Carlos Lopez Rodriguez

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EDUCATION

Tufts University, Medford, MA
B.S. in Biomedical Engineering and Computer Science, May 2019
GPA: 3.60 | Dean's List 5/5 Semesters

RELEVANT COURSEWORK

CAD Modeling, Engineering Design Process, Medical Device Innovation and FDA Regulations, Electronics I, Computing in Engineering (MATLAB), Biomaterials and Regenerative Medicine, Fundamentals of Medical Devices, Musculoskeletal Biomechanics, Data Structures, Organic Chemistry, Genetics, Quantitative Physiology, Biophotonics, Fundamentals of Medical Imaging, Fluid Mechanics

WORK EXPERIENCE

Vertex Pharmaceuticals, Inc. | Boston, MA
Materials Discovery and Characterization Intern, May 2017 – August 2017

- Design multiple related and independent experiments
- Optimize new formulations of lipid nanoparticles (LNPs) for RNA delivery therapeutics
- Implement different mechanical and chemical stresses on LNPs
- Characterize size and stability of LNPs using Dynamic Light Scattering (DLS)
- Present findings in group meetings, department meetings, and company poster session

Tufts Biomedical Engineering Department | Medford, MA
Kaplan Lab Undergraduate Researcher, September 2016 – Present

- Create bioreactor and re-design the medical device to study neuronal progression and growth
- 3D-Model parts of the bioreactor using Solidworks
- Integrate Arduino sensors into bioreactor for homeostasis upkeep
- Study 3D cell culture models of neurons to study neurodegenerative diseases
- Execute RT-PCR, western blot, immunostaining, ELISA on cell cultures

Omenetto Lab Undergraduate Researcher, March 2016 - Present

- Conduct chemical processes to fabricate silk fibroin solution as a biomaterial
- Investigate silk's chemical, and conductive properties when made with ferromagnetic molecules
- Experiment with magnetic particles and silk to alter the biomaterial's mechanical properties
- Perform tensile stress-strain analysis on different silk formulations
- Design independent research for Senior Thesis: Conductive Silk Aerogels for Glucose Sensing

SKILLS

Computer Skills: Solidworks, 3D Modeling, AutoCAD, Inventor, C++, MATLAB, SPICE, Excel
Mechanical Skills: 3D Printer, Laser Cutter, CNC Mill, Circuit Design, Rapid Prototyping, Design

ACTIVITIES

Society of Latinx Engineers and Scientists | *Member,* September 2016 – Present
Tufts Bhangra | *Dancer,* September 2016 - Present
Theta Chi Fraternity | *Scholarship Chair*, January 2016 – Present

- Schedule career development workshops, network with alumni, promote scholarly effort

Biomedical Engineering Society | *Member,* September 2015 – Present

REFERENCES

Phillip Snyder | Associate Director | Vertex Pharmaceuticals, Inc | (617) 455-8470
Antonio de la Serna | Business Lead, Trusted Microelectronics | DRAPER | (617) 874-6907