

Muhammad Haris

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EDUCATION

BS Biotechnology

Government College University Faisalabad (GCUF)

Faisalabad, Pakistan

Nov. 2021 - July 2025

CGPA: 3.73/4

Thesis: Identification of Novel Therapeutic Targets for Hypertrophic Cardiomyopathy (HCM) Using RNA-seq Data Analysis

RESEARCH EXPERIENCE

Research Assistant

Functional Genomics & Tissue Culture Lab, GCUF

Faisalabad, Pakistan

Sept. 2024 - Current

- Working on Single-cell RNA sequencing analysis to decipher gene expression in individual diseased cells.
- Specialized in maize cell line generation via micropropagation, producing 3 genetically identical lines from a single callus for food safety research.
- Designed and deployed Pakistan's first dedicated Hypertrophic Cardiomyopathy [drug database](#).
- Provided hands-on training to 6 undergraduate students in tissue culture and molecular biology.
- Worked on 6 manuscripts spanning NGS data analysis, tissue culture, database development, and plant biotechnology under climate change.

Summer Research Fellow

International Center for Chemical and Biological Sciences (ICCBS), University of Karachi

Karachi, Pakistan

June 2025 - July 2025

- Performed DNA library preparation and WES data analysis for Acute Myeloid Leukemia, identifying 884 novel high-impact variants using a custom Linux- and R-based bioinformatics pipeline.

Research Intern

Ayub Agricultural Research Institute (AARI)

Faisalabad, Pakistan

July 2024 - August 2024

- Learned molecular biology (DNA extraction, PCR, PAGE, Microscopy) and tissue culture techniques.

Research Intern

Functional Genomics & Tissue Culture Lab, GCUF

Faisalabad, Pakistan

Jan. 2023 - June 2024

- Trained in advanced laboratory techniques, including DNA extraction, PCR/qPCR, PAGE, microscopy, plant tissue culture, microbial isolation, and biochemical enzyme assays.

SKILLS

Biotechnology: Tissue Culture, DNA extraction, qPCR, PCR, Gel Electrophoresis, Bacterial Isolation, Microbiological Techniques, Spectrophotometry, Biochemical Enzyme Analysis, Physiological Plant Health Analysis, Pot Experiment, Plant Extract Preparation

Bioinformatics: scRNA-seq Analysis, Variant Calling, WES & NGS Data Analysis, In-silico Primer Designing, In-silico Vector Designing, Phylogenetic Analysis, Web & Database Development

Languages: LINUX, R, SQL, HTML, CSS, JS, and PHP

Soft Skills: Strong communication, Teamwork, Leadership, Critical Thinking.

CURRENT PROJECTS

Iron Nanoparticles Mitigate Textile Wastewater Toxicity in Wheat by Reprogramming Stress-Responsive Transcriptomes

- Developing and testing iron nanoparticles (biological and chemical synthesis) for industrial wastewater remediation and stress mitigation in wheat; demonstrating that biologically synthesized nanoparticles significantly improve plant growth and tolerance by transcriptomics reprogramming

PUBLICATIONS

- **HCMdrugs: A web-based database cataloging the drugs available for the treatment of Hypertrophic Cardiomyopathy (HCM)**
Journal of Computational Biophysics and Chemistry (2026) | Published | [DOI](#)
M. Haris, S. Rahman, M. T. Ul Qamar, F. Azeem*
- **Tissue Culture Optimization: Maize Callus Induction and Factors Affecting the Callus Efficiency**
Integrative Plant Biotechnology (2025) | Published | [DOI](#)
M. Haris, S. Rasheed, S. Rahman, I. Fatima, A. Mazhar, F. Azeem *
- **Perspectives of Plant-Microbes and Nanotechnology against abiotic stress tolerance under climate change conditions**
Royal Society of Chemistry (2025) | Under Review
M. Haris, T. Shaheen, S. Zahra, & M. R. Ansari. *

TALKS & PRESENTATIONS

- Oral Presentation on “**Sustainable Reuse of Cadmium-Contaminated Textile Wastewater in Wheat Cultivation: A Nano-Physiological and Transcriptomic Perspective**” at BSP Biotechnology Congress - 2025 & “National Dialogue on Biotechnology” at the University of Agriculture, Faisalabad | **16-18th Dec 2025.**
- Talk on “**Importance of Biodiversity for One Earth**” at One-day Seminar on Biodiversity for One Earth: Connecting Civilization through Food, Health, and Energy Resources under Fast Climatic Challenges in Sino-Pak Region, GCUF | **22nd May 2025**
- Presented the [HCMdrugs database](#) at the GCUF Innovation Expo 2025| **23-24 Jan 2025**
- Poster presentation on “**Natural Protein Nanofiber Filters: A Sustainable and Economically Beneficial Solution for Efficient Smog Filtration**” at One-day Symposium on Nanotechnology for Sustainable Environmental Applications, GCUF | **15th May 2024**

HONORS & ACHIEVEMENTS

- Prime Minister’s Letter of Appreciation for Environmental Activism
- Recognition at the International Youth Conference 9 (IYC 9), UCLA Luskin (USA)
- Delegate - Local Conference of Youth (LCOY) 2024
- Organized 25+ events on Environmental Awareness and Conservation as the President of Green Youth Movement (GYM) Club, GCUF

CONFERENCES & WORKSHOPS

6th Hands-On National Training Workshop on Advanced Bioinformatics and Recombinant DNA Technology

21/08/2024 – 22/08/2024

University of Central Punjab, Lahore

International Conference on Current Trends, Prospects, and Opportunities in Vaccine Research

28/02/2024–29/02/2024

Centre of Excellence in Molecular Biology, Lahore

REFEREES

Prof. Dr. Sabir Hussain

Department of Environmental Sciences, GCUF

Professor

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Dr. Farrukh Azeem

Department of Bioinformatics and Biotechnology, GCUF

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Dr. Muhammad Tahir Ul Qamar

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Assistant Professor

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