

Karim Mohamed

1411 NW 2nd Ave #104, Gainesville, FL 32603 | +1 (813) 507-1163 | Karim.yousry@hotmail.com

EDUCATION

Aug 2018 - May 2020

Master of Science in Biomedical Engineering
University of Florida, Gainesville, Florida

Aug 2013 - May 2018

Bachelor of Science in Cell and Molecular Biology
University of South Florida, Tampa, Florida

Relevant Courses

- Molecular Biology of the Gene & of the Cell
- Principles of Immunology
- Cancer Biology
- Human Genetics
- Cell and Tissue Engineering
- Introduction to NIH Grant Writing for Biomedical Sciences
- Pharmaceutical Bioengineering
- Multivariate Signal Processes
- Biological Systems Modeling
- Biomedical Engineering Physiology
- Clinical Correlations and Clinical Immersion
- Introduction to Microfluidics and BioMEMS

RESEARCH INTERESTS

Primary research focus lies within the field of cell biology & biotechnology. Aspiring to incorporate my extensive knowledge of mathematics and biochemistry in developing medical devices and pharmaceuticals. Experience gained by means of collaboration with other researchers, however self-proficient. Ideal destination is involvement in research & development, design, and manufacturing of drugs and/or biomedical devices.

RESEARCH SKILLS AND EXPERIENCES

Oct 2018-Present **Graduate Research Assistant, Microfluidics and BioMEMS Laboratory, University of Florida, Gainesville, FL.**

Dr. Z. Hugh Fan, Professor of the Department of Mechanical and Aerospace Engineering at the University of Florida.

- Designed and manufactured microfluidic devices using CAD software, 3D printing, CNC milling, and soft lithography meaning to increase enzyme yield. End goal of fabricated devices is commercialization.
- Tested efficiency and performed optimization studies for devices provided by Dasfanh Biosciences, LLC with respect to devices' high-throughput efficiency. Achieved results via conducting Cell-Free Protein Synthesis (CFPS) experiments.
- Proteins quantified using microplate reader and 2D gel electrophoresis.
- Cultured and isolated E. coli components to perform CFPS experiments.
- Genetic engineering: transformed E. coli with protein plasmids.
- Fabricated paper-based microfluidic devices for Point-of-Care (POC) detection of ZIKV and HIV.
- Designed and developed paper-based devices for RTD of E. coli and *Karenia brevis* in water.
- Analyzed data using MATLAB, R, and Microsoft Excel.
- Volunteered to collect aerosol samples and design primers for experiment pertaining to the dynamics of SARS-CoV-2 aerial transmission.
- Organized biweekly seminars for UF IMG.

- Aug-Dec 2016 **Adv. Undergraduate Research (IDS 4914), Cell Biology and Genetics Laboratory, University of South Florida, Tampa, FL.**
 Dr. Mary Elizabeth Jones-Mason, Laboratory Instructor of Cell and Molecular Biology.
- Stained and counted in-vitro cancer cells to determine cell proliferation rate.
 - Extracted and quantified nucleic acids.
 - Designed primers to test expression of Bcl2 associated X-protein (BAX), synthesized complementary DNA (cDNA), and purified the cDNA.
 - PCR was used to amplify the desired DNA sequence followed by Gel Electrophoresis to fully understand the effects of artificial sweetener (saccharin) on cell proliferation and survival.
- May-Aug 2016 **Research Assistant, Nanotechnology Laboratory, Zewail City of Science and Technology, Giza Governorate, Egypt.**
 Dr. Ibrahim M. El-Sherbiny, Director of Nano and Materials Science Programs.
- Developed and optimized Chitosan-Silver Hybrid Nanoparticles intended to encapsulate therapeutic agents to enhance proficiency of oral and pulmonary drug delivery.
 - Operated electron microscope to determine morphology of nanoparticles.
 - Utilized Raman spectroscopy to acquire measurements of nanoparticles

OTHER OCCUPATIONS

July 2017 -

May 2018 **Middle Eastern Cultural Attaché/Representative, INTO University of South Florida, Tampa, Florida.**

Supervised by Brian Goercke.

- Assisted international students by introducing them to resources on and off campus.
- Translated documents from English to Arabic and acted as an interpreter between students, teachers, and administrators.
- Involved in planning, promoting and participating in special meetings.
- Responsible for helping students acclimate to American culture, their new academic environment, while promoting culture from my region (Middle East).
- Daily usage of Microsoft office for preparing presentations, translating documents, update student records, and other miscellaneous tasks.
- Title IX certified and Safe Zone trained

Mar-Aug 2017 **Online Tutor, Chegg Inc.**

INVOLVEMENT/INTERESTS

- Quidditch Club
- Gymnastics Club
- Violinist
- Associated with PRIDE club (LGBTQ+ Ally)
- Running/fitness

PROFESSIONAL DEVELOPMENT

- Nov 22nd, 2019 8th Annual Pruitt Research Day (Gainesville, Florida) poster presenter.
- Oct 27th, 2019 MicroTas 2019 (Basel, Switzerland) poster presenter.
- Oct 24th, 2019 Participated in Psychiatry 60th Anniversary Lecture pertaining to OCD and Depression, certified by UF college of Medicine.
- Jan 25th, 2020 Member, Honors Society.