

**Zahin Islam**  
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## **EDUCATION**

**Case Western Reserve University** (Cleveland, Ohio) Fall 2018-Present  
Bachelor of Science in Systems Biology, Minor in Computer Science

### **Honors:**

- 1<sup>st</sup> Place, Michelson-Morley Research Competition in the Biological Sciences May 2021
- 2<sup>nd</sup> Place, Schubert Center Competition for Child-Focused Research May 2021
- Case Alumni Association Junior-Senior Scholarship (136 campus-wide awards) April 2021
- Barry M. Goldwater Scholarship (396 nationwide awards for ~5000 applicants) March 2020
- Best Insight, American Statistical Association DataFest (1 award for 11 teams) April 2019
- University Scholarship to Case Western Reserve University (\$24,000/year) May 2018

## **RESEARCH EXPERIENCE**

**National Cancer Institute**, Bethesda, MD Dec. 2020-Present  
Undergraduate Researcher

*Mentor: Javed Khan, M.D. Senior Investigator, Deputy Chief of Genetics, Head of Oncogenomics*

- Investigate the tumor microenvironment in neuroblastoma patients to elucidate how the tumor microenvironment changes under therapeutic pressure
- Develop image segmentation model for the downstream analysis and phenotyping of specific cellular subsets in imaging mass cytometry images

**Case Western Reserve University School of Medicine**, Cleveland, OH Sept 2018-Dec. 2020  
Undergraduate Researcher

*Mentor: Rafick Pierre-Sekaly, Ph.D. Richard J. Fasenmyer Professor of Immunopathogenesis*

- Characterize how cytokines and compounds affect the innate and adaptive immune systems in response to HIV latency across two flow cytometry samples
- Establish a baseline for the protein prior to HIV infection when stimulated by 15 compounds

**Stanford University School of Medicine**, Palo Alto, CA June 2020-Aug. 2020  
Summer Intern

*Mentor: Jeremy Dahl, Ph.D. Associate Professor of Pediatric Radiology*

- Create a physically realistic simulation of ultrasound signals generated by microbubbles with randomly selected and relevant properties
- Build a convolutional neural network to detect microbubbles using the aforementioned signals both in ideal and noisy conditions

**Ragon Institute of MGH, MIT, and Harvard**, Cambridge, MA  
Summer Intern

June 2019-Aug. 2019

*Mentor: Galit Alter, Ph.D.*

*Professor of Medicine*

- Design 22 flu antibodies by reengineering mouse and human antibodies
- Collaborate with four people to produce these antibodies through transfecting human cell lines for future experimentation

**National Heart, Lung, and Blood Institute**, Bethesda, MD  
Summer Intern

June 2018-Aug. 2018

*Mentor: Nihal Altan-Bonnet, Ph.D.*

*Senior Investigator, Laboratory of Host-Pathogen Dynamics*

- Determined that viral RNA suppresses an innate immune protein as RNA concentration increases
- Label an immune system protein using immunohistochemistry for confocal imaging

## **POSTERS/PUBLICATIONS**

Masih KE, Aiyetan P, **Islam Z**, Wei JS, Kuznetsov IB, Pore M, Osei-Dankyi T, Hewitt SM, Catchpoole D, Bocik W, Khan J. Prognostic Significance of The Tumor Immune Microenvironment for Pediatric Patients with Neuroblastoma. *In preparation.*

Masih KE, Ligon JA, Yates B, Shalabi H, Little L, **Islam Z**, Ombrello AK, Inglefield J, Nussenblatt V, Manion M, Khan J, Shah NN. Consequences of HLH-like CRS toxicities and concurrent bacteremia. *Pediatric Blood and Cancer.*

**Islam Z**, Masih KE, and Khan J. Prognosis Associated Tumor Immune Signatures in Pediatric Neuroblastoma. Poster session virtually presented at Case Western Reserve Intersections Poster Symposium; 2021 May 7; Cleveland, OH

**Islam Z**, Hyun D, Bam R, and Dahl JJ. Training Neural Networks to Detect Microbubbles *in silico* for Ultrasound Molecular Imaging. Poster session virtually presented at the Stanford Canary Crest Poster Symposium 2020; 2020 August 20; Palo Alto, CA.

**Islam Z**, Bayyurt-Kocabas B, and Altan-Bonnet N. Innate Immune Response to Viral Populations. Poster session presented at: Summer Poster Day 2018 at the National Institutes of Health; 2018 August 9; Bethesda, MD.

## **LEADERSHIP EXPERIENCE**

**Co-Coordinator for the Goldwater Scholar Community (GSC)**

March 2020-Present

The GSC aims to create a virtual community promoting scholars helping scholars

- Designed and implemented a virtual mentorship program for ~1300 Goldwater Scholars across the nation
- Arranged and moderated 3 live webinars about community-chosen topics for 204 Goldwater Scholars featuring 5 STEM speakers

### **President of Shadowing Case by Case (SCBC)**

November 2018- Present

SCBC's goal is to ensure students of all backgrounds can access pre-health opportunities

- Built partnership with 10 Cleveland Clinic medical departments to help CWRU students of all backgrounds access observation opportunities
- Organized the first ever CWRU Research Fair in Fall 2019, an event for 33 CWRU and Cleveland Clinic scientists to recruit 162 CWRU undergraduates for research
  - Built partnership with National Institutes of Health, Cornell University, and 3 on-campus research organizations to expand access to virtual research opportunities for the second virtual Research Fair in Fall 2020
  - Won CWRU's "Outstanding New Student Event" award

### **Editor in Chief – Discussions**

Sept. 2018-Present

Discussions is CWRU's research journal dedicated to promoting undergraduate research

- Established new standards for organization, communication, and personal conduct for a more efficient publication process
- Developed outreach plan to Cleveland Clinic and CWRU School of Medicine for promoting undergraduate research publication submissions

### **Undergraduate Adviser to the CWRU Department of Biology**

Sept. 2019-Present

- One of two biology undergraduates selected from all biology undergraduates (~150) to advise the CWRU Department of Biology about the undergraduate experience
- Work with the Dean of Biology to plan the CWRU Biology mixer and award ceremony for all biology undergraduates

### **RESEARCH SKILLS**

- **Wet-Lab:** Protein cloning, cell culturing, confocal microscopy, transfection
- **Programming:** Java, Python, R, Git, Pytorch