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Hanif Ullah Jan

Nationality: Pakistani **Date of birth:** 05/12/1991 **Gender:** Male

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Other: Molecular Biotechnology Center, MBC University of Turin, Torino (Italy)

Work: Lecturer IAHS&ET Faculty of Molecular and Biological Sciences, The University of Agriculture, Peshawar, (Pakistan)

ABOUT ME

https://orcid.org/0000-0003-4473-7891

WORK EXPERIENCE

The University of Agriculture, Peshawar – Peshawar, Pakistan

Lecturer Biotechnology/Bioinformatics

[11/11/2026 – Current]

- Teaching & research

Università degli Studi di Torino – Turin, Italy

PhD in Molecular Medicine (Bioinformatics)

[01/02/2024 – Current]

- working on breast cancer-microbiomes using Bioinformatics tools and pipelines in python and R-programming such as Qiime2 analysis pipleline, phyloseq and vegan (R-pacakges), DESeq2, Cytoscape
-build correlation-based (SparCC) networks to identify microbial clusters and co-occurred genera associated with breast cancer (SparCC in python and Cytoscape)
-performed GO, KEGG and DO enrichment analysis in R-packages (clusterProfiler, DOSE)
-also worked with gut-microbiome datasets associated with IBD for microbial classification, statistical analysis and co-occurrence networks.

KU Leuven, Belgium – Leuven, Belgium

PhD mobility

[04/01/2026 – 04/04/2026]

- to study and perform co-occurrence breast cancer-microbial networks in R-programming platform and Cytoscape

Virtual University of Pakistan – Peshawar, Pakistan

Tutor/Instructor Molecular Biology

[05/04/2021 – 31/01/2024]

- teaching to the undergraduate students
- conducting course practicals at campus Bio-lab
- developing course contents & curriculum
- grading student's reports and assignments
- student's exam marking
- other curriculum and research activities as assigned by the department and University. (40 hours/week)

Center for Genome Sciences, Rehman Medical Institute – Peshawar, Pakistan

Technologist Genomic Sciences

[16/03/2016 – 02/04/2021]

Performed the following wet lab and dry lab procedures;

- sample handling and processing for DNA/RNA extraction
- Qubit quantification assays (quality control measures)
- Gel electrophoresis
- PCR amplifications for targeted genes
- prepared NGS libraries for targeted and customized panels
- Amplicon sequencing library preps
- loading pooled-library onto the sequencing platform i.e., MiSeq, Illumina
- preliminary data processing on bioinformatics analysis pipeline (post-FASTQ generation)
- MiSeq (sequencer) maintenance and managing lab activities. (42 hours/week)

EDUCATION AND TRAINING

M.Phil. Biotechnology & Genetic Engineering with CGPA 3.74/4.00

Institute of Biotechnology & Genetic Engineering, The University of Agriculture, Peshawar, Pakistan [11/02/2013 – 10/09/2015]

Address: University campus, Peshawar, KP, Pakistan, 25000 | **Website:** https://www.aup.edu.pk/ | **Field(s) of study:** Natural sciences, mathematics and statistics: ● Biological and related sciences not further defined | **Final grade:** 3.74 / 4.00 CGPA | **Thesis:** Detection of multi drug resistance in Mycobacterium tuberculosis by Multiplex Allele-specific Polymerase chain reaction (MAS-PCR)

Completed 52 credit hours in Master's degree courses including Genetics, Gene expression & Regulation, Tissue culture, Recombinant DNA technology, Biochemistry, Microbial biotechnology, Agricultural biotechnology, Seminar & Thesis.

B.Sc. (Hons.) Biotechnology & Genetic Engineering with CGPA 3.90/4.00

Institute of Biotechnology & Genetic Engineering, The University of Agriculture, Peshawar, Pakistan [05/01/2009 – 28/12/2012]

Address: University campus, Peshawar, KP, Pakistan, 25000 | **Website:** https://www.aup.edu.pk/ | **Field(s) of study:** Natural sciences, mathematics and statistics: ● Biological and related sciences not further defined | **Final grade:** 3.90 / 4.00 CGPA

Completed 147 credit hours in Bachelor's degree courses including, Principle of Genetics, Biotechnology (Health, Microbial, Animal, Plant & Industrial), Molecular Biology, Bioinformatics, Proteomics, Recombinant DNA Technology, Microbial Genetics, Genetics of Plant-Microbe Interactions, Agricultural Microbiology, Tissue culture, Cell biology, Biochemistry, Enzymology, Plant viruses, Signal transduction, Biodiversity & conservation & Seminar.

Intermediate- Higher Secondary School Certificate, HSSC

Board of Intermediate and Secondary Education Peshawar, Pakistan [04/09/2006 – 10/08/2008]

Address: University road, Board, Peshawar, KP, Pakistan, 25000 | **Website:** https://www.bisep.edu.pk/ | **Field(s) of study:** Natural sciences, mathematics and statistics: ● Biology | **Final grade:** 77.36%

Matric- Secondary School Certificate, SSC

Board of Intermediate and Secondary Education Peshawar, Pakistan [12/04/2004 – 30/06/2006]

Address: University road, Board, Peshawar, KP, Pakistan, 25000 | **Website:** https://www.bisep.edu.pk/ | **Field(s) of study:** Natural sciences, mathematics and statistics: ● Natural sciences, mathematics and statistics not further defined | **Final grade:** 84.67%

PUBLICATIONS

[2022]

Genomic Characterization of SARS-CoV2 from Peshawar Pakistan Using Next-Generation Sequencing

Afridi, et al. "Genomic characterization of SARS-CoV2..." Current Microbiology 79.2 (2022): 48.

Link: https://doi.org/10.1007/s00284-021-02743-y

[2020]

Development of the Next Generation Sequencing-Based Diagnostic Test for ß-Thalassemia and its Validation in a Pashtun Family

Sabiha, et al. "Development of the NGS-based diagnostic test..." Hemoglobin 44.4 (2020): 254-258.

Link: https://doi.org/10.1080/03630269.2020.1793773

[2019]

Large scale differences in characterization of gut microbiome between 16S amplicon and shallow shotgun sequencing

Sabiha, et al. "Large scale differences in charact. of gut microbiome..." JRMI 5.2 (2019): 03-06.

Link: http://jrmi.pk/article/view/216

[2017]

Genetic etiology of oral cancer

Ali, Johar, et al. "Genetic etiology of oral cancer." Oral oncology 70 (2017): 23-28.

Link: https://doi.org/10.1016/j.oraloncology.2017.05.004

GENOME SEQUENCE SUBMISSION IN GENBANK

[12/11/2020 – Current]

SARS-CoV-2 full genome sequence

SARS-CoV2 full genome sequence generated, has been deposited in GenBank (NCBI) under the accession number: MW242667

Link: https://www.ncbi.nlm.nih.gov/nuccore/MW242667.1/

TRAINING & CERTIFICATES

[29/06/2026 – 03/07/2026]

Certificate of completion for Summer School in Bioinformatics at the University of Bari, Italy

Attended summer school based on Microbiome data analysis using multiple Bioinformatics tool and pipelines in python and R-programming.

[18/03/2025 – 18/03/2025]

Certificate for completing training workshop on SuperComputer OCCAM - Torino

Completed certified training on the OCCAM SuperComputer, focusing on the application of high-performance computing for bioinformatics pipeline development and large-scale dataset analysis

[04/04/2016 – 18/04/2016]

Certificate for completing Training on TruSight Inherited Disease Sequencing Panel NGS Library preparation

Completed hands-on training on NGS library preparation using the TruSight Inherited Disease Sequencing Panel kit (Cat# FC-121-0205) for sequencing samples on MiSeq, Illumina at the Centre for Genomic Sciences, Rehman Medical Institute, Peshawar, Pakistan.

[13/06/2012 – 21/12/2012]

Certificate for completing Internship during Bachelors study program

Completed an internship research study during my Bachelors program (BSc Hons. Biotechnology & & Genetic Engineering) on the given topic of "Effect of Polyamines on invitro organogenesis in Sugarcane (*Saccharum officinarum L.*)" at the Biotechnology Laboratory, Nuclear Institute for Food and Agriculture, Peshawar, Pakistan.

Link: www.nifa.org.pk

RESEARCH INTERESTS

Bioinformatics | Genomics, metagenomics | Transcriptomics | RNA-Seq | Single-Cell and Spatial Transcriptomics | Computational Biology | Gene Expression Analysis | Multi-Omics Integration

RESEARCH SKILLS

Wet lab skills

Molecular techniques;

- sample processing for DNA/RNA extraction (various sources)
- Qubit quantification assays
- Gel electrophoresis
- PCR amplifications
- Allele-Specific PCR (AS-PCR)
- Next Generation Sequencing, NGS library preps on targeted and custom-designed panels
- Amplicon sequencing (for targeted regions)

Microbiology techniques;

- Culture media,
- Sterilization techniques
- Culture inoculation & incubation,
- Culture monitoring and downstream processing
- Working experience in BSL-3 lab for Mycobacterium tuberculosis DNA extraction

Plant tissue culture/in vitro propagation techniques,

- Murashige and Skoog medium (MS) preparation
- Sterilization techniques
- inoculation of explant
- Incubation & observation for study
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Dry-lab skills

R and python programming (data analysis, bioinformatics pipeline)

Bioinformatics tools: python (pandas, numpy, scipy, sparcc), R (clusterprofiler, DOSE, dplyr, ggplot2)

Docker> building docker images and to run docker containers

Bash scripting for analysis pipeline automation on Linux

Bioinformatics analysis pipeline tools including;

FastQC & Trimmomatic

Burrows-Wheeler Alignment (BWA)

Multiple sequence allignment (Clustal Omega)

MarkDuplicates (Picard)

Genome Analysis Toolkit (GATK) HaplotypeCaller

Illumina VariantStudio

Integrative Genomics Viewer (IGV)

MEtaGenome ANalyzer (MEGAN6)

QIIME2 for metagenomics analysis

Cytoscape for contructing and visualizing biological networks

NCBI tools & databases including BLAST, Primer-BLAST, dbSNP, ClinVar, GenBank, PubMed, SRA, Bioproject

Ensemble tools including genome browser, Variant Effect Predictor, Variant Recoder, BLAST/BLAT

Expression Atlas, for gene and protein expression

Primer3 for primer designing

UCSC tools like Insilco PCR, BLAT

SNPCheck

SKILLS

Microsoft Word / Microsoft Excel / Microsoft Powerpoint / Google Drive / Social Media / Google Docs / Google / researchgates / Gmail

LANGUAGE SKILLS

Mother tongue(s): Pashto

Other language(s):

English

LISTENING C1 **READING** C1 **WRITING** C1

SPOKEN PRODUCTION C1 **SPOKEN INTERACTION** C1

Urdu

LISTENING C2 **READING** C2 **WRITING** C2

SPOKEN PRODUCTION C1 **SPOKEN INTERACTION** C1

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

RECOMMENDATIONS

Name: Prof. Dr. Aqib Iqbal | Professor, Department of Agronomy, Abdul Wali Khan University Mardan, Pakistan
Respected Prof. Aqib Iqbal was my Master's thesis supervisor. He previously served as an Associate Professor at the Institute of Biotechnology & Genetic Engineering, The University of Agriculture, Peshawar, Pakistan and was later designated as a Professor at the Abdul Wali Khan University Mardan, Pakistan.
Email: aqibiqbal.aup@gmail.com