



Dr. Samrah Masud

PhD, infections and immunobiology (Cell and Molecular Biology)

Institute of Biology Leiden (IBL), Leiden University, Netherlands

Associate Professor of Zoology, Bahaudin Zakariya University Multan, Pakistan

http://www.bzu.edu.pk/v2_faculty.php?id=1028

(HEC, Pakistan approved research supervisor)

ORCID iD: <http://orcid.org/0000-0001-7037-0259>

https://scholar.google.com/scholar?start=10&q=samrah+masud&hl=en&as_sdt=0,5

Email: samrahmasud@bzu.edu.pk

Summary

I am a committed university teacher with an experience of twenty-one years. I believe that the growth and grooming of a young scholar is in teacher's hand. Universities provide this platform and a university teachers must put on a great effort to meet the futuristic requirements of this fast changing world.

Research Field Expertise and Interests

- Bacterial infections and disease
- Zebrafish infection models (*Salmonella* Typhimurium, *Mycobacterium marinum*, *Staphylococcus aureus*)
- Immunobiology, macrophages and neutrophil biology and responses to infections
- Bacterial secretion systems and their role in bacterial virulence to host
- Vertebrate, mammalian and non-mammalian immunity
- Autophagy and Lc3 associated phagocytosis in host defense
- Infections and cellular cascades controlling oxidative stress response

Research Skills and Laboratory Techniques

- RNA and DNA extraction from cells/ organism
- DNA Cloning
- Florescence Activated Cell Sorting (FACS)
- *Florescent In-Situ* hybridizations (FISH)
- Immunostaining
- RTPCR and qPCR

- Gel-Electrophoresis
- Light and florescent microscopy (Confocal)
- Transmission electron microscopy (TEM)
- CRISP Cas 9 technology
- Bacterial proliferation and microbiological protocols
- Micro-injection techniques (all infection routes: systemic, sub-cutaneous, brain)
- Animal housing and breeding techniques (rodents (mammalian) and fish (non-mammalian))
- Laboratory Animal Science Level C Diploma by Federation of Laboratory Animals in Science Associations (FELASA), Leiden University, Netherlands

Awards & Competitive Exams

- Silver medal: M.Sc. Zoology, Annual Exams (Session 1998-2000).
- Competitive Exam: Punjab Public service Commission (PPSC) 2002, for Punjab education department of Pakistan and secured Lectureship.
- Awarded with Higher Education Commission of Pakistan's (HEC) PhD scholarship, under Bahaudin Zakariya University's faculty development program
- HEC approved supervisor, HEC, Pakistan.

Teaching Experience

- 21 years (2003-till date), of University teaching, research experience
- (2013-2021): Bahaudin Zakariya University, Multan. Teaching BS (4-year), M.Sc, M.Phil, PhD Zoology.
- 5 years (2012-2017), of teaching and research experience at University of Leiden, Netherlands (Nov, 2012-Nov, 2017): M.Sc students at Meijer's laboratory, Institute of Biology, Leiden University, Netherlands.
- College teaching experience of 1 year, where I taught Fundamentals of Zoology to Bachelors & Basic Biology to Higher Secondary classes at Government Girls College, Layyah (Sept,2002- Sept 2003)

Academic Courses Taught, per HEC, Pakistan Curriculum for BS (4-year) and M.Sc

Zoology

- Biostatistics
- Bioinformatics
- Biochemistry
- Principles of Genetics
- Cell and Molecular Biology
- Evolutionary Biology and Systematics
- Zoogeography and Paleontology
- Animal Physiology

Academic Courses Taught, per HEC Pakistan Curriculum for M.Phil & PhD Zoology

- Immunology
- Applied Biostatistics
- Water quality (Fisheries)
- Human Genetics

Administrative duties at Bahaudin Zakariya University

- Member Purchase committee at Bahaudin Zakariya University Purchase committee (2023-till date)
- Superintendent Ayesha Hall girls Hostel, Bahaudin Zakariya University (2019-till date).
- Departmental director student affairs (till date), Institute of Zoology (IOZ)
- Incharge Time Table committee, Institute of Pure and Applied Biology, Bahaudin Zakariya University (2019-till 2023).
- Incharge Examination, Institute of Pure and Applied Biology, Bahaudin Zakariya University (2018-2020)

Research/Dissertations Supervised:

- M.S. Research Supervisions= 40
- PhD Research Supervisions= 4 scholars (in process)

Publications:

1. Amjad R., Ruby T., Ali K., Asad M., Imtiaz A., **Masud S.**, Saeed M, Q., Arshad M., Talib S., Alvi Q., Khan A., Sharif M, M.,(2024).Exploring the effects of noise pollution on physiological and ptilochronology of birds. Plos One 19(6):e0305091.
DOI: 10.1371?journal.pone.0305091.
2. Habib S. H., Naz S., Saeed m. Q., Ujan J A., **Masud S.**, Mushtaq A., Ullah M., Khan K., Zahid M., Al-Rejai, Mohany M.(2024). Assesment of heavy metals levels in polyculture fish farms and their aquatic ecosystems: an integrative study addressing environmental and human health risks associated with dam water usage. Envion GEochem Health. (2024) 46:267.
DOI: 10.1007/s10653-024-02042-y
3. Tasleem S., Alotaibi B. S., **Masud S.**, Habib S. S., Acar U., Gualandi C. S., Ullah m., Khan k., Fazio F., & Khayam K., (2024). Biofloc system with different carbon sources improved growth, haematology, non-specific immunity, and resistivity

- against *Aeromonas hydrophilia* in common carp, *Cyprinus carpio*. *Aquaculture research* (2024).
DOI. 10.1155/2024/7652354.
4. Amouri EL. R., Ujan J. A., Raza A., Mushtaq A., Saeed M. Q., **Masud S.**, Habib S. H., Milosevic M., Al-Rejaie S., & Mohany M. (2024). Sublethal concentrations of Cadmium and Lead: Effects on hemato-biochemical parameters and tissue accumulation in *Wallagu attu*. *Biological Trace Element Research*.
DOI.10.1007/s12011-024-04158-9.
 5. Habib S. S., Saeed M. Q., **Masud S.**, Kesbic O. S., Ujan J. A., Caravan C., Al-Rejaie Salim., Mohany M., Francesco F., (2024). Dietary effects of *Withania somnifera* root powder on growth, hematological parameters, immunity, and disease resistance to *Acromonas hydrophilia* in *Cyprinus carpio*. *Aquaculture Nutrition*.
DOI: 10.1155/2024/7321287.
 6. Green Boost for Nile tilapia, *Oreochromis niloticus*: Unveiling Multifaceted Effects of *Chenopodium album* leaves powder on growth, hematology, antioxidant defense, non-specific immunity and tolerance against *Aeromonas hydrophila*. (in press)
 7. Habib S. S., Fazio F., **Masud S.**, Ujan A. J., Saeed M. Q., Ullah M., khan K., Khayyam K., Mohny M., Milosevic M., Al-Rejaie S., & Caravana C. (2024). Analyzing the impact of pesticides on Indus river: contamination levels in water, sediment, fish and associated human health risks. *Environment Geochem Health*. (2024) 46 (191)
10.1007/s 10653-024-01975-8.
 8. Zafar M., Malik M, M., Mushtaq I., batool Z., Masud S., Bibi S., Latif H. M., Noor S. m., Talal M., Sajjad T. M., Ali S., (2024). Effects of Urotensin-II and Somatostatin-25 on carbohydrate and lipid metabolism of frog *Rana pipiens*. *Pure and applied Biol.* 13(4):394-397, Dece,mber 2024.
DOI: 10.19045/bspab.2024.130034.
 9. **Masud S.**, Zhang R., Prajsnar T.K. & Maijer, A. H. (2023). Dram1 confers resistance to *Salmonella* infection. *Autophagy Reports.* 2 (1)
DOI: [10.1080/27694127.2023.2242715](https://doi.org/10.1080/27694127.2023.2242715)
 10. Tasleem S., **Masud S.**, Habib S. S., Naz S., Fazio F., Aslam M., Ullah M., & Attaullah S., (2023). Investigation of the incidence of heavy metals contamination in commonly used fertilizers applied to vegetables, fish ponds, and human health risk assessments. *Envir. Res. & Pollu. Scie.*
Doi.org/10.1007/s11356-023-29480-y
 11. Raza E. B., Khan A. S., Anees M. S., Kamal M., **Masud S.**, Hamza A., Tahir M., Asghar M., Khan G. Z., Nawaz M. S., (2023). Identification of *Wolbachia pipiensti* and phylogenetic studies of *Plodia interpuntella* population in different cities of Pakistan. *J. Glob. Innov. Agric. Sci.*, 11(3): 1-11.
DOI: 10.22194/JGIAS/11.1090.

12. Zafar M., Malik M.M., Mushtaq I., Sajjad M. T., Ali S., **Masud S.**, Latif M. H., Noor M. S., Talal M., Wajid M., & Younis W. (2023). Epidemiological factors affecting incidence of parasitic type infections in the school children of rural areas of District Multan (Punjab), Pakistan. *Pakistan. Pure and Applied Biology*. 12 (2), 1120-1127.
DOI: 10.19045/bspab.2023.120114.
13. 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. (2022). Antibigrams of Gut Flora of Poultry Farms Workers Reveal Higher Resistance Levels as Compared to Non-Workers. *Infection and drug resistance*, 15, 7699–7705.
DOI:10.2147/IDR.S371930.
14. Zafar M., Malik M.M., Sajjad M. T., Ali S., Khan M. K. A., Ahmed N., **Masud S.**, Latif M. H., Noor M. S., & Asmatullah (2022). Effects of dalmazin (PGF2 α) on luteal cyst in Sahiwal cows, Multan, Punjab, Pakistan. *Pure and Applied Biology*.
DOI: 10.19045/bspab.2022.110101.
15. Kausar S., Rehman N., Javed A., Hussain A., Naeem M., **Masud S.**, Ali H.S., Manzoor A., Khan A.A., Akrem A., Iqbal F., Zulfikar A., Jamshaid M.B., Waqas M., Waseem A., Saeed M.Q (2021). Intensive Poultry Farming Practices Influence Antibiotic Resistance Profiles in *Pseudomonas aeruginosa* Inhabiting Nearby Soils. *Infection and drug resistance* 29;14: 4511-4516. DOI: 10.2147/IDR.5324055.
16. Zafar M., **Masud S.**, Malik M.M., Latif M.H., Noor M. S. & Asmatullah (2021). Gene frequency distribution of ABO and Rh-D blood group alleles in Multan Division (Punjab), Pakistan. *Pure and Applied Biology* 10(4):1173-1180.
DOI: 10.19045/bspab.2021.100124.
17. Lashari M.H., Bibi M., Farooq U., Afzal F., Ali A., Safdar M., Akhtar M.S., Farooq A. A., **Masud S.**, Ayaz M. & Khan M.I. (2021). Study on the prevalence and hematological alterations in *Toxoplasma Gondii* infected captive pheasant species of Bahawalpur Zoo, Pakistan. *The Journal of animal and Plant Sciences* 31(2): 625-629.
DOI: [10.36899/JAPS.2021.2.0251](https://doi.org/10.36899/JAPS.2021.2.0251).
18. Khalid M., Naeem M., **Masud S.**, Naeem Z., Naeem A.D., Istiaq A. & Shahid M.M. (2020). Length-weight and length-length relationships of farmed Catla catla during winter season from Muzaffargarh, Pakistan. *Sarhad Journal of Agriculture* 36(3): 924-928.
DOI:10.17582/journal.sja/2020/36.3.924.928
19. Prajasnar T.K., Serba J. J., Dekker B. M., Gibson J. F., **Masud S.**, Fleming A., Johnston S. A., Renshaw S. A., & Meijer, A. H. (2020). The Autophagic response to *Staphylococcus aureus* provides an intracellular niche in neutrophils. *Autophagy* 1: 1-15
DOI:10.1080/15548627.2020.1739443.

20. Naeem M., **Masud S.**, Naeem Z., Naeem A. D., Khalid M., & Hassan S. (2020). Evaluation of population structure and genetic diversity of *Cirrhinus mrigala* among the different freshwater rivers of Pakistan using Molecular Marker: Study Implications and Its Importance in Aquaculture. *Annual Research & Review in Biology* : 35(7): 1-9
DOI: [10.9734/arrb/2020/v35i730242](https://doi.org/10.9734/arrb/2020/v35i730242).
21. Lashari M.H., Farooq U., Mubeen S., Hassan W., Azhar M.F., Shahida S., Khan M.I., Aslam S., **Masud S.**, Anam M., Wajid A., Pervez M. T., Akhtar M. S., Farooq A.A., Zafar S., Nawaz M. & Gulshan A. B. (2020). Seroprevalence of *Toxoplasma gondii* and associated hematological alterations in small ruminants of D.G. Khan district of South Punjab, Pakistan *Arquivo Brasileiro de Medicina Veterinária e Zootecnia (Brazilian Journal of Veterinary and Animal Science)* 72 (05):1698-1704.
DOI: 10.1590/1678-4162-11723.
22. Khalid M., **Masud S.**, Zuberi A., Naeem Z., Naeem A. D. & Naeem, M. (2020). Haematological profile of farmed *Catla catla* from Multan, Pakistan. *Sindh University Research Journal (Sci-ser)*.52 (02): 143-147
DOI: 10.26692/sujo/2020.06.21.
23. Naeem Z., **Masud S.**, Hassan M., & Naeem, M. (2020). Comparative analysis of genomic DNA extraction protocols: Maxi preparation of quality of DNA for genetic evaluation. *Sindh University Research Journal (sci.ser)* 52 (01): 09-14.
DOI: 10.26692/sujo/2020.03.02.
24. Naeem M., Hassan S., **Masud S.**, Ali Q., Hayyat S., Naeem A. D., & Naeem Z. (2020). Comparative analysis of genomic DNA extraction protocols: Maxi preparation of quality DNA for genetic evaluation and phylogenetic studies. *Genetic Molecular Research*. 19 (1).
25. Hayyat S., Naeem M., Mlik A., **Masud S.**, & Bhutta A. M. (2020). Hepatitis B and C prevalence and its associated risk factors among school going children in Urban and rural areas of district Muzaffargarh, Pakistan. *Genetic Molecular Research*. 19 (1).
26. Iqbal R., Naeem M., **Masud S.**, & Ishtiaq A. (2020). Effect of graded dietary protein levels on body composition parameters of hybrid (*Labeo rohita* and *Catla catla*) from Pakistan. *Sarhad Journal of Agriculture* 36 (2): 548-558.
DOI: 10.17582/journal.sja/2020/36.2.548.558.
27. Bano S., Naeem M., & **Masud, S.**, (2020). Effect of varying dietary protein levels on Hematology of *Labeo calbasu*. *Sarhad Journal of Agriculture* 36 (2): 507-516.
DOI: 10.17582/journal.sja/2020/36.2.507.516.
28. Kousar A., Naeem M., & **Masud, S.**, (2020). Effect of different levels of proteins on the proximate composition of genetically improved farmed Tilapia (GIFT) from Pakistan. *Sarhad Journal of Agriculture* 36 (2): 517- 525. DOI: 10.17582/journal.sja/2020/36.2.517.525.

29. Zafar M., Khan M. K. A., Mushtaq I., **Masud S.**, Noor M. S., Latif M. H. & Asmatullah. (2020). Evaluation of hematological and blood biochemical values in lactating cows in and around Multan city (Punjab), Pakistan. *Pure Applied Biology* 9(2): 1313-1318.
DOI: 10.19045/bspab.2020.90136.
30. Naeem Z., **Masud S.** & Naeem M., (2020). Molecular approach for identification of *Catla catla* using mitochondrial CO1 from Pakistan. *Mitochondrial DNA Part B*. 5 (3). 3018-3021.
DOI:10.1080/23802359.2020.1768913.
31. Lashari M.H., Anjum H., Farooq U., Anam M., Hussain T., Gulshan A. B., Nawaz M., Akhtar M.S., Farooq A. A., **Masud S.** & Khan, M.I. (2020). Study on prevalence and liver function test enzyme of differently plumaged captive peafowls (*Pavo cristatus*), infected with *Toxoplasma gondii*. *Arquivo Brasileiro de Medicina Veterinaria e Zootecnia*. 73 (02).
DOI: [10.1590/1678-4162-11721](https://doi.org/10.1590/1678-4162-11721).
32. Lashari M.H., Ahmed I., **Masud S.**, Akhtar M. S., Farooq U., Leghari S., Naeem M. & Nawaz M. (2020). Hematological and biochemical parameters of pregnant and lactating goats in rangeland of Cholistan desert, Bahawalpur, Pakistan. *Journal of Hellenic Veterinary Medical Society*. 72 (01).
DOI: 10.12681/jhvms.26765.
33. **Masud S.**, Meijer A.H., Prajsnar T.K., van der Burg, L., & Storm L. (2019). Rubicon-dependent Lc3 recruitment to *Salmonella*-containing phagosome is a host defense mechanism triggered independently from major bacterial virulence factors. *Frontiers in Cellular and Infection Microbiology*. 9: 279.
Doi: 10.3389/fcimb.2019.00279.
34. Khalid M., Naeem M., **Masud S.**, Ishtiaq A. & Hassan, S. (2019). Evaluation of some essential and toxic metals in farmed *Ctenopharyngodon idella* in relation to body size and Condition Factor. *Sindh University Research Journal (sci.ser)* 51 (04): 721-728.
DOI: 10.26692/sujo/2019.12.114.
35. Sajid M., Tassawer Z., Naeem M., **Masud S.**, & Hayyat S. (2019). Active surveillance of *Babesia* infection and risk factors involved, in sheep host, in district Multan, Pakistan. *International Journal of Biology, Pharmacy and Allied Sciences* 8(11).
DOI: 10.31032/IJBPAS/2019/8.11.4872.
36. Kousar A., Naeem M. & **Masud, S.** (2019). Impact of graded dietary proteins on haematological parameters of genetically improved farmed Tilapia (GIFT). *International Journal of Biology, Pharmacy and Allied Sciences* 8(11).
DOI:10.31032/IJBPAS/2019/8.11.4856.
37. Bano S., Naeem M., & **Masud, S.** (2019). Effect of different dietary protein levels on proximate composition of *Labeo calbasu* from Pakistan. *International Journal of Biology, Pharmacy and Allied Sciences* 8(11)
DOI:10.31032/IJBPAS/2019/8.11.4855.

38. Iqbal R., Naeem M., & **Masud S.**, (2019). Effects of graded levels of dietary plant protein on elemental concentration of Hybrid (*Catla catla* x *Labeo rohita*) from Pakistan. *International Journal of Biology, Pharmacy and Allied Sciences* 8(11)
DOI:10.31032/IJBPAS/2019/8.11.4857.
39. Lashari H. M., Farooq M., Anwar Z., **Masud S.**, Sial N., Afzal F., Sharif S., Inayat T., Akhter M. S., & Malik S. (2019). Prevalence of Obesity, overweight and associated factors in female students of the Islamia University of Bahawalpur, Pakistan. *Pure Applied Biology* 8(2): 1718-1723.
DOI :10.19045/bspab.2019.80115.
40. Zafar M., Mushtaq I., **Masud S.**, Latif H. M., & Noor, M. S., (2019). Some studies on incidence of malaria in school going children of villages of Multan district (Punjab), Pakistan. *FUUAST J. BIOL.*, 9(1): 113-116.
41. Zafar M., Mushtaq I., **Masud S.**, Khan M.Z., Khan M. K. A., & Asmatullah, (2019). Prevalence and distribution of human malarial infection in district Multan, Punjab, Pakistan. *Pure Applied Biology*. 8(1):873-881.
DOI: 10.19045/bspab.2019.80029.
42. **Masud S.**, Prajsnar T.K., Torraca V., Lamers G.E.M., Benning M. Van der Vaart, M., & Meijer, A.H. (2019). Macrophages target *Salmonella* by Lc3 associated phagocytosis in a systemic infection model. *Autophagy*. 15(5); 796-812.
DOI: 10.1080/15548627.2019.1569297.
43. **Masud S.**, (2017). Autophagy and Lc3 associated phagocytosis in host defense against *Salmonella*. Enschede, NL, Ipskamp printing, Netherlands.
www.ipskampprinting.nl, ISBN/EAN: 978-94-028-0746-2.
44. **Masud S.**, Torraca V., & Meijer A.H. (2017). Modelling infectious diseases in the context of developing immune system. *Current Topics in Developmental Biology* 124, 277-329.
DOI:10.1016/bs.ctdb.2016.10.006.
45. Torraca V., **Masud S.**, Spaink H.P., & Meijer A.H. (2014). Macrophage-pathogen interactions in infectious diseases: new therapeutic insights from the zebrafish host model. *Disease Models & Mechanisms*. 7(7), 785-797.
DOI:10.1242/dmm.015594.
46. Tassaduqe K., Ali M., Salam A., Latif M., Afroze N., **Masud S.**, & Umar S. (2004). Studies on the chemical composition and presentation of gall stones in relation to sex and age among human population of Multan, Pakistan. *Journal of Biological Sciences* 4(4):470-473.
DOI: 10.3923/jbs.2004.470.473.
47. Tassaduqe K., Ali M., Salam A., Latif M., Afroze N., **Masud S.**, & Umar, S. (2004). Hypertension in relation to obesity, smoking, stress, family history, age and marital status, among human population of Multan, Pakistan. *Journal of Medical Sciences*. 4(1): 30-35.
DOI:

48. Tassaduqe K., Ali M., Salam A., Latif M., Afroze N., **Masud S.**, & Umar, S. (2003). Studies on chemical composition and presentation of urinary stones in relation to sex and age among the human population of Multan, Pakistan. *Journal of Medical Sciences*. 3(5-6): 401-403.

DOI:

49. Ali M., Salam A., & **Masud S.** (2003). Effects of Stress induced by fasting on specific growth rate, protein growth rate and condition factor of Thaila, *Catla catla*. *Punjab University Journal of Zoology*. 18: 13-21.

DOI:

50. Salam A., Ali M., & **Masud, S.** (2000). Effects of various food deprivation regimes on body composition dynamics of Thaila, *Catla catla*. *Journal of Research (Science)*, Bahaudin Zakriya University, Multan, Pakistan. 11(1): 26-32