

Nicole Sarna

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EDUCATION

B.S. Biomedical Engineering
University of Florida

Aug. 2017-May 2021
Gainesville, FL

TECHNICAL PROFICIENCIES

- | | |
|------------------------------------|---|
| •MATLAB Programming | •MOMENTUM Magnetic Particle Imaging |
| •OnShape/Autodesk Inventor(3D CAD) | •Dynamic Light Scattering (DLS) instrument |
| •Microsoft Office Tools | •Dynamic Magnetic Susceptibility (DMS) instrument |
| •Histological Microtome | •ImageJ (Image processing program) |
| •Cell Culture | •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, DebrisSat, 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., DeGroat, 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
- Society of Women Engineers**, Member
- UF Orchestra**, Violinist

Aug. 2017-Present
Aug. 2017-Present
Aug. 2017-Dec. 2017

HONORS/AWARDS

- UF Herbert Wertheim College of Engineering Dean's List

Aug. 2017-Present