

Dr. Rabail Zehra Raza

Assistant professor

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Profile

Dr. Rabail Zehra Raza is an Assistant Professor in the Department of Molecular Biology and Genetics, with a PhD in Bioinformatics from Quaid-i-Azam University, Pakistan. Her research focuses on comparative and evolutionary genomics, particularly regulatory variation in human enhancer regions and its role in gene expression and complex traits. She completed her MPhil–PhD at the National Center for Bioinformatics, investigating brain enhancers linked to human-specific neural features and evolutionary innovation. Dr. Rabail has published in leading journals on neuropsychiatric genetics, human evolution, and disease genomics. She was selected for the PAK-UK Education Gateway Programme, collaborating with the University of York, King’s College London, and the University of Birmingham. She teaches across undergraduate and postgraduate programs and mentors graduate and undergraduate researchers. She is awarded competitive funding and applies integrated computational and evolutionary frameworks to deepen insights into human adaptation and neurodevelopmental disorders.

Research Interest

Computational Genomics, Evolution, Phylogenetics, Adaptation, Gene Regulation

Selected Publications

Raza, R. Z.*, Raza, S., Naveed, S., & Ali, S. (2025). Evolution in neuropsychiatric cis-regulatory enhancers through human-specific neuronal mutations within transcription factor binding sites. *Biochimica et Biophysica Acta (BBA)-Proteins and Proteomics*, 141095.

Raza, R. Z.*, Nazir, F., & Abbasi, A. A. (2025). Genetic Foundations of Human Brain Evolution: A Study of IRX3-Associated Human Accelerated Enhancer and the P422L Mutation. *Evolutionary Biology*, 52(3), 182-196.

Nadeem, H., Jamal, S. B., Basheer, A., Bakhtiar, S. M., Faheem, M., Aziz, T., ... & **Raza, R. Z.*** (2025). Genetic Insights into Facial Variation and Craniofacial Development: Unraveling the Interplay of Genes, Expression Patterns, and Evolutionary Significance. *Molecular Biotechnology*, 67(12), 4609-4623.

Raza, R. Z.*, & Abbasi, S. W. (2022). An evolutionary insight into the heterogeneous severity pattern of the SARS-CoV-2 infection. *Frontiers in Genetics*, 13, 859508.

Zehra, R., & Abbasi, A. A. (2018). Homo sapiens-specific binding site variants within brain exclusive enhancers are subject to accelerated divergence across human population. *Genome biology and evolution*, 10(3), 956-966.

Grants/Awards/Achievements

- Delegate, STEM Faculty Training under the PAK-UK Education Gateway Programme (Cohort-I), King's College London, United Kingdom, 2025.
- Recipient of the Start-up Research Grant (SRGP), Higher Education Commission, 2020.
- Recipient of the Indigenous Scholarship for MPhil leading to PhD, Higher Education Commission (HEC), Pakistan, 2014-2018.
- Recipient of the Vice-Chancellor's silver medal in undergraduate, 2012.
- Member Society for the Study of Evolution (SSE) and European Society of Evolutionary Biology (ESEB).