# Arianna Marilee Ortega Sanabria

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**Objective**

As a PhD Student in the Adaptive Neural Systems Group - Institute for Integrative and Innovative Research ($I^3R$) working on Animal experiments, my main objective is to improve selectivity of nerve stimulation using Longitudinal Intrafascicular Electrodes (LIFE). These studies would help improve the current applications of bioelectronic medicine to reduce off-target effects.

## Education

**University of Arkansas, U of A (Fayetteville, AR)** **Currently IP – Expected Graduation Dec 2024**
*Doctor of Philosophy Biomedical Engineering*

**Florida International University, FIU (Miami, FL)** **Aug 2018-Dec 2021**
*Doctor of Philosophy Biomedical Engineering – Transferred to U of A*

**Universidad Metropolitana (Venezuela)** **Graduated 2015**
*Production Management Certificate*

**Universidad Simon Bolivar (Venezuela)** **Graduated 2015**
*Bachelor of Science in Chemical Engineering*

## Publications

1. Regnacq, L., Giraud, R. **Sanabria, A.O.**, Thota, A.K, Roversi, L., Rouhani, M., McPherson, L., Abbas, J., Jung, R., Romain, O., Renaud, S., Bornat, Y., Kolbl, F. (2021) *Evaluation of Stimulation Waveforms for Safe and Efficient Peripheral Nervous System Activation*. 2021 Biomedical Circuits and Systems Conference (BioCAS 2021): "Restoring Vital Functions by Electronics – Achievements, Limitations, Opportunities, and Challenges", IEEE, Oct 2021, Berlin (en ligne), Germany. ⟨hal-03542068⟩
2. Mozneb, M., Mirtaheri, E., **Sanabria, A. O**., & Li, C. Z. (2020). *Bioelectronic properties of DNA, protein, cells, and their applications for diagnostic medical devices.* Biosensors and Bioelectronics, 112441.

## Presentations & Abstracts

1. BMEG Rising Scholar 2023 – June 2023
   Title: *Selective activation of nerve fiber subpopulations with intrafascicular stimulation*
2. CRCNS Meeting 2022 – October 2022
   Title: *Improving Bioelectronic Intrafascicular Selectivity BioTIFS*
3. Society for Neuroscience Poster Presentation - November 2022
   Title: *Selective activation of nerve fiber subpopulations with intrafascicular stimulation*
4. LatinXinBME Symposium - March 2021
   Title: *Improving nerve fiber selectivity of intrafascicular stimulation*
   https://www.youtube.com/watch?v=Uf5LQjpcZHA
5. BME Graduate Research Day Poster Presentation at Florida International University - Spring 2020

## Research Experience

**University of Arkansas, U of A (Fayetteville, AR)** **January 2022 – Current**
*PhD Student at Adaptive Neural Systems Lab - Institute for Integrative and Innovative Research ($I^3R$)*

- Work with animal experiments (rodent) to improve the bioelectronic selectivity with intrafascicular stimulation to the sciatic nerve
- Work with electromyography analysis to study the motor units, identify them and track them for selectivity purposes.
- Work on manufacturing of longitudinal intrafascicular electrodes (LIFE) used in animal experiments.
- Work with Fulbright visitor scholar to design and test experimental set up for specific animal experiments.
- Collect sciatic nerve for histology purposes.
- Administrative work to maintain the laboratory facilities.
- Created test fixtures using SolidWorks
- Extensive data analysis using MATLAB for animal experiments and EMG analysis.

**Florida International University, FIU (Miami, FL)** **August 2018 – December 2021**
*PhD Candidate at Adaptive Neural Systems Lab* **August 2019- December 2021**

*PhD Student at Nano bioengineering/Bioelectronic lab* **August 2018- August 2019**

- Worked with cell culture including cell isolation from hearts of neonate rats.
- Worked with stem cells to get them differentiated into Cardiomyocytes
- Worked with aptamer-based probes to identify biomarkers such as ATP, Oxygen, Glucose, Fatty acids, NADH in cardiomyocytes.

**Universidad Simon Bolivar (Venezuela)** **September 2017-May 2018**
*Research Project Assistant*

- Assisted a professor in the university to finish and defend their work named "Chemical Characterization of Tear Gas used in Venezuela from 2014 to 2017 and its effects over the human body"

**Professional Experience**

**Johnson & Johnson - Medical Devices (Venezuela)** **July 2016 – November 2016**
*FX Process Improvement Analyst*

- Developed technical reports to provide simplified instructions to improve the internal visibility to foreign exchange across the entire company (Medical devices – Consumer – Janssen pharmaceutical)
- Provided follow up support and leadership in AAD/ALD/CNPN process of Janssen pharmaceutical and Medical Devices

**Johnson & Johnson - Medical Devices (Venezuela)** **April 2015 – July 2016**
*Customer Services Specialist*

- Lead the department of Customer Service Medical Devices.
- Trained an intern on all the internal operations of customer service. This included customer order, picking process (send the requirement to warehouse), shipping and track of the orders.
- Provided driven leadership and guided solutions to customer service process enhancement.
- Improved internal process to reduce human error and reduce the action time of such process. Increasing the productivity of the other members of the department.
- Connected internally by sharing performance and provided scenarios to achieve goals.
- Provided support to Warehouse operations.

**Johnson & Johnson - Medical Devices (Venezuela)** **April 2014 – February 2015**
*Process Improvement Analyst*

- Developed reports to simplify and improve the internal visibility of the Warehouse and Customer Service Ops
- Support for all new projects of 2014 of Customer and Logistics Service Department.
- Support to move warehouse operation of Medical Devices from the primary location to a share warehouse of Consumer products in other state. This included reprocessing, training and execution of the project.

**Johnson & Johnson - Medical Devices (Venezuela)** **August 2013 – February 2014**
*Customer Service Intern*

- Responsible for auditing all the customer service orders.
- Developed standard operational procedures (SOP) for internal processes.
- Analyzed quality alerts received from the warehouse to identify major problems and proposed solutions to reduce them, decreasing the inventory rejected by these quality alerts.

**Scholarly Activities**

**Projects & Mentorship**

**Florida International University** **August 2020-May 2022**
Project Title: Immunofluorescent Staining Techniques to Differentiate Sensory and Motor Axons for LIFE Implantation

- Mentor of Ra'Mal Harris (undergraduate student) during his MARC*U Star thesis project for his bachelor's degree.

**Universidad Simon Bolivar (Venezuela)** **April 2013 – July 2013**

Project Title: Assessing the Bacterial Strains Potential in Bio desulphurization of Diesel

- The primary objective was the evaluation of the bio-desulphurization potential of two bacterial strains in Diesel. The project involved the application of uncommon techniques and standard practices in the area of chemistry and chemical engineering, which improved my research skills.
- We needed to work with a large amount of empirical data that drove us to improve our capacity to organize and analyze those results. We worked together to manage and distribute time of each phase project successfully.

## Volunteer experience

**University of Arkansas, U of A (Fayetteville, AR)**

- *Judge for Northwest Arkansas Regional Science and Engineering Fair 2023 – March 2023*

**Florida International University, FIU (Miami, FL)**

- *Judge for BME Undergraduate Research Day September 2021*
- *Judge for BME Senior Design Expo April 2021*
- *Judge for BME Undergraduate Research Day September 2020*
- *Judge for BME Senior Design Expo December 2019*
- *Judge for BME Undergraduate Research Day September 2019*

**AIMBE – American Institute for Medical and Biological Engineering - Equity and Anti-Racism in BME summit**

- *Note taker January 2021*

**IEEE Expo at Florida International University (Miami, FL)** – Volunteer *March 2019*

## Society Participation

- Board member of Grad SWE as Treasurer of University of Arkansas – Spring 2022 - Current

## Honors & Awards

- **Latino Alumni Society Scholarship – University of Arkansas –** Spring 2023
- **2023 Charbonneau Family Scholarship, Dr. Ivy M Park Memorial Scholarship and SWE Board of Trustees Achievement Scholarship - Society of Women Engineers (SWE)** - Spring 2023
- **P.K Kuroda Endowed Graduate Fellowship in Engineering recipient – University of Arkansas -** Spring 2022
- **Top Performer for Leadership Imperatives "Shape" - Customer & Logistics Service Johnson & Johnson Venezuela** - December 2014
  Award given to those that Drive Innovation in the Company. People who are capable of translate insights into viable products and solutions that create value, who challenge the status quo; lead and adapt to change and those who take and manage risks
- **Outstanding Work recognized as "Mention" – Universidad Simon Bolivar – March 2014**
  This recognition is given to those that exceed expectations of the internship's parameters.

## Languages

- English
- Fluent in Spanish
- Intermediate in French

## Skills

- Good Documentation Practice
- Good Laboratory Practice
- Matlab
- SolidWorks
- JDEdwards