** Use of lytic bacteriophages in controlling multi drug resistant staphylococcus aureus. *J. Pak. Med. Assoc.* 68, 2.	2018	0.8	Q4
3	Gohar, M., Mustafa, A., Aziz, J., Rehman, H.-U., Maryam, R., Fatima, Z., Akbar, A., **Saeed, M.Q.** Controlled-shed poultry farming practices in Pakistan select for antibiotic resistant Escherichia coli. *J. Glob. Antimicrob. Resist.* 12, 24–25.	2018	3.8	Q2
4	Hussain, A., Kousar, S., Ullah, I., Zulfiqar, A., Ali, H.A., Manzoor, A., Aziz, A., Javaid, A., Aziz, M., Khaliq, B., Nazir, H., Khan, A.A., Akrem, A., **Saeed, M.Q.** Investigations on Acinetophage, QAB 3.4, Targeting Extensively	2021	2.9	Q2

	Drug-Resistant Acinetobacter baumannii Isolates. *Infect. Drug Resist.* 14, 4261–4269.			
5	Kousar, S., Rehman, N., Javed, A., Hussain, A., Naeem, M., Masood, S., Ali, H.A., Manzoor, A., Khan, A.A., Akrem, A., Iqbal, F., Zulfiqar, A., Jamshaid, M.B., Waqas, M., Waseem, A., **Saeed, M.Q.** Intensive Poultry Farming Practices Influence Antibiotic Resistance Profiles in Pseudomonas aeruginosa Inhabiting Nearby Soils. *Infect. Drug Resist.* 14, 4511–4516.	2021	2.9	Q2
6	Hussain, A., Ullah, I., **Saeed, M.Q.** Animal model testing for efficacy and adverse effects of bacteriophages against Acinetobacter baumannii. *Journal of Basic Microbiology* 62, 1440–1445.	2022	3.1	Q3
7	**Saeed, M.Q.**, Aziz, M., Afzal, R.K., Hussain, A., Manzoor, H., Rasul, S., Ruby, T., Akrem, A., Masud, S., Arshad, A., Latif, A., Yousif, M., Aali, H., Fatima, M., Bhutta, M.M., Khan, A.A. Antibiograms of Gut Flora of Poultry Farms Workers Reveal Higher Resistance Levels as Compared to Non-Workers. *Infect Drug Resist* 15, 7699–7705.	2022	2.9	Q2
8	Hussain, A., Khan, I.U., **Muhammad Qamar Saeed**. Frequency and Antimicrobial Susceptibility Profile of Acinetobacter baumannii Isolated at a Tertiary Care Diagnostic Facility. *PAFMJ* 73, 1773–1776.	2023	0.2	Q4
Co-Authored Publications				
9	Khan, B.Y.A., Ali, F., Saeed, M.Q., Asghar, M., Iqbal, F. A Study on Serum Biochemistry and Hematological Profiling of Blue Rock Pigeon (Columba Livia) in Multan (Punjab: Pakistan). *Pak. J. Zool.* 43, 1012–1014.	2011	0.6	Q4
10	Khan, B.Y.A., Saeed, M.Q., Ali, F., Iqbal, F. Effect of gender on hematological and serum biochemical profile of the Indian bullfrog, Rana tigrina from Multan (Punjab: Pakistan). *Asia Pacific Journal of Tropical Biomedicine.* 1, 1-3	2012	1.7	Q3
11	Munir, A., Iqbal, S., Khaliq, B., Saeed, Q., Hussain, S., Shah, K.H., Ahmad, F., Mehmood, Sohaib, Ali, Z., Munawar, A., **Saeed, M.Q.**, Mehmood, Seema, Ashraf, M.Y., Akrem, A. In Silico Studies and Functional Characterization of a Napin Protein from Seeds of Brassica juncea. *Int. J. Agric. Biol.* 22, 8.	2019	0.9	Q4
12	Rafiq, K., Ahmad, K., Ahmad, N., Gohar, M., Shehzad, M.A., **Saeed, M.Q.** Determination of Qnr allele frequencies in Fluoroquinolone resistant Pseudomonas aeruginosa isolated from burn wounds. *J. Pak. Med. Assoc.* 69, 250–252.	2019	0.8	Q4
13	Nazir, H., Aziz, M., Mirani, Z.A., Sheikh, A.S., **Saeed, M.Q.**, Khan, A.A., Ruby, T., Rauf, N. Correlation between antibiotic resistance and phylogenetic types among multidrug-resistant Escherichia coli isolated from urinary tract infections. *Iran. J. Basic Med. Sci.* 24, 400–407.	2021	2.2	Q3
14	Amir, A., Bibi, S., Nawaz, A., Ibrahim, A., Ashiq, M.N., **Saeed, M.Q.**, Hamza, M., Rasheed, H.M.Z., Islam, B. In vitro antibacterial response of ZnO-MgO nanocomposites at various compositions. *Int. J. Appl. Ceram.*	2021	1.8	Q3

	Technol. 18, 1417–1429.			
15	Khaliq, B., Abdalla, M., Mehmood, S., Saeed, A., Munawar, A., **Saeed, M.Q.**, Saeed, Q., Ibrahim, M., Ali, Z., Hussain, S., Eltayb, W.A., Betzel, C., Akrem, A. Comprehensive structural and functional characterization of a seed γ-thionin as a potent bioactive molecule against fungal pathogens and insect pests. *Curr Med Chem.*	2022	3.5	Q2
16	Saeed, A., Rafiq, Z., Imran, M., Saeed, Q., **Saeed, M.Q.**, Ali, Z., Iqbal, R.K., Hussain, S., Khaliq, B., Mehmood, S., Akrem, A. In-silico Studies Calculated a New Chitin Oligomer Binding Site Inside Vicilin: A Potent Antifungal and Insecticidal Agent. *Dose-Response* 20.	2022	2.5	Q3
17	Afzal, R.K., Ali, S., Ahmad, F., Salim, S., Hanif, W., **Saeed, M.Q.** Superadded Bacterial Infections in COVID–19 Patients; Antimicrobial Susceptibility and Association with Serological Markers. *PAFMJ* 73, 139–42.	2023	0.2	Q4
18	Kainat, N., Saeed, A., Ali, A., Khaliq, B., Mehmood, S., **Saeed, M.Q.**, Iqbal, R.K., Khalid, S., Akrem, A. In silico modeling and docking of salicylic acid revealing the sod like activity of an antimicrobial seed vicilin of Capsicum annuum L. var. Grossum. *PAK. J. BOT.* 55.	2023	0.8	Q4
19	Ahmad, S., Ali, K., Ahmad, K., Ruby, T., Majeed, H., **Saeed, M.Q.**, Awan, M.F., Ahmad, I., Farooq, M., Shahzad, M.I., Alamri, S., Khan, A.A. Chemical composition and antimicrobial study of Crossobamon orientalis body oil. *Heliyon* 10, e28225.	2024	3.6	Q1
20	Amouri, R.E., Ujan, J.A., Raza, A., Mushtaq, A., **Saeed, M.Q.**, Masud, S., Habib, S.S., Milošević, M., Al-Rejaie, S.S., Mohany, M. Sublethal Concentrations of Cadmium and Lead: Effects on Hemato-Biochemical Parameters and Tissue Accumulation in Wallagu attu. *Biol Trace Elem Res.*	2024	3.4	Q2
21	Habib, S.S., Fazio, F., Masud, S., Ujan, J.A., **Saeed, M.Q.**, Ullah, M., Khan, K., Khayyam, K., Mohany, M., Milošević, M., Al-Rejaie, S.S., Cravana, C. Analyzing the Impact of Pesticides on the Indus River: Contamination Levels in Water, Sediment, Fish, and Associated Human Health Risks. *Environ Geochem Health* 46.	2024	3.2	Q2
22	Habib, S.S., **Saeed, M.Q.**, Masud, S., Kesbiç, O.S., Ujan, J.A., Cravana, C., Al-Rejaie, S.S., Mohany, M., Fazio, F. Dietary Effect of Withania somnifera Root Powder on Growth, Hematobiochemical Parameters, Immunity, and Disease Resistance to Aeromonas hydrophila in Cyprinus carpio. *Aquaculture Nutrition* 2024.	2024	3.0	Q2
23	Amjad, R., Ruby, T., Ali, K., Asad, M., Imtiaz, A., Masood, S., **Saeed, M.Q.**, Arshad, M., Talib, S., Alvi, Q.A., Khan, A., Sharif, M.M. Exploring the effects of noise pollution on physiology and ptilochronology of birds. *PLOS ONE* 19, e0305091.	2024	2.9	Q1
24	Habib, S.S., Naz, S., **Saeed, M.Q.**, Ujan, J.A., Masud, S., Mushtaq, A., Ullah, M., Khan, K., Zahid, M., Al-Rejaie, S.S., Mohany, M. Assessment of heavy metal levels in polyculture fish farms and their aquatic ecosystems.	2024	3.2	Q2

Environ Geochem Health 46, 267.

25	Rind, K.H., Aslam, S., Memon, N.H., Raza, A., **Saeed, M.Q.**, Mushtaq, A., Ujan, J.A., Habib, S.F., Al-Rejaie, S.S., Mohany, M. Heavy Metal Concentrations in Water, Sediment, and Fish Species in Chashma Barrage, Indus River. *Biol Trace Elem Res.*	2024	3.4	Q2
26	Hashmi, M.A.H., Ullah, M.A., Ullah, M., Habib, S.S., Batool, A.I., Zahid, M., Khan, K., Shaheen, B., **Saeed, M.Q.**, Mohany, M. Assessment of Trace Elements and Fluoride Contamination in Kabul River: A Comparative Study Across Different Sites. *Fluoride* 58.	2025	0.8	Q4

PATENT

Lentiviral Vectors Having a Mutated Integrase Protein and Uses Thereof (WO/2015/040063)

CURRENT RESEARCH

Our current research sits at the critical intersection of computational structural biology and evolutionary forecasting to combat antimicrobial resistance. Utilizing advanced molecular modeling and high-performance molecular dynamics simulations via GROMACS, we characterize the structural dynamics of targeted beta-lactamases (such as BES-1 and SRT-1) from the opportunistic pathogen Serratia marcescens. By complexing these enzymes with various beta-lactamase inhibitors, our work identifies the most effective therapeutic candidates based on binding affinities and structural stability. Crucially, we are mapping potential gain-of-function mutation pathways, predicting the exact evolutionary trajectories these enzymes are likely to take to evade novel inhibitors to provide proactive insights for next-generation drug design.

SOFT SKILLS AND INTERESTS

- MS Word, MS Excel, MS PowerPoint
- Urdu and English Speech and Short Play Writing
- Knowledge of Languages:
  - Punjabi/Saraiki — Mother Tongues
  - Urdu — National Language
  - Engilsh — (Fluent)
  - French — (Working Use)
- Badminton, Table Tennis, Cricket are my Favorite Games