

Dr. Mohammed Ziaur Rahman is a Senior Scientist in the Infectious Diseases Division at icddr,b. He is the founder of the One Health Laboratory and the Head of the Programme for Respiratory Infections at icddr,b. With over 18 years of experience in infectious disease research, he has led a team of more than 30 junior and mid-level scientists. Dr. Zia completed his B.Sc. (Hons) and M.Sc. in Microbiology from the University of Dhaka, Bangladesh. He completed his Ph.D. through a University of Bergen/University of Dhaka sandwich program, supported by a NUFU, Norway research fellowship.

During his career, Dr. Zia has made fundamental contributions to understanding enteric bacterial pathogens, particularly *Shigella*, *Escherichia*, and *Vibrio cholerae*. His early research focused on the phenotypic and genotypic diversity of environmental *Shigella*-like bacteria. He uncovered critical mechanisms of interspecies horizontal gene transfer between *Shigella* and *Escherichia* species, serological cross-reactivity among environmental strains, and the survival dynamics of waterborne pathogens in aquatic ecosystems. Dr. Zia expanded his bacteriological work to clinical and community surveillance of major diarrheal pathogens, investigating *V. cholerae*, *V. mimicus*, and *V. parahaemolyticus*, monitoring antimicrobial resistance profiles, and tracking clonal divergence in *V. cholerae*. Integrating these insights into modern surveillance, he has advanced genomic methodologies to detect and characterize bacterial pathogens directly from clinical and environmental samples for public health monitoring of disease outbreaks.

In addition to his initial research on environmental microbiology and enteric pathogens, he serves as the focal researcher for developing diagnostic methodologies, including a culture-independent, whole-genome Next-Generation Sequencing (NGS) platform for RG4 pathogens such as Nipah virus, as well as highly pathogenic SARS-CoV-2, influenza, norovirus, and rotavirus. As the Laboratory Lead for several studies funded by the NIH, USAID, CDC, CEPI, and the Wellcome Trust, he has taken the initiative on zoonotic virus reservoir dynamics, spillover mechanisms, vaccine design, and next-generation therapeutics.

Dr. Zia's work extends significantly into national health governance, emergency response, and policy development. During the COVID-19 pandemic, he was one of the advisors to the Government of Bangladesh COVID-19 Emergency Committee and co-established testing infrastructure across the country. His work fed real-time updates into early warning platforms for national policymakers. He is one of the PIs of the CEPI Centralized Laboratory Network. Dr. Zia has authored key national regulatory framework documents, including the National Laboratory Quality Manual, National Guidelines for Biosafety and Biosecurity of Medical Laboratories, and the National Guideline for Nipah Virus Management (3rd Edition).

Throughout his career, Dr. Zia has served as Principal Investigator or Co-Investigator on many research projects, collaborated with top-tier global institutions,

and mentored 30 MS, 5 PhD, and 2 postdoctoral scholars. He has authored more than 220 scientific articles, accumulating over 4600 citations with an h-index of 36, reflecting a ResearchGate Research Interest Score higher than 96% of global researchers.