Nataly Moreno-Martínez

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TECHNOLOGY SKILLS

Programming Languages: C, C++, Python, R, HTML, SQL, MATLAB, LaTex.

Software: Solidworks, CAD Modeling, SCANIP, ImageJ. Zoom, Geogebra. Microsoft Word, Excel, Powerpoint.

Mathematics Experience: Multi-variable Calculus, Linear Algebra.

Instrumentation: Electric saw and construction tools, diamond saw, industrial hot press. Oscilloscope, Function Generator, basic DC/RC circuits, Vernier Digital Radiation Monitor.

Technical Skills: Soldering. Cell culturing, centrifugation, microscopy, assays, buffer preparation.

EDUCATION

Yale University, New Haven, CT (Expected May 2021)
- Biomedical Engineering B.S., Concentration in Bio-molecular and Systems Engineering; Cumulative GPA: 3.58
- Awards: Yale Domestic Summer Award (2020).

Albuquerque Academy, Albuquerque, NM (Diploma 2017)
- Cumulative GPA: 3.8/4.0, *Cum Laude*
- Awards: Vincent Cordova Diversity Award. National Hispanic Scholar. Most Improved Sophomore Girl (2014-2015). English Honors.
- Nominations: National Academy of Future Physicians and Medical Scientists Award of Excellence.The Popejoy Awards.

RESEARCH EXPERIENCE

Directed Research   January 2020 - August 2020
Miller-Jensen Lab, Yale School of Engineering and Applied Sciences

Supervised by Margaret Elise Bullock, Ph.D cadidate; research of latent HIV gene expression and phenotypes.
- Building predictive models for activation of latent HIV. Computational modeling of an array of phenotype states using a Network-Free Stochastic Simulator, NFsim.
- Rstudio and MATLAB computational languages used to synthesize HIV expression data for better correspondence analysis. Generation of parameter-phenotype interactome network based on mRNA and protein expression levels.

Directed Research   June 2019 - August 2019
Department of Oncology - Prof. Yi's group, Dell Medical School, Austin, TX

Independent summer computational research; bioinformatics of protein-protein interactions in disease pathology.
- Visualizing protein-protein interactions using RStudio, ChimeraX, and multiple online bioinformatic tools. 3D modeling of protein interfaces. Utilization of TCGA High-Throughput Human data for gene enrichment analyses.

- Combinatorial analysis of interfacial residue frequencies and structural protein data. Statistical methods: linear regression, frequency calculations, original random models.

Research Assistant   August 2018 - April 2019
Kyriakides Lab, Yale School of Engineering and Applied Sciences

Supervised by Ayomiposi Loye, Ph.D student; research of implant materials in cell differentiation.

- Cell culturing of mesenchymal stem cells for laboratory trials. Produced test bulk metallic glass (BMG) with industrial grade hot press and nanopattern molds. Alizarin red stained cells for microscopy analysis of osteoblast samples.
- Induced differentiation of cells via surface texturing of medium nanopattern BMG. Made pellets. Data analysis of cell calcification, growth, as well as differentiation.

PROFESSIONAL EXPERIENCE

Yale Integrated Pre-Calculus and Differential Calculus Tutor   August 2018 - May 2020
Yale University Math Department, New Haven, CT

- In-person one-on-one instruction of college-aged students under a Calculus syllabus.
- Coordinated personalized scheduling and curriculum pace according to school-year student demands.

ONEXYS Supervisor   April 2019 - August 2020
Online Experiences for Yale Scholars (ONEXYS)

- Successfully planned and coordinated instruction of a group of online students.
- Managed other math tutors on curriculum teaching, ensuring no scheduling issues and fostering interpersonal relations between coaches and students.
- Produced comprehensive reports of math tutoring methods as well as tracked student responses to curriculum.
- Created individualized learning curriculum in personal one-on-one tutoring with my own students.

ONEXYS Instructor   April 2018 - August 2018
Online Experiences for Yale Scholars (ONEXYS)

- Instructed college-aged students on pre-calculus as well as calculus mathematical curriculum.
- Navigated online software to track leaning progress of my students.
- Optimized and personalized student curriculum.

Internship   May 2016- August 2016
Peacock Law, Albuquerque, NM

- Curated legal files and generated reports for patent cases. Navigated informational patent database. Organized library of client files.
- Assisted paralegal research with detailed subject reports.

PROJECTS UNDERTAKEN

Simplifying Fracture Treatment: About 1 out of 10 fractures in children occur at the proximal humerus, the bone that extends from the shoulder to the elbow. I've collaborated in creating a device aimed for children between ages 2 and 14 designed to improve the treatment of those injuries.

Standard proximal fracture treatment involves Kirschner wires (or "k-wires): sterilized, sharpened, smooth stainless steel pins. It's a well-established method, but not without undue complications in fracture malformation and sequestering within the body (as the wires may migrate away from the fracture site). To prevent these complications, my team and I created a device that externally fastens k-wires to one another and limits their mobility. Additionally, I collaborated on a motion sensor that warns the child if he or she is moving too much.

EXTRA-CURRICULAR SERVICE	Yale Ballroom Dance Team (YBDT), *Competitive Dancer*	2018-2020
	YACAC, *Performer/Acrobat*	2018-2019
	Yale Aerial and Circus Arts Collective	
	Yale Danceworks, *Performer*	2017 - 2019
	YUAA Rocket Construction, *Engineer/Member*	2017 - 2018
	Yale Undergraduate Aerospace Association	
	Volunteer Work	2017-2018

LANGUAGES	English: *Fluent*
	Spanish: *Fluent*
	French: *Proficient*