

# 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 <i>Hajra Qayyum Muhammad Faheem Raziq Haseeb Manzoor Syed Shujaat Ali Zaidi Amjad Ali Masood Ur Rehman Kayani</i> <i>Interdisciplinary Sciences: Computational Life Sciences</i> , 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 <i>Muhammad Faheem Raziq Nadeem Khan Haseeb Manzoor Shahzad Rasool Mehak Rafiq Masood Ur Rehman Kayani Lisu Huang Hafiz Muhammad Adnan Tariq</i> <i>Journal of Translational Medicine</i> , Volume:23, Issue:1, Article Number: 343 Impact Factor: 6.100   Quartile: 1 DOI: <a href="https://doi.org/10.1186/s12967-025-06370-0">https://doi.org/10.1186/s12967-025-06370-0</a>	2025
Evaluating the potential of assembler-binner combinations in recovering low-abundance and strain-resolved genomes from human metagenomes <i>Hajra Qayyum Muhammad Sarfraz Amjad Ali Masood Ur Rehman Kayani</i> <i>Heliyon</i> , Volume: 11, Issue: 2, Article Number: e41938, Pages: 15 Impact Factor: 3.4   Quartile: 1 DOI: <a href="https://doi.org/10.1016/j.heliyon.2025.e41938">https://doi.org/10.1016/j.heliyon.2025.e41938</a>	2025
MiCK: a database of gut microbial genes linked with chemoresistance in cancer patients <i>Muhammad Shahzaib Muhammad Muaz Muhammad Hasnain Zubair Masood Ur Rehman Kayani</i> <i>Database: The Journal of Biological Databases and Curation</i> , 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 <i>Masood ur Rehman Kayani Kan Yu Yushu Qiu Xiaogang Yu Lei Chen Lisu Huang</i> <i>Frontiers in Microbiology</i> , 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><i>Masood ur Rehman Kayani Shawn M. Doyle Naseer Sangwan Guanqun Wang Jack A. Gilbert Brent C. Christner Ting F. Zhu</i>  <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>	2017
<p><b>Comprehensive analysis of circRNA expression bprofiles in humans by RAISE</b></p> <p><i>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</i>  <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><i>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</i>  <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><i>Hao Li Masood ur Rehman Kayani Yunting Gu Xiaobo Wang Ting F. Zhu Hongfei Duan Yifang Ma Hairong Huang Babak Javid</i>  <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><i>M Nazir Masood ur Rehman Kayani Faraz Arshad Malik Nosheen Masood Mahmood Akhtar Kayani</i>  <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_349ae5801bc6c2fbdc18a1c6f0ec6b15.pdf">https://journal.waocp.org/article_25959_349ae5801bc6c2fbdc18a1c6f0ec6b15.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>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>	