

EDUCATION

Boston University - Bachelor of Science in Biomedical Engineering**May 2020****Concentration in Technology Innovation and Nanotechnology.****Minor – Chemistry and Mechanical Engineering**

- Relevant Coursework: *MATLAB, Organic Chemistry, Biotechnology & Molecular Biology, Multivariable & Differential Equations Calculus, Fluid Mechanics & Heat transfer, Thermodynamics & Statistical Mechanics, Nanometer Scale Processes in Living Systems, Biomedical Signals & Controls, Systems Physiology, Device & Diagnostics, Business of Technology Innovation, Strategy for Technology-Based Firms.*

RESEARCH EXPERIENCE

Boston University School of Medicine Center, Boston, USA**March 2019 – Present***Research internship – Department of Pathology & Laboratory Medicine*

- Working under the supervision of Dr. Dennis understanding the relationship between cancer cells and fibroblasts

Boston Medical Center, Boston, USA**April 2018 – Present***Research internship – Department of Family Medicine*

- Working under the supervision of Dr. Mitchell on diabetes self-management education program delivered via a virtual world versus a face-to-face format
- Responsible for all technical/programable problems faced by patients in virtual world
- Developed a MATLAB program that collected data and analyzed them through using REDcap program

Boston University, Boston, USA**March – September 2018***Research internship – Department of Biology*

- Worked under the supervision of Dr. Cruz-Martin on Sensory Information, Rodent Stereotaxic Surgery, and brain dissection. The surgery included viral injection in multiple brain regions
- Developed a program that identifies and count cells based on different brain regions using MATLAB

Boston University School of Medicine, Boston, USA**May 2017 – October 2017***Research internship – Department of Ophthalmology*

- Worked under the supervision of Dr. Andrew on immunohistochemistry
- Developed a MATLAB program that can detect the number of microglial cells under red and green florescence

King Abdullah University of Science & Technology (KAUST), Thuwal, KSA**July 2016 – August 2016***Research internship – Nanofabrication Core Lab*

- Worked under the supervision of Professor Xianbin on basic nanofabrication methodologies and experiments
- Physical/chemical etch on silicon-based wafers

King Abdullah University of Science & Technology (KAUST), Thuwal, KSA**June 2014 – May 2015***Research Assistant – Center for Desert Agriculture Dept.*

- Worked under the supervision of Professor Magdy on genetic engineering, viral infections and tissue culturing
- Genetically modified 225 *Nicotiana tobacum* and *Arabidopsis thaliana* using CRISPR/Cas9

PRODUCT INNOVATION

Boston University School of Engineering, Boston, USA**September – December 2017***Engineering Design – Department of Mechanical Engineering*

- The goal of the product design is to accurately detect any flood and send a warning signal wirelessly to a base station before any serious damage can occur. The design of the flood detector consists of three main sections: a solar panel power source, a suite of ultrasonic and water sensors, and an arduino with a radio transmitter. The design proved to be sound, as floods will be monitored using both ultrasonic sensors and water sensors, thus providing alternatives if one method fails. The overall design is easily mountable, water resistant, durable, and accurately detects water levels while remaining within the allotted budget.

Boston University School of Engineering, Boston, USA**January 2018 – Present***Engineering Design – Department of Biomedical Engineering*

- The whole design of the infant Continues Positive Airway Pressure (CPAP) includes the following components: a humidifier, a water reservoir, the battery module, an air pump module, an air filtering module, a connection tube, and nasal prongs. The front view of the infant CPAP will enclose the water container for the humidifier, the relative position for a rotating dial, and a flip switch and the air filter. The rotating dial is to control the humidity of the air that will be delivered to the patient. The flip switch turns the entire machine on or off. In case of a power outage, this device has a backup battery to ensure normal functionality over a 12-hour period. Next to the flip switch is the air filter. From the top view, there's a module layout for the humidifier, the battery and power supply module, the air pump module, and the air filter. The nasal mask was designed to have curvatures to fit the patient's face. Additionally, two thin prongs will extend from the mask to hold the nasal inserts and allow for easy swapping when moving to a new patient.

Product Design – Department of Strategy Innovation

- GObox Lunchbox is a product that offers clients the flexibility and the convenience to heat their food wherever they go. It is designed using safe lightweight materials, heating plates, and silicone rubber finishing to ensure safety and comfortability when held. In addition, customers will have the opportunity to heat different sections of the GObox Lunchbox independently. Switches for different compartments can be turned on and off, while heat is controlled by knob to increases user guided interface control. Developed by a team of engineers from Boston University, GObox Lunchbox is simple, affordable, relatively lightweight, and designed for all kinds of workers and activists.

AWARDS & HONORS

- Invited** - *The International Student Congress Of (bio)Medical Sciences (ISCOMS) at The Netherlands* **June 2019**
- ISCOMS, is one of the world's leading student congresses in (bio)medical sciences. it is a non-profit organization that aims to promote student research and the international exchange of it.
- Invited** - *Harvard College Undergraduate Research Association (HCURA) at Harvard University* **January 2018**
- HCURA was founded in 2007 with the mission of building an interdisciplinary research community among undergraduate students, and promoting undergraduate research.
- Invited & Awarded** - *Gulf Coast Undergraduate Research Symposium (GCURS) at Rice University* **November 2017**
- GCURS fosters intercollegiate interactions among students and faculty who share a passion for undergraduate research. Awarded "Outstanding Presentation" in Bioengineering Division.
- Honoree** – *MIT Lincoln Laboratory, Society for Science & the Public, and the National Aeronautics and Space Administration (NASA) named a planet under "31926 Alhamood"* **January 2016**
- Victor** - *Intel International Science and Engineering Fair* **May 2015**
- First place, Best of Category (Plant Sciences), Dudley R. Herschbach's Stockholm International Science Youth Seminar (SIYSS) & an invitation to attend Nobel Prize Ceremonies in Stockholm, Sweden December 2015.

EXTRACURRICULAR ACTIVITIES

- Panelist**, *Intel International Science and Engineering Fair (ISEF)* **May 2018**
- Research Association**, *Harvard College Undergraduate Research Association (HCURA)* **January 2018 – Present**
- Volunteer**, *Intel International Science and Engineering Fair (ISEF)* **May 2016 – Present**
- Volunteer**, *Counselor, Saudi Research Science Institute (SRSI), Kingdom of Saudi Arabia* **July 2016 – August 2016**
- Volunteer**, *Counselor, Mawhiba, Kingdom of Saudi Arabia* **May 2016 – Present**

SOCIETIES & MEMBERSHIPS

- Biomedical Engineering Society** **October 2016 - Present**
Student Member
- Society of Petroleum Engineers / Young Professionals & Student Outreach (ARAMCO)** **December 2016 - Present**
Lecturer & Presenter in ARAMCO, Dhahran, Saudi Arabia

SKILLS

- Computer:** Microsoft Office, MATLAB, HTML, beginner in C++, PyMOL, Foldit
- Language:** Fluent in Arabic, Advanced English
- Research:** Tissue Culturing, Pipetting, Chemical/Physical Etch, Collecting Samples, DNA Extraction, Viral and Bacterial Culturing, CRISPR/Cas9, sectioning, immunohistochemistry, Rodent Stereotaxic Surgery and brain dissection
- Robotics:** Tetrix, Lego, Mindstorm, EV3, VEX
- Presentation:** Public Speaking & Outreach
- CPR & First Aid:** Certified by American College of Emergency Physicians