

The 6th International Forum on Big Data for Sustainable Development Goals (FBAS 2026)

Session Proposal Template

<i>Session Title</i>	Environmental Exposure to Genomic Insight: Integrating Big Data on Pollution, Exposome, and Health to Accelerate the SDGs	
<i>Session Chair(s)</i>	<i>Name 1</i>	Prof. Dr. Abul Bashar Mir Md Khademul Islam
	<i>Affiliation</i>	Professor, Department of Genetic Engineering and Biotechnology, University of Dhaka, Dhaka 1000, Bangladesh. <i>PI & Group Leader of Epigenetics and Bioinformatics Lab.</i>
	<i>Profile (200-word limit)</i>	Prof. Islam is a Professor at the University of Dhaka with a Ph.D. in Bioinformatics from Pompeu Fabra University, Spain, including research at the University of Illinois at Chicago. He is also visiting fellow of the Research Informatics Core, University of Illinois at Chicago, USA. His expertise lies in medical biotechnology, genomics, and bioinformatics, focusing on epigenetic and genetic mechanisms of human diseases like cancer, diabetes, and arthritis. He has extensive experience in analyzing high-throughput data (NGS, single-cell omics, ChIP-seq, RNA-seq) and computational drug/vaccine design. With over 110 publications and a Google Scholar h-index of 39, his work bridges the gap between complex biological data and disease mechanisms. He is a recipient of the BAS-TWAS Young Scientist Award and has been a Visiting Research Scholar at UIC, USA. His lab develops bioinformatic tools like PLUTON and CHROMACS and AI supported tools, contributing significantly to the field of computational biology.
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<i>Session Chair(s)</i>	<i>Name 2</i>	Dr. Tasrina Rabia Choudhury
	<i>Affiliation</i>	Principal Scientific Officer & Quality Manager, Analytical Chemistry Laboratory (Accredited ISO/IEC 17025:2017), Chemistry Division, Atomic Energy Centre Dhaka, Bangladesh Atomic Energy Commission.
	<i>Profile (200-word limit)</i>	Dr. Tasrina Rabia Choudhury is a Principal Scientific Officer at the Bangladesh Atomic Energy Commission and a TWAS Young Affiliate (2019-2023). She is also the Executive Committee Member of TWAS TYAN. She holds a Ph.D. in Applied Chemistry from the University of Dhaka. Her research focuses on environmental impact assessment, heavy metal and microplastic pollution, ecological and health risk assessment, and the development of novel sorbents for water purification. She is the recipient of numerous prestigious awards, including the 2024 OWSD-Elsevier Foundation Award for SDG6, the BAS-Gold Medal (2018), and has been named in the Asian Top 100 Scientists for 2025. She serves as the Chief Scientific Investigator for an IAEA project on harmful algal blooms and leads a TWAS research grant on arsenic removal. With over 140 publications and extensive experience as a Lead Assessor for the Bangladesh Accreditation Board, she brings a unique perspective on quality-assured environmental data for policy-making.
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<i>Preferred Topics</i>	(1) Digital Intelligence Technologies Driving SDGs Transformation; (2) Scientific Monitoring and Evaluation with Big Data; (3) AI-Driven Innovation in Research Paradigms; (4) Strengthening Partnerships and Capacity Building.	

<p><i>Session Description</i> (200-word limit)</p>	<p>The post-2030 Sustainable Development Agenda demands a paradigm shift from fragmented environmental and health assessments to an integrated AI-driven exposome intelligence framework. This session introduces a transdisciplinary model linking environmental big data (heavy metals, microplastics, harmful algal blooms, radionuclides, climate stressors) with genomic and multi-omics health datasets to quantify how environmental exposures drive molecular reprogramming and disease burden.</p> <p>The session will explore:</p> <ol style="list-style-type: none"> 1. AI-based predictive modeling of pollution hotspots and exposure risk 2. Integration of environmental monitoring datasets with genomics, epigenomics, and transcriptomics 3. Linking geospatial environmental data with socio-economic and health indicators 4. Translating exposome–genome interactions into SDG monitoring tools 5. Building interoperable data infrastructures between environmental agencies and biomedical research centers <p>The session directly contributes to SDGs 3 (Health), 6 (Clean Water), 9 (Innovation), 13 (Climate), 14 (Life Below Water), and 15 (Life on Land). By bringing together environmental chemists, bioinformaticians, AI scientists, policymakers, and international organizations, this session aims to establish a scalable framework for digital intelligence-enabled sustainable development beyond 2030.</p>
<p><i>Expected outcomes</i> (50-word limit)</p>	<ul style="list-style-type: none"> • Formation of an international Exposome Intelligence Network • Roadmap for integrating environmental and genomic data into SDG monitoring systems • Development of AI-ready collaborative research proposals • Strengthened Global South–North partnerships in digital sustainability science

Please submit filled session proposal to fbas@cbas.ac.cn before **April 20, 2026**