

# Masood Ur Rehman Kayani

Associate Professor  
School of Interdisciplinary Engineering & Sciences

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Contact:



## About

Dr. Masood Ur Rehman Kayani is working as Associate Professor in the School of Interdisciplinary Engineering & Sciences. Dr. Masood Ur Rehman Kayani has a PhD in Bioinformatics. Dr. Masood Ur Rehman Kayani has published 27 research articles & conference papers having a citation count of 356, carried out 4 projects and filed 0 intellectual property.

## Qualifications

<b>PhD in Bioinformatics</b> Tsinghua University , China	2012 - 2018
<b>MS in Molecular Biology</b> COMSATS Institute of Information Technology , Pakistan	2008 - 2010
<b>BS in Bioinformatics</b> COMSATS Institute of Information Technology , Pakistan	2004 - 2008

## Experience

<b>Associate Professor</b> School of Interdisciplinary Engineering & Sciences	2025- Present
<b>Assistant Professor</b> School of Interdisciplinary Engineering & Sciences	2023 - 2023
<b>Assistant Professor</b> Capital University Of Science and Technology (CUST) , Kahuta Road Islamabad, Pakistan.	2022 - 2023
<b>Belt and Road Young Scientist</b> Xinhua Hospital, Shanghai China , School of Medicine Shanghai Jiao Tong University, Shanghai, China	2019 - 2022
<b>International Exchange Postdoctoral Researcher</b> Shanghai Institute of Immunology, School of Medicine, Shanghai Jiao Tong University , Shanghai, China	2019 - 2021

Research Projects

National Projects

In Data development of Breast Cancer Recurrence (BCR) Signature: A way towards Precision Oncology-Pathology Framework at NUST. Funding Agency: NUST Amount: PKR 1,000,000.00 Status: Approved_inprocess	2024
ARG-PRISM: Machine Learning-based framework for precise identification of antibiotic resistance genes from metagenomes Funding Agency: NUST Amount: PKR 1,000,000.00 Status: Approved_inprocess	2024
From Pandemic Response to Future Preparedness: Integrating Science and Policy for Collaborative Healthcare Management Funding Agency: INGSA-Asia Amount: PKR 206,910.00 Status: Approved_inprocess	2023
NUST Biomedical Data Bank (NBDB); A Roadmap to Personalized Medicine (Phase-I) Funding Agency: NUST Amount: PKR 1,000,000.00 Status: Completed	2023

International Projects

Research Articles

Efficient De Novo Assembly and Recovery of Microbial Genomes from Complex Metagenomes Using a Reduced Set of k-mers Hajra Qayyum Muhammad Faheem Raziq Haseeb Manzoor Syed Shujaat Ali Zaidi Amjad Ali Masood Ur Rehman Kayani Interdisciplinary Sciences: Computational Life Sciences, Pages 1-14 Impact Factor: 3.900   Quartile: 1 DOI: 10.1007/s12539-025-00722-6	2025
Prioritizing gut microbial SNPs linked to immunotherapy outcomes in NSCLC patients by integrative bioinformatics analysis Muhammad Faheem Raziq Nadeem Khan Haseeb Manzoor Shahzad Rasool Mehak Rafiq Masood Ur Rehman Kayani Lisu Huang Hafiz Muhammad Adnan Tariq Journal of Translational Medicine , Volume:23, Issue:1, Article Number: 343 Impact Factor: 6.100   Quartile: 1 DOI: https://doi.org/10.1186/s12967-025-06370-0	2025
Evaluating the potential of assembler-binner combinations in recovering low-abundance and strain-resolved genomes from human metagenomes Hajra Qayyum Muhammad Sarfraz Amjad Ali Masood Ur Rehman Kayani Heliyon , Volume: 11, Issue: 2, Article Number: e41938, Pages: 15 Impact Factor: 3.4   Quartile: 1 DOI: https://doi.org/10.1016/j.heliyon.2025.e41938	2025
MiCK: a database of gut microbial genes linked with chemoresistance in cancer patients Muhammad Shahzaib Muhammad Muaz Muhammad Hasnain Zubair Masood Ur Rehman Kayani Database: The Journal of Biological Databases and Curation, Vol. 2024: article ID baae124 Impact Factor: 3.4   Quartile: 1 DOI: 10.1093/database/baae124	2024
Longitudinal analysis of exposure to a low concentration of oxytetracycline on the zebrafish gut microbiome Masood ur Rehman Kayani Kan Yu Yushu Qiu Xiaogang Yu Lei Chen Lisu Huang Frontiers in Microbiology , Volume 13, Article Number 985065 Impact Factor: 6.064   Quartile: 1   Citations: 7 DOI: 10.3389/fmicb.2022.985065	2022

<b>Genome-Resolved Characterization of Structure and Potential Functions of the Zebrafish Stool Microbiome</b> <i>Masood ur Rehman Kayani Syed Shujaat Ali Zaidi Ru Feng Kan Yu Yushu Qiu Xiaogang Yu Lei Chen Lisu Huang</i> <i>Frontiers in Cellular and Infection Microbiology</i> , Volume 12, Article Number 910766 <b>Impact Factor:</b> 5.7   <b>Quartile:</b> 1   <b>Citations:</b> 6 <b>DOI:</b> 10.3389/fcimb.2022.910766	2022
<b>Patients with Primary and Secondary Bile Duct Stones Harbor Distinct Biliary Microbial Composition and Metabolic Potential</b> <i>Ru Feng Tianyu Zhang Masood ur Rehman Kayani Zhengting Wang Yao Shen Kenn Liu Su Kouken Bielike Lei Chen</i> <i>Frontiers in Cellular and Infection Microbiology</i> , Volume 12, Article Number 881489 <b>Impact Factor:</b> 5.7   <b>Quartile:</b> 1   <b>Citations:</b> 11 <b>DOI:</b> 10.3389/fcimb.2022.881489	2022
<b>Soil pH: a key edaphic factor regulating distribution and functions of bacterial community along vertical soil profiles in red soil of pomelo orchard</b> <i>Muhammad Atif Muneer Wei Hou Jian Li Xiaoman Huang Masood ur Rehman Kayani Yuanyang Cai Wenhao Yang Liangquan Wu Baoming Ji Chaoyuan Zheng</i> <i>BMC Microbiology</i> , Volume 22, Issue 1, Article Number 38 <b>Impact Factor:</b> 4.2   <b>Quartile:</b> 2   <b>Citations:</b> 50 <b>DOI:</b> 10.1186/s12866-022-02452-x	2022
<b>Characterization of the Gastrointestinal and Reproductive Tract Microbiota in Fertile and Infertile Pakistani Couples</b> <i>Ammara Manzoor Saira Amir Farzana Gul Muhammad Abubakar Siddique Masood ur Rehman Kayani Syed Shujaat Ali Zaidi Sundus Javed Syed Tahir Abbas Shah Arshan Nasir</i> <i>Biology</i> , Volume:11, Issue:1, <b>Impact Factor:</b> 5.168   <b>Quartile:</b> 1   <b>Citations:</b> 6 <b>DOI:</b> 10.3390/biology11010040	2021
<b>Environmental concentrations of antibiotics alter the zebrafish gut microbiome structure and potential functions</b> <i>Masood ur Rehman Kayani Kan Yu Yushu Qiu Yao Shen Caixia Gao Ru Feng Xinxin Zeng Weiye Wang Lei Chen Huang Li Su</i> <i>Environmental Pollution</i> , Volume 278, Article Number 116760 <b>Impact Factor:</b> 9.988   <b>Quartile:</b> 1   <b>Citations:</b> 68 <b>DOI:</b> 10.1016/j.envpol.2021.116760	2021
<b>Prediction and analysis of metagenomic operons via MetaRon: a pipeline for prediction of Metagenome and whole-genome opeRons</b> <i>Masood ur Rehman Kayani Xuegong Zhang Younan Ouyang Imran Haider Shamsi Syed Shujaat Ali Zaidi</i> <i>BMC Genomics</i> , Volume 22, Issue 1, Article Number: 60 <b>Impact Factor:</b> 4.558   <b>Quartile:</b> 2   <b>Citations:</b> 2 <b>DOI:</b> 10.1186/s12864-020-07357-5	2021
<b>DNA phosphorothioate modification facilitates the dissemination of mcr-1 and blaNDM-1 in drinking water supply systems</b> <i>Hira Khan Mingkun Liu Masood ur Rehman Kayani Shakeel Ahmad Jingdan Liang Xiaohui Bai</i> <i>Environmental Pollution</i> , Volume 268, Part A, Article Number 115799 <b>Impact Factor:</b> 9.988   <b>Quartile:</b> 1   <b>Citations:</b> 11 <b>DOI:</b> 10.1016/j.envpol.2020.115799	2021
<b>Dynamics of the Salivary Microbiome During Different Phases of Crohn's Disease</b> <i>Tianyu Zhang Masood ur Rehman Kayani Liwen Hong Chen Zhang Jie Zhong Zhengting Wang Lei Chen</i> <i>Frontiers in Cellular and Infection Microbiology</i> , Volume 10, Article Number 544704 <b>Impact Factor:</b> 5.293   <b>Quartile:</b> 1   <b>Citations:</b> 29 <b>DOI:</b> DOI:10.3389/fcimb.2020.544704	2020
<b>Genome Sequences and Comparative Analysis of Two Extended-Spectrum Extensively-Drug Resistant Mycobacterium tuberculosis Strains</b> <i>Masood ur Rehman Kayani Yong-Chang Zheng Fu-Cun Xie Kai Kang Han-Yu Li Hai-Tao Zhao</i> <i>Frontiers in Pharmacology</i> , Volume 9, Article Number 1492 <b>Impact Factor:</b> 3.845   <b>Quartile:</b> 1   <b>Citations:</b> 3 <b>DOI:</b> 10.3389/fphar.2018.01492	2018
<b>Metagenomic analysis of basal ice from an Alaskan glacier</b>	2018

<p>Masood ur Rehman Kayani Shawn M. Doyle Naseer Sangwan Guanqun Wang Jack A. Gilbert Brent C. Christner Ting F. Zhu</p> <p><i>Microbiome</i> , Volume 6, Issue 1, Article Number 123</p> <p><b>Impact Factor:</b> 10.465   <b>Quartile:</b> 1   <b>Citations:</b> 25</p> <p><b>DOI:</b> 10.1186/s40168-018-0505-5</p>	
<p><b>Comprehensive analysis of circRNA expression bprofiles in humans by RAISE</b></p> <p>Lin Li Yong-Chang Zheng Masood ur Rehman Kayani Wen Xu Guanqun Wang Pei Sun Ning Ao Li-Na Zhang Zhao-Qi Gu Liang-Cai Wu Hai-Tao Zhao</p> <p><i>International Journal of Oncology</i> , Volume 51, Issue 6, Pages 1625-1638</p> <p><b>Impact Factor:</b> 3.333   <b>Quartile:</b> 2   <b>Citations:</b> 34</p> <p><b>DOI:</b> 10.3892/ijo.2017.4162</p>	2017
<p><b>The essential mycobacterial amidotransferase GatCAB is a modulator of specific translational fidelity</b></p> <p>Hong-Wei Su Jun-Hao Zhu Hao Li Rong-Jun Cai Christopher Ealand Xun Wang Yu-Xiang Chen Masood ur Rehman Kayani Ting F. Zhu Danesh Moradigaravand Huang Hairong Babak Javid Bavesh D. Kana</p> <p><i>Nature Microbiology</i> , Volume:1, Article Number 16147</p> <p><b>Impact Factor:</b> 0   <b>Quartile:</b> 4   <b>Citations:</b> 65</p> <p><b>DOI:</b> 10.1038/nmicrobiol.2016.147</p>	2016
<p><b>Transmitted extended-spectrum extensively drug-resistant tuberculosis in Beijing, China, with discordant whole-genome sequencing analysis results</b></p> <p>Hao Li Masood ur Rehman Kayani Yunting Gu Xiaobo Wang Ting F. Zhu Hongfei Duan Yifang Ma Hairong Huang Babak Javid</p> <p><i>Journal of Clinical Microbiology</i> , Volume 53, Issue 8, Pages 2781-2784</p> <p><b>Impact Factor:</b> 3.631   <b>Quartile:</b> 2   <b>Citations:</b> 12</p> <p><b>DOI:</b> 10.1128/jcm.00891-15</p>	2015
<p><b>Lack of Germ Line Changes in KISS1 and KAI1 Genes in Sporadic Head and Neck Cancer Patients of Pakistani Origin</b></p> <p>M Nazir Masood ur Rehman Kayani Faraz Arshad Malik Nosheen Masood Mahmood Akhtar Kayani</p> <p><i>Asian Pacific Journal of Cancer Prevention</i> , Volume 12, Issue 10, Pages 2767-2772</p> <p><b>Impact Factor:</b> 0.659   <b>Quartile:</b> 4</p> <p><b>DOI:</b> <a href="https://journal.waocp.org/article_25959_349ae5801bc6c2fbd18a1c6f0ec6b15.pdf">https://journal.waocp.org/article_25959_349ae5801bc6c2fbd18a1c6f0ec6b15.pdf</a></p>	2011

## Editorial Activities

<p><b>BMC Microbiology</b></p> <p>Reviewed Papers for Journals</p> <p><b>Impact Factor:</b> 4.0</p>	2025
<p><b>Animal Microbiome</b></p> <p>Reviewed Papers for Journals</p> <p><b>Impact Factor:</b> 4.9</p>	2025
<p><b>BMC Microbiology</b></p> <p>Edited Journal Issue / Proceeding / Book</p> <p><b>Impact Factor:</b> 4.0</p>	2025
<p><b>Briefings in Bioinformatics</b></p> <p>Reviewed Papers for Journals</p> <p><b>Impact Factor:</b> 6.8</p>	2025
<p><b>BMC Microbiology</b></p> <p>Edited Journal Issue / Proceeding / Book</p> <p><b>Impact Factor:</b> 4.2</p>	2025
<p>Edited Journal Issue / Proceeding / Book</p> <p><b>Impact Factor:</b> 4.2</p>	2024
<p><b>BMC Microbiology</b></p> <p>Edited Journal Issue / Proceeding / Book</p> <p><b>Impact Factor:</b> 4.0</p>	2024
<p><b>BMC Microbiology</b></p> <p>Edited Journal Issue / Proceeding / Book</p> <p><b>Impact Factor:</b> 4.2</p>	2024
<p><b>BMC Microbiology</b></p>	2024

Reviewed Papers for Journals	
<b>Impact Factor: 4.2</b>	
<b>BMC Microbiology</b>	2024
Edited Journal Issue / Proceeding / Book	
<b>Impact Factor: 4.2</b>	
<b>BMC Microbiology</b>	2024
Edited Journal Issue / Proceeding / Book	
<b>Impact Factor: 4.2</b>	
<b>BMC Microbiology</b>	2024
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<b>BMC Microbiology</b>	2024
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<b>Impact Factor: 4.2</b>	
<b>BMC Microbiology</b>	2024
Edited Journal Issue / Proceeding / Book	
<b>Impact Factor: 4.2</b>	
<b>BMC Microbiology</b>	2024
Edited Journal Issue / Proceeding / Book	
<b>Impact Factor: 4.2</b>	
<b>Briefings in Bioinformatics</b>	2023
Reviewed Papers for Journals	
<b>Impact Factor: 14</b>	
<b>BMC Microbiology</b>	2023
Edited Journal Issue / Proceeding / Book	
<b>Impact Factor: 4.2</b>	
<b>Comparative Biochemistry and Physiology D-Genomics &amp; Proteomics</b>	2023
Reviewed Papers for Journals	
<b>Impact Factor: 3.0</b>	