

Alexander Lu

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Education

Rice University - Houston, TX
Bachelor of Sciences Candidate, May 2018
Major: Bioengineering
Minor: NA

GPA: 3.97/4.00
Science GPA: 4.00/4.00
MCAT Score: 521 (131/128/131/131)

Research Experience

Rice University

Research Assistant, Mikos Lab

Houston, TX

Sept. 2015-Current

- Modified α -TCP (alpha-Tricalcium Phosphate) based bone cements with various reabsorbable porogens to enhance biocompatibility.
- Characterized resulting physical and chemical characteristics of bone cements for use in surgical and orthopedic applications.
- Analyzed cement porosity and physiochemical characteristics using analytic and physical techniques.

MD Anderson Cancer Center

Student Research Assistant, Ueno Lab

Houston, TX

May-Aug. 2017

- Investigated the impacts of cJun and cJun NH2-Terminal Kinase (JNK) on Triple Negative Inflammatory Breast Cancer (TNIBC) metastasis and aggressiveness.
- Learned and utilized a variety of wet lab techniques and assays, including Western Blot, BCA, and Transwell Migration and Invasion Assay.
- Assisted in performing animal studies comparing the efficacy of Birnapant (TL32711), an inhibitor of inhibitors of apoptosis, and Gemcitabine to combined drug treatment.

University of North Texas

Research Assistant, UNT Ion Beam Modification and Analysis Lab

Houston, TX

May-Aug. 2011

- Conducted studies in elemental composition in biosimilar materials.
- Designed and tested a system to reduce Eddy Current propagation in ion beam lines due to high speed rastering on metal surfaces.
- Performed PIXE, RBS, and XRF analysis for various data samples.

Publications

Publication currently pending review

Clinical Experience

Ben Taub Hospital/Texas Children's Hospital

EMT Clinical Rotation Student

Houston, TX

Jan.-May 2016, Aug.-Dec. 2016

- Documented and patient charts with pertinent information (SAMPLE, OPQRST) after questioning patients in the Emergency Room
- Observed ER doctors during shock room procedures and assisted in treatment when directed to
- Practiced and demonstrated proper veinipuncture on patients to assist nursing staff
- Accrued over 80 hours in the ER over 2 semesters

Houston Area Emergency Medical Services (Cyprus Creek, Harris County, Montgomery County)

Houston, TX

EMT Clinical Rotation Student

Jan.-May 2016, Aug.-Dec. 2016

- Rode out with selected EMS agencies as student EMT
- Provided high quality emergency care to patients and assisted in interventions as necessary (IV/IO access, endotracheal intubation, administering medications, CPR)
- Obtained and documented patient vitals
- Provided transport to medical facilities as needed
- Charted patient contact with relevant information (SAMPLE, OPQRST)

Hospital Virgen De La Luz

Cuenca, Spain

Student Observer affiliated with the Atlantis Project

May-July 2016

- Shadowed doctors in various departments including: Gastroenterology, Infectious Diseases, Surgery and General Practice
- Observed similarities and difference between American and European methods of practicing medicine
- Spoke with doctors about their experiences and career paths in medicine
- Learned Spanish and Spanish medical terms via immersion in Spanish culture
- Tutored doctors and hospital personnel in English to enhance communication abilities with the international medical community

Memorial Hermann Hospital TMC

Houston, TX

Volunteer

Sept. 2015-Jan. 2016

- Served as a patient experience liaison for Memorial Herman Hospital Texas Medical Center to ensure quality of service and provide feedback to Hospital administration about patient experiences.
- Assisted in transporting patients around Memorial Herman Hospital and directing family members to their destination,
- Volunteered for 40 hours over 3 months

Community Involvement

Alternative Spring Break 2015

Washington, DC

Volunteer

November 2015-March 2016

- Volunteered and worked with for one week with various DC area providers including Unity Healthcare to provide food resources and other essential items to the homeless population
- Lobbied and spoke to Congressmen on Capitol Hill with student advocacy group END7 to increase the USAID Neglected Tropical Disease budget for the fiscal year
- Learned about how specific health inequities can be addressed with policy discussion and ground level service by individuals

Jones College Society of Academic Fellows

Houston, TX

Academic Fellow

Feb 2017-Current

- Volunteered at Jones College to serve as an academic fellow for CAAM 210 and Bioengineering core courses
- Assisted students in preparing for weekly lab assignments and held office hours for students who needed assistance on MATLAB projects
- Coordinated with other Fellows to host review sessions and other academically enriching activities for Jones College

Extracurricular Activities

Rice University Student Admissions Council

Houston, TX

Lunch Host

Sept. 2015-Present

Member

Sept. 2015-Present

- Student volunteer with Office of Admissions at Rice University
- Assisted office staff in planning for events such as Owl Days and Admit Days, which draw hundreds of students and their families
- Met with prospective students and families over lunch as a student liaison to answer questions and address any concerns they may have

Rice University Emergency Medical Service*Duty Crew***Houston, TX***Sept. 2016-Present*

- Worked on campus as a provider for Rice University's Emergency Medical Services
- Provided emergency care when needed to students, faculty, staff and guests on campus
- Participated in outreach events like CPR training for the community and skills training for EMT students.

Rice University Biomedical Engineering Society*Member***Houston, TX***Sept. 2015-Present**Mentor**Sept. 2016-Present*

- Member of Rice University Chapter of the Biomedical Engineering Society
- Participated in workshops and professional development sessions
- Networked with alumni to develop professional contacts in the medical field

Awards**Rice President's Honor Roll***Aug. 2015-Present*

- Recognized for outstanding academic achievement in every semester beginning with Fall 2015

Hack.Rice Best Hardware Hack 2016*Jan. 2016*

- Recognized for Best Hardware Hack during Hack.Rice 2016
- Designed a small form factor wearable wrist monitoring device for people with carpal tunnel syndrome
- Implemented design using the Arduino Open Source Platform and node.js