

Nicole Sarna

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EDUCATION

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

UNIVERSITY INVOLVEMENT

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

RESEARCH EXPERIENCE

Department of Biomedical Engineering and Chemical Engineering Jul. 2019-Present
Undergraduate Research Assistant, University of Florida, 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
- Contributing to development of MATLAB program to analyze Magnetic Particle Imaging data sets
- Advisor: Carlos Rinaldi, Ph.D.

Department of Neuroscience Jan. 2020-May 2020
Undergraduate Research Assistant, University of Florida, FL

- Writing MATLAB program to analyze fluorescent images of 3D *ex vivo* brain slice cultures that exhibit aggregation of tau protein, contributing to Alzheimer's and different neurodegenerative diseases
- Advisor: Todd E. Golde, M.D., Ph.D.

DebrisSat Research Project Sept. 2017-Dec. 2018
Undergraduate Research Assistant, University of Florida, FL

- Research for collaborative project 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
- Advisor: Norman Fitz-Coy, Ph.D.

PARTICIPATION IN CONFERENCES AND TECHNICAL MEETINGS

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

WORK EXPERIENCE

Bob Evans Farms, Inc. Jun. 2016 – Mar. 2017
Hostess / Cashier / Carryout Supervisor
• Supervised carryout orders, seated guests, cashed out customers, and managed the bakery

TECHNICAL PROFICIENCIES

- MATLAB Programming
- OnShape/Autodesk Inventor (3D CAD)
- Histological microtome
- Cell culture
- MOMENTUM Magnetic Particle Imaging System
- Dynamic Light Scattering (DLS) instrument
- Dynamic magnetic susceptibility (DMS) instrument

HONORS/AWARDS

- Dean's List Aug. 2017-Present
- Valedictorian at Winter Park High School 2017