

Dariush Aligholizadeh

Education

- Aug 2020 | **B.S. in Biochemistry & Molecular Biology, B.S. Computer Science/Machine Learning**
May 2024 University of Maryland, Baltimore County, GPA: 3.908/4.00, Member: Honors College
Baltimore, MD
- Sept 2016 | **High School Diploma**
May 2020 Towson High School, GPA: 3.89/4.00, Rank: 14/326 (top 10%), SAT: 1450 (99th percentile)
Towson, MD

Research Experience

- May 2019 | **Undergraduate Researcher/Lab Manager**, Mentor: Dr. Mary Devadas
Present Towson University
Inorganic Chemistry and Nanoscience Lab.
 - First authoring paper on dendritic silver nanoplate synthesis
 - Second authoring paper on green synthesis of gold nanoplates and detection of nerve agents
 - Awarded the LSAMP Undergraduate Research Grant for the Summer 2021 session
 - Trained on and worked with UV-Vis Spectrophotometer, FT-IR, FT-Raman Spectrometer, Fluorescence Spectrophotometer, Scanning & Scanning/Transmission Electron Microscope, NMR, Flame AAS
- June 2021 | **Summer Research Intern**, Mentor: Dr. Alan Rein
Aug 2021 National Institute of Health, National Cancer Institute
Retroviral Assembly Lab
 - Trained in techniques for both general biological analyses, and specific viral analyses
 - Awarded the Cancer Research Training Award for the Summer 2021 session (2% acceptance)
 - Trained on Western Blot, Isothermal Titration Calorimetry, 2D NOESY NMR, Microscale Thermophoresis, switchSENSE
- May 2020 | **Computational Biologist**, Mentor: Dr. Rhoel Dinglasan
Present Remote/Online
Infectious Diseases Lab
 - Independently develop software and programs for specific lab
 - Developed database for quick Human ortholog lookup
 - Created chromatography graphing program, allows quick scanning/analysis of lateral flow assay strips
- Aug 2019 | **Research Assistant**, Mentor: Dr. Piotr Walczak
Jul 2020 University of Maryland, Baltimore & Johns Hopkins School of Medicine.
Neuroradiology Lab.
 - Worked on targeting of HIF1 protein and understanding its role in glioblastoma multiforme
 - Worked with ImageJ and other data analysis tools
 - Helped build convolutional neural network for cancer cell classification
 - Trained on and worked with CryoStat, compact MRI
- Oct 2020 | **Undergraduate Research Assistant**, Mentor: Dr. Govind Rao
Feb 2021 University of Maryland, Baltimore-County
Center for Advanced Sensor Technology Lab (CAST).
 - Researching ELISA technique for cheaper and more accurate antigen/biomarker detection

Scientific Presentations/Outreach

NIH Summer Intern Conference, August 2021

- Presented on HIV-1 Ψ -packaging signal research done with the NIH Retroviral Assembly Lab

LSAMP End-of-Summer Presentation, August 2021

- Presented on Anisotropic Synthesis research done with the Towson University Nanoscience Lab

ACS National Inorganic Chemistry Conference, April 2021

- Presented on Anisotropic Synthesis research done with the Towson University Nanoscience Lab

Baltimore County Public Schools Science Outreach, May 2021

- Was an outreach group leader for a virtual Nanoscience workshop designed for High School Students

UMBC Undergraduate Research & Creative Achievement Symposium, Jan 2021

- Presented on Anisotropic Synthesis research done with the Towson University Nanoscience Lab

Towson High School Science Outreach, Jan 2020 & Jan 2021

- Conducted outreach hosting the local High School in our Towson University lab and showing them our day-to-day tasks
- Demonstrated a chemical synthesis of Gold Nanoparticles and taught about the synthesis mechanism
- Helped interested teenagers see the applications of chemistry and become interested in research

Towson Undergraduate Research Conference, Sept 2020

- Presented on Nanoscience research done with the Towson University Nanoscience Lab

UMBC Undergraduate Research Symposium, Oct 2019

- Presented on Nanoscience research done with the Towson University Nanoscience Lab

Work Experience

July 2021 | **UMBC Review Lead STEM Editor/Reviewer**

Present University of Maryland, Baltimore-County

- Interviewed and accepted for a position as executive editor for the college-wide research journal
- Communicate with Professors, Undergraduates, and review publications for inclusion in the 2022 version of the UMBC Review

June 2018 | **Head Math Instructor**

Nov 2019 Kumon Math & Reading Center, Cockeysville, MD

- Led other math instructors and demonstrated excellent mathematical knowledge and communication skills
- Graded and tutored children ages 5 – 12 in mathematical skills

Scholarships & Grants

UMBC Merit Scholarship, Fall 2020 – Spring 2024

NIH Intramural Research Training Grant, Summer 2021

Louis-Stokes Alliance for Minority Participation Research Grant, Summer 2021

Awards & Honors

NIH Cancer Research Training Award, Summer 2021

Royal Microscopy Society International SEM Imaging Contest Selected Entry, June 2021

UMBC Dean's List, Spring 2021

UMBC President's List, Fall 2020

USABO National Semifinalist (top 7% of 10,000 competitors), May 2020

Baltimore County Music Festival Perfect Score Received, Cello & Piano Duet, Feb 2020

AP Scholar w/ Distinction, 2019 & 2020

Regional Chemistry Olympics 2nd place winner, Feb 2018

Regional Physics Olympics 3rd place winner, May 2019, May 2020

Colophon Literary Art Magazine Published Art (Towson High), 2018 – 2020

Leadership Experience

- Jan 2021 | **Devadas Nanoscience Lab Manager**
Present Towson University
 - Assist P.I. in laboratory management tasks
 - Mentoring junior lab members and teaching them how to use lab equipment
- Sept 2019 | **Biology Club President**
May 2020 Towson High School
 - Taught topics in Biology such as Immunology, Virology, and Anatomy & Physiology to members
 - Competed in the National Biology Olympiad, 4/13 members passed the test (7% national pass rate)
- Sept 2017 | **Programming Club President**
May 2020 Towson High School
 - Taught topics ranging from JavaScript and C++ to competitive programming to members
 - Competed in Lockheed Martin's annual CodeQuest competition in Bethesda, MD
 - Grew members to 4 kyu level on codewars.org (70th percentile rating in competitive programming)
- Sept 2018 | **Linguistics Club Vice-President**
May 2020 Towson High School
 - Organized and competed in linguistics competitions, furthered interest and knowledge of linguistics
 - Competed in the North American Computational Linguistics Open Competition, two passing members

Volunteer Experience

- 2016 | **Key Club**
2018 Towson High School
 - Completed various volunteering opportunities such as gymnasium cleaning, after-school tutoring, and blood drive preparation (80+ hours)
- Sept 2017 | **Dumbarton Middle School Math Help**
May 2018 Towson High School
 - Went after-school to tutor students in Mathematics at the local Middle School (40+ hours)
- May 2018 | **Greater Baltimore Medical Center Volunteer**
Aug 2018 Towson, MD
 - Helped patients undergoing chemotherapy and cancer treatment acclimate to a hospital environment

Special Skills

Programming Languages & Software

- Expert in Python, JavaScript, Advanced in C++/C and Java
- Have utilized popular libraries like OpenCV, Tensorflow, PyTorch, and frameworks like ReactJS/Node.js
- Experienced with both CellProfiler and ImageJ

Lab Equipment (Trained On and Utilized)

- Scanning & Scanning/Transmission Electron Microscope, Plasma Cleaner, NMR, Fluorescence, UV-Vis, IR, HPLC, CryoStat, Compact MRI, Surgical Microscope

Math/Science Knowledge

- Expert in Calculus and Biology, Advanced in Organic/Inorganic Chemistry and Linear Algebra

Spoken Languages

- Fluency in Farsi and English, Intermediate in Spanish and Azeri

Hobbies

- Sketching/Photography
- Playing piano and violin
- Programming and tinkering with electronics
- Hiking, swimming, and playing basketball