

*Curriculum Vitae*  
**KAZI MD MOSTAFIZUR RAHMAN, Ph.D.**

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## EDUCATION

- 2017      **Ph.D. in Biochemistry and Molecular Biology**  
University of Georgia, Athens, Georgia, USA (GPA 4.0/4.0)
- 2011      **Master of Science in Agriculture** (*Biological Chemistry track*)  
Yamaguchi University, Yamaguchi, Japan (*Grade-A*)
- 2008      **Master of Science in Microbiology**  
University of Dhaka, Dhaka, Bangladesh (*1<sup>st</sup> Class -4<sup>th</sup>*)
- 2007      **Bachelor of Science in Microbiology**  
University of Dhaka, Dhaka, Bangladesh (*1<sup>st</sup> Class- 6<sup>th</sup>*)

## PROFESSIONAL EXPERIENCES

- 01/2024-Present    Assistant Professor  
Department of Biochemistry & Microbiology  
North South University, Dhaka, Bangladesh
- 2019-2023      Instructor (Part-time)  
Hood College, Frederick, Maryland, USA
- 2017-2023      Postdoctoral Fellow  
National Cancer Institute (NCI), National Institutes of Health (NIH), Frederick, Maryland, USA

## AWARDS AND RECOGNITIONS

- 2022      Winner of the Fellows Award for Research Excellence (FARE) award - NIH
- 2021      “Best Paper Award” by Dhaka University Microbiology Alumni Association (DUMMA)
- 2017-2018      National Cancer Institute Technology Transfer Ambassador
- 2016      ‘Paper of the week’ recognition by the *Journal of Biological Chemistry* editorial board
- 2015      Travel Award for attending Society for Glycobiology meeting
- 2009-2011      Japanese Government (MEXT) Scholarship for the MS study at Yamaguchi University, Japan
- 2007-2008      Provost Award for 1<sup>st</sup> class marks in BS & MS in Microbiology, Univ. of Dhaka Bangladesh

## PUBLICATIONS

- **Kazi Rahman**, Isaiah Wilt, Alex A. Compton. SNARE mimicry by the CD225 domain of IFITM3 enables regulation of homotypic late endosome fusion. *bioRxiv.* 2024, doi: <https://doi.org/10.1101/2024.08.07.607021>-(*under review*)
- Nelly Mak, Dan Zhang, Xiaomeng Li, **Kazi Rahman**, Alex A. Compton, Richard D. Sloan. Alternative splicing expands the antiviral IFITM repertoire in Chinese horseshoe bats. *bioRxiv.* 2024, doi: <https://doi.org/10.1101/2023.12.04.569605> - *under review*)

- **Kazi Rahman**, Siddhartha A.K. Datta, Alex Compton. Cholesterol binds the amphipathic helix of IFITM3 and regulates antiviral activity. *Journal of Molecular Biology*. 2022; PMID: 35872070
- **Kazi Rahman**, Alex A. Compton. The indirect antiviral potential of long non-coding RNAs encoded by IFITM pseudogenes. *Journal of Virology*. 2021; PMID: 34319781
- Coomer C\*, **Kazi Rahman\***, Compton A. CD225 proteins: a family portrait of fusion regulators. *Trends in Genetics*, 2021, PMID: 33518406 (\*equal contribution)
- **Kazi Rahman\***, Coomer C\*, Majdoul S, Ding S, Padilla-Parraand S Compton A. Homology-guided identification of a conserved motif linking the antiviral functions of IFITM3 to its oligomeric state. *eLife*. 2020 PMID: 33112230 (\*equal contribution)
- Yadvinder S Ahi, Diborah Yimer, Guoli Shi, Saliha Majdoul, **Kazi Rahman**, Alan Rein, Alex A Compton. IFITM3 reduces retroviral envelope glycoprotein and is counteracted by glycoGag. *mBio* 2020; PMID: 31964738
- Msano Mandalasi, Hyun W Kim, David Thieker, M Osman Sheikh, Elisabet Gas-Pascual, **Kazi Rahman**, Peng Zhao, Nitin G Daniel, Hanke van der Wel, H Travis Ichikawa, John N Glushka, Lance Wells, Robert J Woods, Zachary A Wood, Christopher M West. A terminal  $\alpha$ 3-galactose modification regulates an E3 ubiquitin ligase subunit in *Toxoplasma gondii*. *J. Biol. Chem.* 2020; PMID: 32414843.
- **Kazi Rahman**, Msano Mandalasi, Peng Zhao, M Osman Sheikh, Rahil Taujale, Hyun W Kim, Hanke van der Wel, Khushi Matta, Natarajan Kannan, John N Glushka, Lance Wells, Christopher M West. Characterization of a cytoplasmic glucosyltransferase that extends the core trisaccharide of the *Toxoplasma* SKP1 E3 ligase subunit. *J. Biol. Chem.* 2017. PMID: 28928220
- **Kazi Rahman**, Peng Zhao, Msano Mandalasi, Hanke van der Wel, Lance Wells, Ira J Blader, Christopher M West. The E3 ubiquitin ligase adaptor protein Skp1 is glycosylated by an evolutionary conserved pathway that regulates protist growth and development. *J. Biol. Chem.* 2016, PMID: 26719340 (*Selected as JBC paper of the week due to significance of the work*)

## ADDITIONAL TEACHING AND MENTORING EXPERIENCES

### Teaching Certificate, National Institutes of Health, USA (2019)

- Achieved training on Active learning methods such as Bloom's Taxonomy of learning, create and assessment of student learning, overcoming discrimination, and bias in the classroom.
- Trained in management of online teaching, curriculum design, syllabus generation.

### Mentoring activities

- Mentored many summer undergraduate interns and two graduate students at NIH (2017- 2023)

### Volunteer activities

- Lead Judge (Oral presentation): 2021 Postbac Research Presentation, NIH, 2021
- Judge (poster presentation): Summer Undergrad. Research Program, OUHSC, April 2014
- Judge (Oral presentation): Summer Undergrad. Research Program, Univ. of Georgia, 2017

## RELEVANT LABORATORY AND COMPUTATIONAL BIOLOGY SKILLS

### Computational Biology Skills (GitHub link: <https://github.com/Kazi-Rahman20>)

- Experienced in utilizing public databases, including BLAST, Ensembl, UCSC genome browser; pathway analysis tools DAVID and IPA, RNA-seq analysis (hands-on training), Phylogenetic tree generation
- Experienced in utilizing basic Python packages for data analysis

### Wet-lab skills:

- **Gene editing:** Knocked out a retrogene using **CRISPR/Cas9** based method. Proficient in **RNAi**.
- **Molecular/Biochemical assays:** Developed a novel Sequence- and ligation-independent cloning (SLIC) method, proficient in traditional cloning, Immunoprecipitation, Co-IP & proteomics, enzyme assays.
- **Virology/Parasitology:** Experienced in infection assays with HIV-1, Influenza A, *Toxoplasma gondii*
- **Technical Skills:** HPLC and Flow cytometry

## CONFERENCES/PRESENTATIONS (SELECTED)

- Kazi Rahman** et al. IFITM3 binds to SNAREs fusogens and inhibits homotypic fusion of late endosomes. *Mechanisms of membrane fusion meeting 2023*, Germany (Poster)
- Kazi Rahman**. Membrane modulation by IFITM3 and its role in broad-spectrum antiviral activity. *Respiratory Virus Interest Group Seminar*, National Institutes of Health, 2022 (Talk)
- Kazi Rahman** et al. and Alex Compton. Cholesterol binds the amphipathic helix of IFITM3 and regulates antiviral activity, *ASM-Microbe meeting 2022*, Washington DC (Poster)
- Kazi Rahman** et al. and Alex Compton. Cholesterol binds the amphipathic helix of IFITM3 and regulates antiviral activity, *Retrovirology meeting 2022*, Cold Spring Harbor, NY (Poster)
- Kazi Rahman** and Alex A. Compton. IFITM3 inhibits HIV-1 infectivity by rigidifying cellular and viral membranes. *24th Annual HIV-DRP think tank meeting*, Frederick, Maryland 2021 (Talk)
- Kazi Rahman** et al and Alex A. Compton. The functional relationship between IFITM3 and cellular cholesterol homeostasis. *The American Soc. of Cell Biology Meeting*, Washington DC 2019 (Poster)
- Kazi Rahman**, Alex A. Compton. Evolutionary Guided Studies to Understand the Antiviral Mechanism of IFITM3. The annual *Con. on Retro. and Opportunistic infections (CROI)* 2019- Seattle, WA 2019 (poster)
- Kazi Rahman, James Mitchell. Video Monitoring and Analysis System for Vivarium Cage Rack. *2018 Technology Showcase, FNLCR Advanced Technology Research Facility*, Frederick, MD (Talk/poster)
- Kazi Rahman**, Msano Mandalasi, Peng Zhao, L. Wells, Ira J Blader, Christopher M West. Skp1 glycosylation in *Toxoplasma gondii*: A genetic and biochemical study on its evolutionary and functional role. *Ann. Meeting of the Soc. for Glycobiology*, San Francisco, USA, 2015 (Poster)
- Kazi Rahman**, Peng Zhao, L. Wells, Ira J Blader, Christopher M West. Importance of Skp1 prolyl hydroxylation and Glycosylation in *Toxoplasma* Oxygen Sensing and Growth. *25<sup>th</sup> Molecular Parasitology Meeting*, Woods Hole, Boston, USA, 2014 (Poster)
- Kazi Rahman**, Peng Zhao, L. Wells, Ira J Blader, Christopher M West. Prolyl hydroxylation and glycosylation of SCF-E3 ligase complex is important for protozoan growth and development. *American Soc. of Cell Biology meeting*, Philadelphia 2014 (Poster)
- Kazi Rahman**, et al and Hiroyuki Azakami. Degradation Mechanism of Unstable Mutant Lysozymes Expressed in *Saccharomyces cerevisiae*. *Annual meeting, Japan Society for Biochem. Biotech. and Agrochem. University of Tokyo*, 2010 (Talk)

## PROFESSIONAL ASSOCIATIONS

- 2020 - Associate Member, American Society for Virology (ASV)  
2018 – Member, CCR Fellows and Young Investigators Association (CCR-FYI)  
2017 - Member, National Postdoctoral Association (NPA)

## REFERENCES

**Alex Compton**, Ph.D.  
(Postdoctoral advisor)  
Principle investigator  
HIV Dynamics and Replication Program  
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