

Dr. Andleeb Batool (PhD)

Assistant Professor
Nazir Ahmad Institute of Biological
Sciences, Government College
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Nationality: Pakistani

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RESEARCH INTEREST: Genetics and Molecular Biology

EDUCATION:

Ph.D. Zoology (Molecular Biology and Genetics), 2015 Government College University Lahore and Split PhD at Applied genomic center, Hong Kong University of Science and Technology

M. Phil. Zoology (Molecular Biology), 2008, Government College University Lahore

University of Arid Agriculture Rawalpindi, Pk

M.Sc. Zoology (2005)

University of the Punjab, Lahore, Pakistan

B.Sc.: Botany, Zoology, Chemistry (2003)

WORK EXPERIENCE:

Assistant Professor – 2015 until now

Lecturer – 2014 - 2015

Visiting Lecturer – 2013

DEPARTMENTAL/ UNIVERSITIES ASSIGNMENTS:

1. Chief Coordinator: 2023-2024
2. PhD Coordinator: 2021-2023
3. Member of the Board of Faculty of Chemistry and Life Sciences 03-03-2021 to 02-03-2024
4. M. Phil Coordinator Evening 22-03-2019 (One sem)
5. Immunology Lab Incharge 11-09-2015 to now
6. Purchase of Equipment, Chemicals and Glassware One year
7. 6. QEC Coordinator in Department of Zoology One Year
8. Timetable Incharge One Semester
9. Annual Stock Checking of Chemicals 2017-2018 June 21-June 28 2018
10. Coordinator for B. A / B.Sc. Hons Morning (Sem 5-8) One Year

Courses:

B.S courses: Animal Form and Function 1 (3rd sem) Genetics (5th sem), Research Methods (6th sem)

Mphil Course: Advance techniques in zoological research

Thesis Supervised:**PhD 5 Students:**

Working on genetics and environmental factors involved in diabetes (Insulin resistance and insulin production) and cardiovascular diseases.

PhD completed: 02 student (2024 & 2025)

M. Phil Thesis supervision: 14 Thesis completed and 7 ongoing.

B. Sc Hons (Undergraduates): 17 Thesis completed.

MAJOR COURSES: Genetics, Biological Techniques/Research Methods

ACHIEVEMENT AND AWARDS

- International Research Support Initiative Program (HEC) Fellowship from Higher Education Commission of Pakistan (December 2011-June 2012) at Applied genomic center, Hong Kong University of Science and Technology
- Indigenous Scholarship for M. Phil and Ph. D. (Higher Education Commission, Islamabad Pakistan)
- Travel Grant for 'Oral presentation, 7th Genetics and Genomics conference, Sanya, 1-3 December 2018 China' (Higher Education Commission, Islamabad Pakistan)

PROJECTS:

1. Evaluation of susceptible genetic variants associated with glaucoma in population of Lahore, Pakistan, funded by ORIC, Government College University, Lahore 2018 (Completed)
2. Genetic and Environmental factors Involved in Insulin Production and Resistance in Pakistani Population: Funded by National Institute of Health, Health Research institute, Islamabad, Pakistan; 2022 (Approved: Ongoing)
3. Prognosis of Diabetes Mellitus with identification of genes involved in development of Pancreatic Beta Cells funded by ORIC, Government College University, Lahore 2023. (Approved: Ongoing)

PUBLICATIONS:

1. Rizwan, M. ., Ali, S., Imran, M., Batool, A. ., Munir, M., Basharat, Z. Attaullah, Latif, T. ., Ali, N. ., Jahanzeb, M., Ahmad, S. ., Tayyub, M. ., Jaffar, G., Parveen, M. ., & Hassan, A. (2024). Taxonomic assessment of *Bungarus caeruleus* (Schneider, 1801) in Kasur and Lahore Districts, Punjab, Pakistan: A morphological and phylogenetic analysis. *Journal of Wildlife and Biodiversity*, 9(1), 169–182. <https://doi.org/10.5281/zenodo.14634909> (Impact factor: 0.5)
2. Najiya, A., Atif, H., Andleeb, B., Irfana, L., Fakhar, N. Y. (2025). Immune Response in Domestic Fowl Against Oil-Based Vaccine Produced from Local Isolates of *Mycoplasma gallisepticum*. *Journal Advances of Nutrition Science and Technology*, 5(1-2), 12-17. <https://doi.org/10.15228/ANST.2025.v05.i01-2.p02> (Y-

category)

3. Abdul Wajid, Andleeb Batool, Shahid Sherzada, Naveed Ahmad, Abdul Manan, Muhammad Shafee, Imran Ali Sani and Muhammad Iqbal. Evidence for Possible Transmission of Newcastle Disease Virus of Sub-Genotype XXI.1.2 Between Feral Eurasian Collared Doves and Backyard Chickens in Balochistan Province, Pakistan. *Pakistan J. Zool.*, pp 1-6, 2025. DOI: <https://dx.doi.org/10.17582/journal.pjz/20230409090418> (Impact Factor:0.5)
4. Zahid A, Batool A, Wajid A, Wu Y, Liang C, Khan MA, Ullah A, Sahibzada KI, Xue H. Identifying genetic susceptibility loci associated with human coronary artery disease. *PLoS One*. 2025 Jan 9;20(1): e0315460. doi: 10.1371/journal.pone.0315460. PMID: 39787106; PMCID: PMC11717286. (Impact factor: 2.6)
5. Goher Ayub, Sammia Shahid, Sana Mansoor, Mohsin Javed, Abdul Wajid, Ammar Zidan, Andleeb Batool, Kinza Batool, Ali Bahadur, Shahid Iqbal, Sajid Mahmood, Eman Alzahrani, Abd-El Aziem Farouk, Evaluation of antidiabetic potential of Co3O4 and TiO2 nanoparticles on alloxan-induced diabetic mice, *Journal of Molecular Structure*, Volume 1319, Part 1 (2025), <https://doi.org/10.1016/j.molstruc.2024.139467>. (Impact factor: 4.0)
6. Parveen, A., Batool, A., Wajid, A. et al. Delving the vitamin D receptor variation and expression profiles in the context of type 2 diabetes among families. *Mol Biol Rep* 51, 514 (2024). <https://doi.org/10.1007/s11033-024-09387-8> (Impact factor: 2.6)
7. Anjum Jabeen, Samreen Riaz, Muhammad Usman, Asia Parveen, Maryam Mukhtar, Abdul Wajid, Atif Hanif, Andleeb Batool. Association of polymorphism of *NLRP3*, *ICAM-1*, *PTPN22*, *INS* genes in childhood onset type 1 diabetes in a Pakistani population. 2024. *Molecular Biology Reports*. (2024) 51:1070. (Impact factor: 2.6)
8. Abdul Wajid, Gulnaz Wazir, Abdul Wahid, Andleeb Batool, Asia Parveen, Quratulain Maqsood, Aqsa Zahid, Shaista Aslam, Naila Malkani. Genomic association of SNPs rs4077582 of *CYP11A1* and rs700519 of *CYP19A1* genes with polycystic ovarian syndrome. 2024, *Endocrine*, <https://doi.org/10.1007/s12020-024-04065-y>. (Impact factor: 3)
9. Mehwish Mohy U Din, Andleeb Batool, Raja Shahid Ashraf, Atif Yaqub, Aneeba Rashid, and Nazish Mohy U Din. 1. Green Synthesis and Characterization of Biologically Synthesized and Antibiotic-Conjugated Silver Nanoparticles followed by Post-Synthesis Assessment for Antibacterial and Antioxidant Applications. *ACS Omega Article ASAP*. DOI: 10.1021/acsomega.3c08927 (Impact factor: 4.1)
10. Wajid, A., Maqsood, Q., Ben Said, M., Sherzada, S., Nooruzzaman, M., Batool, A., ... Ahmed, N. (2024). Geographic distribution and genetic diversity of Newcastle disease virus in pigeons from Pakistan. *Avian Pathology*, 53(2), 134–145. <https://doi.org/10.1080/03079457.2023.2291107> (Impact factor: 2.8)
11. Abdul Wajid; Asif Raheem; Shahid Sherzada; Andleeb Batool; Ahmad Nawaz Khosa. Phylogenetic and antigenic analysis of infectious bronchitis virus isolated from commercial and backyard chickens in Pakistan, 2015-2018. *J Gen Virol*. 2023 Jul;104(7). doi: 10.1099/jgv.0.001862. PMID: 37470343. *Journal of General Virology*. 2023. (Impact factor: 5.141)
12. Safa Ather, Abdul Wajid, Andleeb Batool, Aasma Noureen, Quratul Ain, Goher Ayub, Aidin Molouki, Imrana Niaz Sultan, Sara Mahmood, Atif Hanif, Nazeer Ahmed, Genomic and comparative clinico-pathological assessment of two Pakistani pigeon-derived newcastle disease virus sub-genotypes XXI.1.1 and XXI.1.2 isolated in 2017,

13. Khaliqa Minhas, Andleeb Batool & Amina Irfan. Comparative Evaluation of Allopathic and Herbal Extract (Cinnamon and Fenugreek) on Diabetes Control in Albino Mice. Dinkum Journal of Natural & Scientific Innovations, 2(09):571-595.
14. Bashir, S., Hameed, H., Irshad, N., Ashraf, A., Faizan, M., Halim, S. F., Asjad, H., Batool, A., & Sohail, I. Hepatoprotective Effect of Berberis Lycium in Alpha-Naphthylisothiocyanate Induced Cholestatic Mouse Models, Journal of Bioresource Management, (2023)10 (4).
15. Muhammad Adnan, Abdul Wajid, Wasif Noor, Andleeb Batool, Muhammad Aasim, Kamran Abbas & Quratul Ain. Sociodemographic and genetic determinants of nonalcoholic fatty liver disease in type 2 diabetes mellitus patients. J Genet Eng Biotechnol 20, 68 (2022). (**Impact factor: 2.93**)
16. Asma Basharat, Abdul Wajid, Andleeb Batool, Tayyeba Batool, Aziz Ullah, Mahmood Shaukat. Identification of two novel missense TBX22 mutations are a frequent cause of non-syndromic cleft palate in Pakistani population. Pakistan Journal of Zoology, pp 1-4, 2022 (**Impact factor: 0.831**)
17. Awais M, Wajid A, Goraichuk IV, Batool A, Rahim A, Anif A, Ahmed N, Yin R. Surveillance and Assessment of Risk Factors for Newcastle Disease Virus from Live Bird Retail Stalls in Lahore District of Pakistan. Avian Dis. 2022 Oct;66(3):1-8. doi: 10.1637/aviandiseases-D-22-00010. (**Impact factor: 1.734**)
18. Mukhtar M, Sheikh N, Batool A, Saleem T, Khawar MB, Irfan M, Suqaina SK. TLR-8, TNF- α , and ESR-1 α Gene Polymorphism Susceptibility in Onset of Arthritis. Genet Res (Camb). 2022 Sep 20;2022:9208765. doi: 10.1155/2022/9208765. (**Impact factor: 1.375**).
19. M. Mukhtar, N. Sheikh, A. Batool, B. Khawar, N. Fatima, R. Mehmood, Novel Functional Polymorphism on PADI-4 Gene and Its Association with Arthritis Onset, Saudi Journal of Biological Sciences (2021), doi: <https://doi.org/10.1016/j.sjbs.2021.09.037> (**Impact factor: 4.219**)
20. Abdul Wajid, Aasma Naureen, Amina Mustafa, Gohar Ayub, Quratul Ain, Ayesha Mohiud Din, Andleeb Batool, Tanveer. Isolation and phylogenetic analysis of avian paramyxovirus-1 sub-genotypes VII.2 and XXI.1.2 from caged Birds in the Lahore district, Pakistan, Shadab Nasir, Hussain has been accepted in Acta Veterinaria Hungarica (**Impact Factor: 1**), 2021
21. K. Batool, A. Wajid, Qu. Ain, S. Shahid, T. Namat, A. Batool, T. Hussain, M.E. Babar. Sequence-based Structural and Evolution of Polymorphisms in Bovine Toll-Like Receptor2 Gene in Dhanni and Jersey cattle breeds. vol. 56, No 11 – 2020: (**Impact factor: 0.680**)
22. Parveen, A., Batool, A., Mukhtar, M., Wajid, A., & Malkani, N. (2020). Association of Interleukin 17F with Arthritis in Punjabi Families of Pakistan, Journal of Bioresource Management, 7(1).DOI: <https://doi.org/10.35691/JBM.0202.0118> (2)
23. Maryam Mukhtar, Nadeem Sheikh, Saira Kainat Suqaina, Andleeb Batool, Naz Fatima, Rabia Mehmood, Sabeen Nazir. Vitamin D Receptor Gene Polymorphism: An Important Predictor of Arthritis Development. Biomed Res Int. 2019; 2019:8326246. Published 2019 Mar 18. doi:10.1155/2019/8326246 (**Impact factor: 2.583**)
24. Bhatti, Z., Gondal, M., & Batool, A. (2019). The Physico-Chemical Environment and Aquatic Biodiversity of Head Marala Wetland During 2000-2001, Journal of Bioresource Management, 6 (2). DOI: <https://doi.org/10.35691/JBM.9102.0104>
25. Naila Malkani, Hira Hamid, Mehwish Farheen, Andleeb Batool, Atif Yaqub.

- Association of Matrix Metalloproteinase 2 (MMP2) With Atherosclerosis among Population of Lahore Pakistan. Pak Heart J 2019 Vol. 52 (01) : 36 – 40
26. Naila Malkani, Mehwish Farheen, Hira Hamid, Andleeb Batool, Rizwan Ullah Khan, Atif Yaqub. Matrix metalloproteinase-9 polymorphism and its association with Atherosclerosis — A case-control study in Pakistani population. Vol. 69, No. 10, October 2019. doi: 10.5455/JPMA.300814 (**Impact Factor: 0.570**)
 27. Syed Shahid Imran Bukhari¹, Iqra Azam, Muddasir Hassan Abbasi¹, Meerab Daud, Nadeem Sheikh, Andleeb Batool, Rabia Mahmood & Maryam Mukhtar. Effect of Alloxan on IL-6 Gene Expression in Mus musculus. June, 2018, 64 (1), 69-73. BIOLOGIA (PAKISTAN) PKISSN 0006 – 3096 (Print)
 28. Nazir, F., Batool, A., Malik, I. U., Shah, S. A., & Shamim, S. (2018). Small Mammals of Family Muridae in Protected Areas of Pakistan, Journal of Bioresource Management, 5 (3). DOI: <https://doi.org/10.35691/JBM.8102.0091>
 29. Maryam Mukhtar, Andleeb Batool, Abdul Wajid and Iram Qayyum, 2017. Vitamin D Receptor Gene Polymorphism influences the T1D onset in Juveniles of Pakistan: A Case Control Study. International Journal of Genomics. (**Impact factor: 2.402**)
 30. Batool, A., Gondal, A., Malik, I. U., & Shah, S. A. (2018). Status of Jackals and Foxes (Family: Canidae) From Selected Hill Areas of Pakistan, Journal of Bioresource Management, 5 (3). DOI: <https://doi.org/10.35691/JBM.8102.0093>
 31. Abdul Wajid, Muhammad Wasim, Andleeb Batool, Haleema Sadia, Tasra Bibi, Asma Basharat, Saba Manzoor, Tahir Yaqoob, Muhammad Tayyab, Shafqat Fatima Rehmani. 2017. Complete Genomic Analysis of Newcastle Disease Virus of a Recent Panzootic isolated from isolated Poultry Flock in 2014 in Pakistan. 27 (4), Journal of Animal and Plant Sciences. (**Impact factor: 0.448**)
 32. Syed Shahid Imran Bukhari, Nusrat Jahan, Andleeb Batool. 2016. Cinnamomum tamala (Daar Cheeni) Aqueous Extract as Antidiabetic and Antihypercholesteremic In Alloxan Induced Diabetic Mice, 62 (2) Biologia (Pakistan)
 33. Syed Shahid Imran Bukhari, Nusrat Jahan & Andleeb Batool. Effect of Cinnamomum tamala and Aloe barbadensis on Kidney Functioning in Diabetic Mice. December 2015, 61 (2), 249-255. Biologia (Pakistan)
 34. Andleeb Batool, Riffat Iqbal, Maryam Mukhtar, Hong Xue Susceptibility of NPPA and IL6 with Type 2 Diabetes and Hypertension in Punjab, Pakistan Journal of Bioresource Management. (2015) 2(3): 23-29
 35. Batool A, Jahan N, Sun Y, Hanif A, Xue H. Genetic association of IDE, POU2F1, PON1, IL1 α and IL1 β with type 2 diabetes in Pakistani population. Mol Biol Rep. 2014 May;41(5):3063-9. doi: 10.1007/s11033-014-3165-y. Epub 2014 Jan 30. PMID: 24477584. (**Impact Factor: 2.316**)
 36. N. Al-Arifa, A. Batool and A. Hanif. Effects of Alkaline Ph On Protein and Fatty Acid Profiles Of Epidermal Mucus From Labeo Rohita. The Journal of Animal & Plant Sciences 2013, 23(4): 1045-1051. ISSN: 1018-7081 (**Impact factor: 0.549**).
 37. N. Al-Arifa, M. Sharif Mughal, Atif Hanif, Andleeb Batool. Effect of Alkaline pH on Bioactive Molecules of Epidermal Mucus from Labeo rohita (Rahu). Turkish Journal of Biochemistry 2011;36(1); 29–34. (**Impact factor: 0.254**)

CONFERENCES/WORKSHOPS/TRAININGS:

1. Bushra Allah Rakha, Andleeb Batool, Sajjad Ansari, Bilqees Khanum. Soil Macrofauna Variation in Margilla Hill, National Park, Pakistan. International Conference on Biodiversity Conservation as Renewable Resource of Pakistan. March 13th-14th, 2007(abSTRACT)
2. M. S. Mughal, Atif Hanif, Andleeb Batool. Antimicrobial activity and characterization of epidermal mucus extracts from grass carp (Cetnopharyngodon idella). 4TH National symposium on fisheries Lahore, March 18th -19th, 2009 (abstract)
3. Atif Hanif, Andleeb Batool, Najiya al-Arif. Immune Response in chicken by oil based vaccine produced by local isolates of Mycoplasma gallisepticum. 30th International congress of zoology Faisalabad. March 2nd – 4th, 2010 (abstract)
4. Najiya Al-Arif, Andleeb Batool, and Atif Hanif. A Study on the Effects of Alkaline pH on the Epidermal Mucus of Labeo Rohita (Rahu). 32nd International congress of zoology GCU Lahore. 6th-8th March, 2012 (abstract)
5. Andleeb Batool, Nusrat Jahan, Atif Hanif, Hong Xue. Recent Trends and Economic Burden of Type 2 Diabetes Mellitus in North Punjab, Pakistan. Abstracts 33rd Pakistan Congress of Zoology (International), April 2-4, 2013 (abstract)
6. Andleeb Batool, Nusrat Jahan, Yisuo Sun, Atif Hanif, Hong Xue. Association of Single Nucleotide Polymorphism in CDKL1, PPARG and IL6 gene with Type 2 Diabetes in Punjabi Population of Pakistan. Abstracts 34th Pakistan Congress of Zoology (International) at Baha-U-Din Zikriya University Multan, 25-26th Feb 2014 (abstract)
7. Andleeb Batool, Nusrat Jahan, Atif Hanif, Irfana Liaqat, Hong Xue. “Association of Environmental and Genetic Factors with Type 2 Diabetes Mellitus in Pakistani Population” International Conference on Innovative Biological and Public Health Research, at GC University Lahore, May 6-8, 2014 (abstract)
8. Participated in International Conference on Hereditary Diseases; Molecular Diagnosis and Prevention strategies, March 29, 2018 organized by Department of Molecular Biology Virtual University of Pakistan
9. Andleeb Batool. Oral presentation at “Genetics of type-2 diabetes in Pakistani population”: Genetics and Genomics conference 2018, Asia Pacific Convention Centre, Sanya China (Abstract)
10. Introduction to laboratory instrumentation October 13-19, 2008 at University Of Veterinary And Animal Sciences, Lahore
11. Attended a workshop organized by Higher Education Commission Of Pakistan Learning Innovation Division on **Zoological Techniques** held at Government College University Lahore at February 16-21, 2009
12. Attended a workshop on “**Development and** Optimization of RT-PCR for the Diagnosis of RNA Viruses” During March 16 – 20, 2010
13. Attended workshop on “Modern Techniques in Angiogenesis and Toxicology” June 1 to 8, 2010 at department of Pharmacology and Toxicology, University of Veterinary and Animal Science, Lahore in collaboration with Department of Clinical Neurosciences, University of Cambridge, UK
14. Workshop on “The Prevention and control of Dengue Vectors” on 5th-9th Nov 2012 at Government College University Lahore

15. A two days Symposium on Dengue Fever: Virology and Vector Control (31st January – 1st February 2013) at National Institute for Biotechnology and Genetic Engineering, Faisalabad.
16. “National Workshop on Biosafety Training for Young Scientists” (October 20, 2016) at Department of Zoology, Government College University Lahore
17. One Day International Seminar on Fisheries and Aquaculture (February 10, 2017), Organized by Department of Zoology, Government College University, Lahore
18. “National Workshop on Intellectual Property Protection for the Inventions Related to Agriculture and Animal Sciences” (9th-10th October 2017) Organized by Office of Research Innovation and Commercialization (ORIC), University of Veterinary and Animal Sciences, Lahore-Pakistan
19. Online international symposium on mental health and stress management (15 Oct 2020) organized by Molecular Biology department, Virtual University Lahore, Pakistan
20. One Day Seminar on Diabetes Day under theme of Coronavirus and Diabetes at Microbiology and Molecular Genetics, University of the Punjab in collaboration with Pakistan Academy of Family Physician (14th Nov 2020).
21. Undergraduate Faculty Training STEM Education in Pakistan on March 14-18, 2022, organized by ORIC of Virtual University and British Council
22. Two days’ workshop on ‘Gene Cloning’ held on August 25-26, 2022 at GC University, Lahore
23. Two days’ workshop on ‘Gene Expression and Protein Profiling’ held on September 08-09, 2022, at GC University, Lahore
24. ‘International Webinar on Molecular Research Methodologies and Breast Cancer Awareness’ October 28, 2022
25. ‘*MULTI-OMICS BIG DATA ANALYSIS BOOT CAMP*’ organized by School of Biochemistry and Biotechnology, University of the Punjab Lahore, December 07-09, 2022.
26. ‘Advancing Teaching Excellence’ strategies for effective Higher Education instructions and Professional Development organized by Punjab Higher Education Commission July 24-26, 2023.
27. ‘Building tomorrow’s Global Genomic Workforce’ Morocco/Turkey/Pakistan organized by ICESCO /INTERGEN /COMSATS on 28th September 2023

Book Chapters:

1. Batool, A., Mustafavi, N., Parveen, A., Mukhtar, M., Jabbar, A. and Razzaq, D. (2025). Wetlands of Himalayan and Hindu Kush Regions of Pakistan. In Wetlands of Mountainous Regions, T. Pullaiah (Ed.). <https://doi.org/10.1002/9781394235230.ch3>
2. Andleeb Batool, Asia Parveen, Mishal Nawaz, Dania Razzaq, Maryam Mukhtar, Naseeba Mustafavi. (2025). Wetlands of Plains of Pakistan. In Wetlands of Mountainous Regions, T. Pullaiah (Ed.). <https://doi.org/10.1002/9781394235278.ch4>

Editorial Board:

Editor: Journal of Bioresource Management

JOURNAL REVIEWER:

- Meta gene
- Gene report
- Saudi journal of Biological Sciences

- Journal of Bioresource management
- Human Gene
- Thyroid Research

INVITED SPEAKER

- ‘Different types of insect collection and preservations’ held on 27th August 2021 at GC University, Lahore
- Plenary lecture in Two Days Workshop on DNA Isolation and PCR held on June 16-17, 2022, at GC University, Lahore