DANIELLA A. JIMENEZ
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EDUCATION

Columbia University, Fu Foundation School of Engineering and Applied Sciences, New York, NY
Master of Science, Biomedical Engineering; GPA: 3.6 *Expected* December 2023

Macaulay Honors College, The City College of New York, New York, NY
Bachelor of Science (B.S.), *Magna Cum Laude;* GPA: 3.59
Major: Biochemistry; Minor: Mathematics June 2022

RESEARCH EXPERIENCE

Research Associate, Ultrasound & Elasticity Imaging Laboratory
Columbia University, New York, NY August 2022 – Present

- Serve as project leader to assess the potential effect of focused ultrasound-mediated blood-brain barrier opening on the blood-cerebrospinal fluid barrier primarily through fluorescence microscopy. Experimental design encompassed executing focused-ultrasound blood-brain barrier opening in an Alzheimer's disease model for 10 mice which was confirmed through MRI. Immunofluorescence staining was performed for +50 sections which were then imaged through microscopy and analyzed through ImageJ.
- Investigate effects of focused ultrasound-mediated blood-brain barrier opening on the gut microbiome and peripheral organs among Alzheimer's disease murine models and wildtype mice - stool, blood, and spleen samples were collected pre and post-treatment then analyzed through 16s RNA sequencing and R.
- Carry out maintenance, training, and responsible for troubleshooting for two laboratory microscopes.
- Led 7 summer interns in executing independent projects to characterize microbubble stability over one-week post-activation and under various conditions induced through theranostic sonications.

Intern, Grimm Lab
Memorial Sloan Kettering Cancer Center, New York, NY June 2021 – May 2022

- Characterized the role of iron-oxide nanoparticles in reactive-oxygen species-mediated cell death in pancreatic cells through flow cytometry and confocal microscopy.
- Analyzed mechanisms of uptake through fluorescence-labeled and radiolabeled Feraheme *in vitro* through viability assays and flow cytometry.

Intern, Ultrasound & Elasticity Imaging Laboratory
Columbia University, New York, NY June 2018 – October 2019

- Conducted *in vitro* experiments using a tissue mimicking phantom to investigate the temporal stability of lipid-shelled microbubbles under therapeutic parameters.
- Mentored 9 interns in basic wet laboratory skills, the synthesis of microbubbles, and the preparation of gelatin phantoms.

TEACHING EXPERIENCE

Non-teaching Adjunct, CCNY Stem Institute
The City College of New York, New York, NY June 2022 – Present

- Taught PSAT Math to 15 NYC high school students on Saturdays for the Spring 2023 semester.
- Taught general chemistry to 32 NYC high school students for the Fall 2022 semester.

- Taught the precalculus course to 54 NYC high students participating in the Summer Institute where all 22 students who applied for college credit through College Now successfully met the requirements to receive credit for the course.
- Led parent teacher conferences to discuss student progress through the course and collaborated with parents on how to achieve better student outcomes.

Tutor, CUNY Tutors Corp
The City College of New York, New York, NY Feb 2021 – Jan 2022

- Assisted 20 eighth-grade students one-on-one for homework help and test preparation for their algebra course once a week.
- Graded student homework assignments and quizzes, providing feedback to the students and teacher on progress.

PRESENTATIONS

Journals

Pouliopoulos et al., "Temporal Stability of Lipid-Shelled Microbubbles During Acoustically-Mediated Blood-Brain Barrier Opening." Frontiers in Physics, vol.8,2020, doi:10.3389/fphy.2020.00137.

Conferences

Jimenez D.A., Kline-Schoder A.R., Bendig J., Noel R.L, Gorman, S. L., & Konofagou, E. E., Focused Ultrasound-Mediated Effect on the Blood-Cerebrospinal Fluid Barrier and its Impact in Reduction of Alzheimer's Pathology, 2023 IEEE UFFC International Ultrasonics Symposium (IUS); September 3-8, 2023, Montreal, Canada (lecture)

Kline-Schoder A.R., Bendig J., Gorman, S. L., **Jimenez D.A**., & Konofagou, E. E., Focused Ultrasound Blood-Brain Barrier Opening Alters Murine Microbiome, 2023 IEEE International Ultrasonics Symposium (IUS); September 3-8, 2023, Montreal, Canada (poster)

Jimenez D.A., Pouliopoulos A.N., & Konofagou E.E., Acoustic Stability of Lipid-Shelled Microbubbles on Weekly Timescale, 2021 IEEE UFFC Latin American Ultrasonics Symposium (LAUS); October 4-5, 2021, virtual (lecture)

VOLUNTEER WORK

Child Life Volunteer
Pediatric Oncology, Morgan Stanley Children's Hospital, New York, NY Oct 2019 – Mar 2020

- Disinfected and prepared playroom for outpatients receiving treatment at the clinic.
- Provided comfort to children by retrieving toys or crafts and playing games with them.

TECHNICAL SKILLS

Computational: Microsoft Excel, Word, PowerPoint; Google Suite; FlowJo™; ImageJ; GraphPad Prism; MATLAB; R.
Wet laboratory: Cell culture, immunofluorescence, microscopy, flow cytometry, proteomics, animal husbandry, *in vivo* mouse work (focused ultrasound-mediated blood-brain barrier opening), magnetic resonance imaging.

HONORS AND AWARDS

Fellow, Summer at SEAS, Columbia University, 2023.
Fellow, Dept. of BME Summer Master's Research Fellowship (SMRF), Columbia University, 2023.
Fellow, Graduate Fellowship in Engineering for Change, Columbia University, 2022.
Scholar, Hispanic Scholarship Fund, 2022.

Rometty Fellow, Engineering Summer Program, Memorial Sloan Kettering Cancer Center, 2021.
Dean’s List, The City College of New York, 2019 and 2020.
Global Intern, Charles Steger Global Internship, Focused Ultrasound Foundation, 2019.

LANGUAGES
Spanish (fluent)