Nicole Sarna

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EDUCATION

B.S. Biomedical Engineering Aug. 2017-May 2021
University of Florida Gainesville, FL

TECHNICAL PROFICIENCIES

- MATLAB Programming
- OnShape/Autodesk Inventor(3D CAD)
- Microsoft Office Tools
- Histological Microtome
- Cell Culture
- MOMENTUM Magnetic Particle Imaging
- Dynamic Light Scattering (DLS) instrument
- Dynamic Magnetic Susceptibility (DMS) instrument
- ImageJ (Image processing program)
- JMP (Statistical analysis software)

ENGINEERING EXPERIENCE

Research and Development Intern Sept. 2020-Present
Lucere Laboratories *Gainesville, FL*
- Optimizing the synthesis of D-Luciferin, a light emitting compound, to lower production cost
- Conducting market research to validate and prioritize new product offerings
- Collaborating with the Chief Executive and Chief Technical Officers to progress from the conceptual stage to product development

Undergraduate Researcher at the University of Florida Jul. 2019-Present
Dr. Carlos Rinaldi's Laboratory, Department of Chemical and Biomedical Engineering *Gainesville, FL*
- Evaluating magnetic nanoparticles for *in vivo* imaging applications in the context of cancer immunotherapy
- Characterizing the limit of detection and quantification using the MOMENTUM Magnetic Particle Imaging system for *in vivo* studies

Undergraduate Researcher at the University of Florida Jan. 2020-May 2020
Dr. Todd E. Golde's Laboratory, Department of Neuroscience *Gainesville, FL*
- Wrote MATLAB program to analyze fluorescent images of 3D *ex vivo* brain slice cultures that exhibit aggregation of tau protein, which contribute to Alzheimer's and different neurodegenerative diseases

Undergraduate Researcher at the University of Florida Sept. 2017-Dec. 2018
Dr. Norman Fitz-Coy's Laboratory, Department of Aerospace & Mechanical Engineering *Gainesville, FL*
- Collaborative research project, DebriSat, between NASA, The Aerospace Corporation, and the US Air Force Space and Missile Systems Center
- Collected data to update NASA's Standard Breakup Model using Orbital Debris Modeling
- Analyzed and characterized space debris fragments generated by hypervelocity collision on a model satellite

PUBLICATIONS

- Lui, S., Rivera-Rodriguez, A., Chiu-Lam, A., DeGroff, R., Savliwala, S., ***Sarna, N***., Rinaldi, C., "**Long Circulating Tracer Tailored for Magnetic Particle Imaging**" – *In Progress*
- Rivera-Rodriguez, A., Hoang-Minh, L., Chiu-Lam, A., ***Sarna, N***., Marrero-Morales, L., Mitchell, D., Rinaldi, C., "**Tracking Adoptive T Cell Immunotherapy Using Magnetic Particle Imaging**" – *In Review*

CONFERENCES

American Institute of Chemical Engineers (AIChE) Nov. 2019
- Presented poster titled, "Evaluating the Sensitivity of the Momentum™ Magnetic Particle Imaging System for Ferucarbotran Iron Oxide Nanoparticles" in the Undergraduate Student Poster Competition, Orlando, FL

IEEE Engineering in Medicine and Biology Conference (EMBC) Aug. 2016
- Participated in a healthcare design challenge to improve sleep apnea machine

UNIVERSITY INVOLVEMENT

- **Biomedical Engineering Society**, Member Aug. 2017-Present
- **Society of Women Engineers**, Member Aug. 2017-Present
- **UF Orchestra**, Violinist Aug. 2017-Dec. 2017

HONORS/AWARDS

- UF Herbert Wertheim College of Engineering Dean's List Aug. 2017-Present