



National Workshop on Bioinformatics for Sustainable Development in Agriculture and Health



*Dedicated to the 80th birth anniversary of
Professor Jamal Nazrul Islam*

Dates: 2-3 October 2019

Venue: Conference Room, Jamal Nazrul Islam Research Centre for Mathematical and Physical Sciences, Chittagong University, Chittagong, Bangladesh

Organized by:

**Jamal Nazrul Islam Research Centre for Mathematical and Physical Sciences,
University of Chittagong, Chittagong, Bangladesh**

in collaboration with

Bangladesh Bioinformatics and Computational Biology Association (BBCBA),
www.bbcba.org

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Program

Day-1. Wednesday (October 02, 2019)

09.00-10.00	Registration
10.00-11.00	Session 1: Inaugural session <ul style="list-style-type: none">• Welcome address: Professor Dr. Anjan Kumar Chowdhury, Convener, Workshop Organizing Committee and Director, Jamal Nazrul Islam Research Centre for Mathematical and Physical Sciences, University of Chittagong.• Address from BBCBA General Secretary: Professor Dr. AMAM Zonaed Siddique, Dept. of Pathology and Parasitology, Chittagong Veterinary and Animal Sciences University (CAVSU), Chittagong.• Keynote Speech from BBCBA President: Professor Dr. Md. Nurul Haque Mollah, Head of Bioinformatics Lab., Dept. of Statistics, Rajshahi University.

	<ul style="list-style-type: none"> • Speech of Special Guest: Ms. Sadaf Saaz Siddiqi, Member of Trustee Board, Brac University, Dhaka. • Speech of Special Guest: Professor Dr Safiul Alam, Dean, Faculty of Sciences, CU. • Speech of Special Guest: Professor Dr. Md. Mahbubur Rahman, Dean, Faculty of Biological Science, CU. • Speech of Chief Guest: Professor Dr. Shireen Akhter, Honorable Vice Chancellor, University of Chittagong. • Vote of thanks: Professor Dr. Dwaipayan Sikder, Member Secretary, Workshop Organizing Committee, Department of Biochemistry and Molecular Biology, CU.
11.00-11:15	Tea Break
11:15- 13:00	Technical Session 1: Chair: Professor Soma Chowdhury , Dept. of Statistics, Chittagong University (CU).
11:15-12:15	Topic-1: <i>Introduction to Bioinformatics for Sustainable Development in Agriculture and Health.</i> Resource Person: Dr. Md. Nurul Haque Mollah , Professor & Head of Bioinformatics Lab. (Dry), Dept. of Statistics, Rajshahi University (RU), Rajshahi
12:15-13:15	Topic-2: <i>The Role of Bioinformatics in Microbial Diseases Research.</i> Resource Persons: Dr. Munirul Alam , Fellow Am. Acad. Mic., Senior Scientist, icddr,b, Mohakhali, Dhaka
13:15 - 14:00	Lunch Break
14:00 - 16:00	Technical Session 2: Chair: Dr. Md. Manirul Islam , Professor, Dept. of Biochemistry and Molecular Biology, CU.
14:00-15:00	Topic-3: <i>The Role of Bioinformatics in Biotechnology</i> Resource Persons: Dr. AKM Moniruzzaman Mollah , Associate Professor of Biological Sciences & Head of Science and Math Program, Asian University for Women (AUW), Chittagong-4000.
15:00-16:00	Topic-4: <i>Bioinformatics for Understanding of Life Process.</i> Resource Person: Dr. Md. Abul Kalam Azad , Professor, Dept. of Genetic Engineering and Biotechnology, Shahjalal University of Science and Technology (SUST), Sylhet

16:00-16:15	<u>TEA Break</u>
16:15 - 18:15	Technical Session 3: Chair: Dr. Md. Atiar Rahman , Dept. of Biochemistry and Molecular Biology, CU.
16:15-17:15	<u>Topic-5:</u> <i>Next generation sequencing data: Analytical strategies and available software packages.</i> Resource Person: Dr. AMAM Zonaed Siddiki , Professor, Dept. of Pathology and Parasitology, CVASU, Chittagong
17:15-18:15	<u>Topic-6:</u> <i>The role of Statistics in Bioinformatics</i> Resource Person: Dr. Md. Nurul Haque Mollah , Professor, Bioinformatics Lab., Dept. of Statistics, Rajshahi University, Rajshahi

Day-2. Thursday (October 03, 2019)

9:30-11.0 0	Technical Session 4: Chair: Dr. Md. Al Forkan , Department of Genetic Engineering and Biotechnology, CU.
9:30-11:00	<u>Topic-7:</u> <i>Hands-on Training on Genomics Data Analysis for Identification of Biomarker Genes (*Genetic linkage ** QTL/eQTL analysis by IM/CIM, *** SNPs analysis by GWAS)</i> Resource Persons: Dr. Md. Mamun Monir and Prof. Dr. Md. Nurul Haque Mollah , Bioinformatics Lab., Dept. of Statistics, Rajshahi University, Rajshahi
11:00-11:15	Tea Break
11:15 - 13:15	Technical Session 5: Chair: Professor Dr. Md Abul Manchur , Department of Microbiology, CU. <u>Topic-8:</u> <i>Hands-on Training on Functional Genomics</i> (RNA-Interference Process and pathway Genes/Dataset Arrangements (BLAST)/ Multiple Alignment (BLAST, CLUSTEL-W)/ Phylogenetic Tree (Maximum likelihoods, Neighbor Joining Method)/Domain Analysis (Bioinformatics Server)/Motif Analysis (Bioinformatics Server)/Gene Structure Analysis (Bioinformatics Server)/Cis-Acting element analysis (Bioinformatics Server)/GO analysis (Chi-square test)/Regulatory Transcription Factor Analysis/Sub-cellular Location Analysis (Classification/Machine Learning Algorithm -> SVM)/Others Physicochemical Properties identification (Molecular Weight, PI) Resource Persons: Md. Parvez Mosharaf and Prof. Dr. Md. Nurul Haque Mollah , Bioinformatics Lab. (Dry), Dept. of Statistics, Rajshahi University, Rajshahi
13.15 - 14.00	Lunch Break

14:00 - 16:15	Technical Session 6: Chair: Dr. Lolo Wal-Marzan , Professor, Department of Genetic Engineering and Biotechnology, CU.
14:00 – 16:15	<p>Topic-8: <i>Hands-on Training on Gene Expression Analysis (Microarray & RNAseq) for Identification of Biomarker Genes</i> (Dataset arrangement (NCBI GEO)/DE Gene Identification using GEO2R (GEOquery, LIMMA package in R) online Server./Up regulated genes and Down regulated genes identification (Adjusted p-value and log2FC value)/ PPI Network (Using Cytoscape 3.7.1 & NetworkAnalyst, STRING database)/ Gene cluster Analysis (Cytoscape, MCODE plugin software)/ GO analysis (Using DAVID server)/ Hub Protein Identification from network analysis (Degree, Betweenness)/ Regulatory TF and Protein Network Analysis (JASPAR Database)/Protein-miRNA Network Analysis (TAR/miTar database)/Protein-Drug interaction Analysis (DrugBank database)/Protein-Chemical Network Analysis (Comparative Toxicogenomics Database (CTD))/Prognostic Analysis/Validation (Using SurvExpress/ OncoPrint/ Survival curve)/</p> <p>Resource Persons: Dr. Md. Manir Hossain Mollah¹, Md. Parvez Mosharaf² and Prof. Dr. Md. Nurul Haque Mollah², (1) Asian University for Women (AUW), Chittagong-4000. (2) Bioinformatics Lab. (Dry), Dept. of Statistics, Rajshahi University, Rajshahi</p>
16.15- 17.00	Session 7 (Closing Session): Chair: Dr Dwaipayan Sikder , Department of Biochemistry and Molecular Biology, CU. *Feedback, *BBCBA Membership drive *Certificate awarding ceremony

For registration as participants please phone:
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