

CURRICULUM VITAE OF

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1. EDUCATIONAL QUALIFICATIONS

Doctor of Philosophy (2012), University of Tokyo, Japan

- Field/Subject: Bioinformatics/Biostatistics, Department of Agriculture and Environmental Biology

Master of Science (2004, Exam held on 2006), University of Rajshahi, Bangladesh

- Field/Subject: Statistics, Department of Statistics

Bachelor of Science (2003, Exam held on 2005), University of Rajshahi, Bangladesh

- Field/Subject: Statistics, Department of Statistics

2. PROFESSIONAL EXPERIENCES

SL.	Designation	Institution/Organization	Date
1	Assistant Professor	Department of Public Health, Asian University for Women (AUW), Bangladesh	August 20, 2019– Present
2	Assistant Professor	Department of Biostatistics, Bangladesh University of Health Sciences, Dhaka-1216, Bangladesh, Website: http://www.buhs.ac.bd/	2016 – August 19, 2019
3	Training Coordinator	Bridge of Community development Foundation (BCDF), Dhaka, Bangladesh; Website: http://www.bcdf-bd.org/	May 2017 - Present
4	Post-doctoral Fellow	UKM Medical Molecular Biology Institute (UMBI), University Kebangsaan Malaysia (UKM), Kuala Lumpur, Malaysia	2013 - 2015

3. PROFESSIONAL TRAINING/CONFERENCE/WORKSHOP/SEMINAR

SL.	Title/Topic	Institution	Date
1	Statistical Analysis of Gene Expression Data for Identification of Some Disease Causing Genes (Invited Speaker)	Department of Statistics Rajshahi University	30 - 31 August, 2016

4. TEACHING EXPERIENCE

The list of courses that I taught to the undergraduate and graduate students at BUHS is given below:

For undergraduate courses

1) Principles of Biostatistics 2) Advanced Bioinformatics with Programming 3) Probability and probability distribution 4) Survey sampling and sample size 5) Sampling distribution and theory of estimation 6) Test of hypothesis, parametric, non-parametric and order statistics 7) Bivariate analysis of categorical and continuous data 8) Multivariate analysis of categorical and continuous data 9) Analysis of variance, co-variance and factorial analysis 10) Mathematical Preliminaries

For graduate courses

1) Basics of Biostatistics 2) Multivariate data analysis and statistical modeling 3) Analysis of variance, co-variance and factorial analysis 4) Statistical analysis using R and SPSS 5) Advance survey sampling techniques and design of experiments 6) Protocol development and presentation

Below is a list of the courses which I have been involved in teaching for the past few years at AUW:

1) Principles of Biostatistics 2) Data Analysis 3) Introduction to Bioinformatics 4) Genes and Genome 5) Advanced Bioinformatics with Programming 6) Computational Drug Discovery

5. RECENT RESEARCH ACTIVITIES

My principal research concern is on bioinformatics which is a multidisciplinary research field. It plays the key role to modernize bio-statistical and biotechnological researches. Currently I am focusing on high-throughput DNA/ RNA Sequence/SNP data analysis using Bioinformatics tools or develop bioinformatics algorithm to solve the complex biological problems. My research also focusses on the application of novel statistical techniques to the design, analysis and interpretation of data arising from public health and human disease studies.

6. RESEARCH AREA/INTEREST

- ✚ Statistical modeling for molecular OMICS (genomics, transcriptomics, proteomics, metabolomics, toxicogenomics, and so on) data analysis.

- ✚ Biomarker discovery by analyzing any type of biological datasets using statistics and bioinformatics.
- ✚ Biostatistics, Public health, Longitudinal Data Analysis, Survival Analysis, Epidemiological modeling, High-dimensional inference, nonparametric models.

7. RESEARCH WORK EXPERIENCE

1	<p>One-year research working experience is in the BSc (Honours) level with title 'A Statistical Investigation on Women Victim under Rajshahi City Corporation'.</p> <p>Supervisor: Dr. Papia Sultana, Professor, Department of Statistics, Rajshahi University, Bangladesh</p>
2	<p>One-year research working experience is in the MSc level with title 'Robust Estimation for Multivariate Normal Distribution by Minimizing Beta-Divergence and Some of Its Application'.</p> <p>Supervisor: Dr. Md. Golam Hossain, Professor, Department of Statistics, Rajshahi University, Bangladesh</p>
3	<p>Three years (2009-2012) research working experience at PhD label with title 'Robust inference and model diagnosis of microarray data by β-likelihood'. Department of Agriculture and Environmental Biology, Laboratory of Biometry and Bioinformatics, The University of Tokyo, Japan.</p> <p>Supervisor: Dr. Hirohisa Kishino, Professor, Department of Agriculture and Environmental Biology, Laboratory of Biometry and Bioinformatics, The University of Tokyo, Japan.</p>
4	<p>Two Years (2013-2015) Post-Doctoral research working experience on "Discovery of Diseases related Biomarkers using Bioinformatics" at UMBI, UKM, Malaysia.</p> <p>Supervisor: Professor Datuk Dr. A Rahman A Jamal, Professor, UKM Medical Molecular Biology Institute (UMBI), University Kebangsaan Malaysia (UKM), Kuala Lumpur, Malaysia</p> <p><u>Principal Activities</u></p> <ul style="list-style-type: none"> • Leadership of bioinformatics research group. • Data analysis under projects Higher Institution Centre of Excellence (HICoE) and Fundamental Research Grant Scheme (FRGS). • Delivered teaching of statistical analysis methods in R-programming to undergraduate students, graduate students, PHD students and researchers.

8. LANGUAGE PROFICIENCY

SL.	Language	Reading	Writing	Speaking	Listening
1	Bengali	Fluent	Fluent	Fluent	Fluent
2	English	Good	Good	Good	Good
3	Japanese	basic	basic	basic	basic

9. COMPUTING SKILLS

- ❖ Statistical Packages: R-programming, Python, RStudio, SPSS, MATLAB
- ❖ Data management: CPro, Excel
- ❖ Text processing: LaTeX, Ms Word, PowerPoint

10. PUBLICATIONS IN NATIONAL/INTERNATIONAL JOURNALS

1. Maternal determinants mediating the impact of household poverty on the nutritional status of children under-five years of age in Bangladesh. Journal of Food and Nutrition Bulletin, Accepted, Feb. 2021. *Ghosh, Probir; Das, Pritimoy; Goswami, Doli; Islam, Ausraful; Chowdhury, Sukanta; Mollah, Mohammad Manir; Harun, Golam; Akhtar, Zubair; Chowdhury, Fahmida. (ISI IF=1.9).*
2. Hypertension and sex related differences in mortality of COVID-19 infection: a systematic review. Arch Biotechnol Biomed. 2020, 4: 037-043. *Probir Kumar Ghosh, Mohammad Manir Hossain Mollah, ABM Alauddin Chowdhury, Nazmul Alam and Golam Dostogir Harun. (<https://www.heighpubs.org/hjb/abb-aid1020.php>).*
3. The risk of public mobility from hotspots of COVID-19 during travel restriction in Bangladesh. *Ghosh Probir, Mohammad Manir Hossain Mollah. (ISI IF = 1.26). (<https://pubmed.ncbi.nlm.nih.gov/32794462/>)*
4. Prevalence and Determinants of Adolescent Fertility: Analysis of 2014 Bangladesh Demographic Health Survey. DHS Working Paper No. 168. Rockville, Maryland, USA: ICF, 2020. *Alam, Nazmul, Manir Hossain Mollah, and Sharin Shahjahan Naomi.*
5. Robust identification of differentially expressed genes from RNA-seq data. Journal of Genomics 112(2). Pp. 2000-10, ELSEVIER, 2019. *Md. Shahjamana, Md. Manir Hossain Mollah, Md. Rezanur Rahman, S.M. Shahinul and Md. Nurul Haque Mollah, (ISI IF = 3.16).*
6. NFIX as a Master Regulator for Lung Cancer Progression. Front Pharmacol, August 2017. *Rahman NIA, Abdul Murad NA, Mollah MM, Jamal R, Harun R. (ISI IF = 4.40).*
7. Robust Significance Analysis of Microarrays by minimum β -divergence method. BioMed Research International, Jun 2017. *Md. Shahjaman, Nishit Kumar, M. Manir Hossain Mollah, Md. Shakil Ahmed, Anjuman Ara Begum, SM Shahinul Islam and Md. NurulHaqueMollah. (ISI IF = 2.48).*

8. 19-Gene Expression Signature as a Predictor of Survival in Colorectal Cancer. BMC Medical Genomic, 9, 2016, UK. *NurulAinin Abdul Aziz, Norfilza M. Mokhtar, Roslan Harun, M. Manir Hossain Mollah, Isa Mohamed Rose, Ismail Sagap, AzmiMohd Tamil, Wan Zurinah Wan Ngah and Rahman Jamal. (ISI IF = 2.85).*
9. A Hybrid One-Way ANOVA Approach for the Robust and Efficient Estimation of Differential Gene Expression with Multiple Patterns. PLoS One, 10, 2015, Spain. *M. Manir Hossain Mollah, Rahman Jamal, NorfilzaMohd Mokhtar, Roslan Harun and Md. NurulHaqueMollah. (ISI IF = 2.81).*
10. MicroRNA-200c and microRNA-31 regulate proliferation, colony formation, migration and invasion in serous ovarian cancer. Journal of Ovarian Research, 8, 2015, UK. *Fateen Farhana Ibrahim, Rahman Jamal, Saiful Effendi Syafruddin, Nurul Syakima Ab Mutalib, Sazuita Saidin, Reena Rahayu MdZin, M. Manir Hossain Mollah and Norfilza Mohd Mokhtar. (ISI IF = 2.46).*
11. β -empirical Bayes inference and model diagnosis of microarray data. BMC Bioinformatics, 13, 2012, UK. *M. Manir Hossain Mollah, M. Nurul Haque Mollah and Hirohisa Kishino. (ISI IF = 2.45).*
12. Robust Principal Component AnalysisBased on Robust Estimation ofMultivariate Normal Distribution. International Journal of Statistical Science (IJSS), 10, 19-35, 2010, Bangladesh. *M. Manir Hossain Mollah, M. G. Hossain and M. N. H Mollah.*
13. Robust Estimation for Multivariate Normal Distribution. Journal of applied Statistical Science, 16, 377-386, 2007. *M. Manir Hossain Mollah, M. G. Hossain and M. N. H. Mollah.*

11. SUBMITTED IN NATIONAL/INTERNATIONAL JOURNALS

1.	Prevalence and determinants of adolescent fertility: Analysis of Bangladesh Demographic Health Survey (2017-2018). <i>Nazmul Alam, Manir Hossain Mollah and Sharin Shahjahan Naomi.</i>
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12. ARTICLES IN PROGRESS

AY2021-2022: Articles in Progress:

1. Identification of Potentially Novel Candidate Biomarkers among Different Cancer Disease: A Bioinformatics Approach. *Sarita Goja, Alexis Christine and Md. Manir Hossain Mollah.*
2. Identification of key genes, important pathways shared by colorectal and endometrial cancer for potential drug discovery and their functional analysis. *Afsana Bhuiyan, shanjana shuravi shawon and Md. Manir Hossain Mollah.*
3. Prediction of therapeutic drugs for hub genes in COVID-19 via integrated bioinformatics analysis. *Sharmim, Mariam and Md. Manir Hossain Mollah.*
4. Network-Based Methods for Prediction of Biomarkers and Drug-Target Interactions in Colorectal Cancer. *Ethel Merry, Sweety A Kuldeep and Md. Manir Hossain Mollah.*

5. Identification and validation of key genes to predict therapeutic drugs in ovarian cancer. *Afrak Rashid, Yasmin Akter and Md. Manir Hossain Mollah.*
6. Integrated system biology approach for exploring potential drug-gene relationships in colon cancer. *Samiya Ahmed, Fairuz Lamisa Ahona and Md. Manir Hossain Mollah.*
7. Network-Based Approaches to Identify Novel Biomarkers targeted drugs in Lung Cancer. *Sadia Islam, Fabliha Raida, Rubaiya Akhter Marwa and Md. Manir Hossain Mollah*
8. Identification of candidate drugs for non-small lung cancer: A network-based Analysis. *Fahmida Hossain, Kashfia Mawa and Md. Manir Hossain Mollah*
9. Drug design for comorbidity-associated genes of Cancer with the SARS-CoV-2 viral disease. *Mahfara Hoque, Tasmiha Amin, Mahia Mohiuddin Quadrey and Md. Manir Hossain Mollah*
10. Identification of novel drug target in colon cancer: network and clustering approach. *Sohana Farhad, Afreen Zaman and Md. Manir Hossain Mollah*
11. Discovery of drugs for covid-19 comorbidity-associated genes with the SARS-CoV-2 viral disease. *Pham Mai Thi Ngoc Huyen, Jannatul and Md. Manir Hossain Mollah*
12. Prediction of abnormally expressed miRNA targets and drug effects in Lung Adenocarcinoma. *Supriya Dewanjees, Nujhat Tabassum Rahman and Md. Manir Hossain Mollah.*
13. Integrated Analysis Reveals Novel Key Biomarkers and Potential Candidate Drugs in Various Disease.. *Asmaul Hosna, Nusrat Fatema Binta Rahim and Md. Manir Hossain Mollah.*
14. Robust Bayesian approach for identification of differential gene expressions from paired samples and their applications to disclose therapeutic targets and agents for Head and Neck Cancer. *M. Manir Hossain Mollah, Md. Selim Reza, AKM Moniruzzaman Mollah and M. Nurul Haque Mollah.*
15. Identification of common biomarkers of ovarian and cervical cancer: A bioinformatic approach. *Zuhairia Ibnat, M. Manir Hossain Mollah and AKM Moniruzzaman Mollah.*

13. PUBLICATIONS IN NATIONAL AND INTERNATIONAL CONFERENCE/SEMINAR

SN	Title of the Paper with Author(s)	Name of the Proceedings, PP, Year and Country
1	Combining gene expression and microRNA profiling of human metastatic colorectal cancer for identification of putative gene targets. <i>Md. Manir Hossain Mollah , Aimi Syamima Abdul Manap, Roslan Harun, Rahman Jamal and Norfilza Mohd Mokhtar</i>	International Conference on Bioinformatics and Biostatistics for Agriculture, Health and Environment, 2017, Bangladesh

2	Robust Identification of Differentially Expressed Genes with Multiple Patterns from RNA-Seq using the Hybrid One-Way ANOVA Approach. M. Manir Hossain Mollah , Md. Jahangir Alam, Md. Shahjaman, Atul Chandra and Md. Nurul Haque Mollah	The Second International Conference on Theory and Applications of Statistics, 2015, Bangladesh
3	A Comparative Study on R Statistical Packages for Genome-Wide Association Analysis. Md. Jahangir Alam, Atul Chandra Singha, M. Manir Hossain Mollah , Md. Ripter Hossain, S.M. Shahinul Islam and Md. Nurul Haque Mollah.	The Second International Conference on Theory and Applications of Statistics, 2015, Bangladesh
4	Fold Change Approach for Robust Identification of Differential Gene Expressions. Md. Shahjaman, M. Manir Hossain Mollah , Anjuman Ara Begum, S. M. Shahinul Islam and Md. Nurul Haque Mollah.	The Second International Conference on Theory and Applications of Statistics, 2015, Bangladesh
5	Combining Gene Expression and microRNA profiling of Human Metastatic Colorectal Cancer Identifies Putative Gene Targets. Aimi Syamima Abdul Manap, Isa Mohamed Rose, Ismail Sagap, M. Manir Hossain Mollah , Roslan Harun, Rahman Jamaland and Norfilza Mohd Mokhtar.	1 st National Conference for Cancer Research & 5th Regional Conference on Molecular Medicine, 2013, Malaysia
6	A Gene-Expression Signature as a Predictor of Survival in Colorectal Cancer. Nurul Ainin Abdul Aziz, Norfilza Mohd Mokhtar, Roslan Harun, M. Manir Hossain Mollah , Isa Mohammed Rose, Ismail Sagap, Azmi Mohd Tamil, Wan Zurinah Wan Ngah and Rahman Jamal.	1 st National Conference for Cancer Research & 5th Regional Conference on Molecular Medicine, 2013, Malaysia
7	Improved power of detection of regulation hotspots by β -empirical Bayes approach. M. Manir Hossain Mollah , M. Nurul Haque Mollah and Hirohisa Kishino	XXVIth International Biometric Conference, 2012, Japan
8	Detection of irregular patterns of gene expression and diagnosis the model based on β -weight distribution. M. Manir Hossain Mollah , M. Nurul Haque Mollah and Hirohisa Kishino	The Biometric Society of Japan, 2012, Japan
9	Robust empirical Bayes inference of expression profiles under the stress. M. Manir Hossain Mollah , and Hirohisa Kishino	Japan Statistical Society, 2011, Japan
10	Beta-divergence approach to detect abnormal expression profiles. M. Manir Hossain Mollah and Hirohisa Kishino	Statistical Association Joint Conference, 2011, Japan
11	β -Divergence Approach for EBarrays as a tool of Model Diagnosis and Robustification. M. Manir Hossain Mollah , M. Nurul Haque Mollah and Hirohisa Kishino	Biometric society of Japan, 2010, Japan
12	Robust empirical Bayes detection of differentially expressed genes: β -divergence approach. M. Manir Hossain Mollah , M. Nurul Haque Mollah and Hirohisa Kishino	Japanese society for bioinformatics, 2010, Japan

13	Robustification of EBarrays for identification of differentially expressed genes". M. Manir Hossain Mollah , M. N. H. Mollah and Hirohisa Kishino (2010)	The first International Conference on Theory and Applications of Statistics, 2010, Bangladesh
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14. SUPERVISION OF THESES/PROJECTS

SN	Academic Program	Title	Awarding Year
1	MS in Biostatistics	Prevalence of Diabetes among dental Patients and Their Associated Risk factors	2018
2	MS in Biostatistics	Prevalence of neuropathic component of chronic low back pain and their relationship with spinal curvature, mobility, functional disability	2019
3	MS in Biostatistics	Association between smoking and the risk of type-II diabetes mellitus	2019

15. REFERENCES

1	Professor Dr. Hirohisa Kishino , Department of Agriculture and Environmental Biology, Laboratory of Biometry and Bioinformatics, The University of Tokyo, Japan Email: kishino@lbn.ab.a.u-tokyo.ac.jp
2	Professor Dr. Md. Golam Hossain , Convener of health research group, Department of Statistics, University of Rajshahi, Rajshahi-6205, Bangladesh Email: hossain95@yahoo.com
3	Professor Dr. A.K.M. Moniruzzaman Mollah , Head, Science and Math Program, Asian University for Women (AUW), Email: moniruzzaman.mollah@auw.edu.bd , Tel: 88 031 285 4980-7.

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Signature: