Carlos Lopez Rodriguez

19 Banks St | Somerville, MA 02155 | (520) 468-8905
lopezrodriguez.carlosg@gmail.com | www.linkedin.com/in/carlos-lopez-rodriguez

EDUCATION

Tufts University, Medford, MA
B.S. in Biomedical Engineering, May 2019
GPA: 3.64 | Dean's List 8/8 Semesters

RELEVANT COURSEWORK

Data Structures (C++), Intro to Computer Science (C++), Discrete Math, Statitstics (R), Computing in Engineering (MATLAB), Computational Biology, Medical Device Innovation and FDA Regulations, Engineering Design Process, CAD Modeling, Fundamentals of Medical Devices, Biomaterials and Regenerative Medicine, Molecular Biotechnology

WORK EXPERIENCE

Tufts Biomedical Engineering Department | Medford, MA
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: Magnetic Elastomer with Light Actuation

Kaplan Lab Undergraduate Researcher, September 2016 – September 2018

- Design and create bioreactor to study neuronal progression and growth
- 3D-model and prototype parts of the bioreactor using Solidworks, 3D printing, and lasercutting
- 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

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

- Design of experiments using published literature
- Optimize 50+ new formulations of lipid nanoparticles (LNPs) for RNA delivery therapeutics
- Implement 20+ different mechanical and chemical stresses on LNPs
- Characterize size and stability of 200+ LNP solutions using Dynamic Light Scattering (DLS)
- Present findings in group meetings, department meetings, and company poster session

SKILLS

Computer Skills: C++, MATLAB, 3D Solidworks, Solidworks FEA Analysis, 3D CAD, Microsoft Office, Statistical Analysis in R, Simulink, Inventor, Python, LabView
Mechanical Skills: 3D Printer, Laser Cutter, CNC Mill, Rapid Prototyping, Device Design and Development, Analog Circuit Design, Oscilloscope, Digital Multimeter, Signal Generator

ACTIVITIES

Tufts Biomechanics Club | *Member,* September 2017 - Present
Theta Chi Fraternity | *Scholarship Chair*, January 2016 – Present

- Schedule career development workshops, promote scholarly effort

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

PUBLICATIONS

Meng Li, ... Carlos Lopez Rodriguez, et al. "Flexible magnetic composites for light-controlled actuation and interfaces." Proceedings of the National Academy of Sciences. Jul 2018.