

# Bilal Shaikh

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## RESEARCH AND EXPERIENCE

JUNE 2018 –PRESENT

Ichaan School of Medicine, Karr Lab

### *Model Development*

- Working to develop the field of Whole Cell Modeling
- Use qualitative and quantitative data sources, in addition to background biology knowledge, to develop computational models of living cells
- Created marketing materials, including an informational video
- Responsible for oral and written communication of data, including through visual data presentation

2016-2018

Columbia University, Colecraft Lab

### *Cell Biology Research, Protein Trafficking*

- Investigated regulation and trafficking of voltage gated calcium ion channels
- Engineered selective E3 ligases to modulate expression and trafficking of channel subunits

SUMMER 2016

Hackensack-Meridian Health,

JSU Medical Center, Department of Oncology

### *Axelrod Summer Scholar*

- Selected for the Meridian Cancer Care Summer Scholarship Program
- Performed retrospective analysis on triple negative breast cancer patient outcomes
- Investigated correlations to specific pathology, immunohistochemical features, and genomic markers

SPRING 2016

Columbia University, Chemistry, Breslow Lab

### *Organic Synthesis Research, Nucleic Acids*

- Performed organic synthesis experiments with the goal of developing specific antiviral agents
- Learned chemistry techniques, in addition to computer and database tools

SUMMER 2015

Rutgers University, Hashmi Lab

### *Physiology Research, C. elegans Metabolism*

- Managed individual project under direction of Primary Investigator
- Responsible for experimental design and data collection

- Presented during lab meetings
- Worked on production of manuscript and documentation

2013-2015

Waksman Student Scholars Program

### *Biotechnology and Bioinformatics Research, L. punctata gene discovery*

- Completed an intensive three-week program in molecular biology, biotechnology, and bioinformatics
- Employed bioinformatics tools including BLAST, PDB searches, CN3D, and Jmol
- Led two teams, each of ten members for two years, providing theoretical and experimental instruction on a DNA sequencing project, leading to 48 unique sequence publications

## EDUCATION

EXPECTED 2019

**Columbia College,  
Columbia University,  
New York NY**

BACHELOR OF ARTS  
*Biochemistry and  
Computer Science*

## TEACHING

2017 – PRESENT

Columbia Department of Chemistry

### *Help Room Tutor*

- Tutored students in General Chemistry, Organic Chemistry, and Lab courses

2017 – PRESENT

Columbia Department of Chemistry

### *General Chemistry Lab Teaching Assistant*

- Assisted with experiment setup and techniques
- Provided feedback and graded assignments
- Addressed concerns and provided tutoring

## VOLUNTEER EXPERIENCE

2013-CURRENT

Holmdel First Aid Squad

### *Emergency Medical Technician*

- Evaluate patient status, provide effective treatment, and transport to appropriate hospitals
- Responsibilities involve extensive patient interaction and clinical decision making

2015

Jersey Shore University Medical Center  
*Emergency and Trauma Volunteer*

- Assisted in triage, provided basic treatment, and assisted in trauma treatment

2014

Riverview Medical Center  
*Pulmonary Rehabilitation Volunteer*

- Worked directly with patients to assist in exercise routines to rehabilitate lung function

## SKILLS

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COMPUTATIONAL    Python, Numpy,  
                              Scipy, BioPython,  
                              Java, C, Linux,  
                              BASH, git,  $\text{\LaTeX}$ ,  
                              Docker, Continuous  
                              Integration

LABORATORY    Mammalian Cell  
                              Culture, Molecular  
                              Biology, Flow  
                              Cytometry,  
                              Bioinformatics

RELEVANT COURSEWORK    Computational  
    Learning Theory,  
    Computational  
    Complexity,  
    Advanced  
    Programming, Data  
    Structures, Artificial  
    Intelligence