

# Fernando Aguilera de Alba

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## *Education*

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### **Biomedical Engineering, Ph.D.**

Purdue University

*Enrollment:* August 2021

Advisor: Dr. Michael Heinz

### **Biomedical Engineering, B.S.E.**

Arizona State University (ASU) – *Magna Cum Laude*

May 2021

GPA: 3.7

## *Projects*

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### **Djambe – ASU**

2017-2020

#### *Team Leader*

- Led team in the design and development of sensorineural electronic drum to promote emotional awareness in children within the autism spectrum disorder (ASD) through optical, sensory, and auditory stimulation

### **Boogie Babes – ASU**

February 2018

#### *Team Leader*

- Developed concept prototype of drone-based delivery system for vaccine transportation to remote areas.

## *Research Experience*

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### **Undergraduate Research Assistant**– Purdue University

Summer 2020

Advisor: Dr. Michael Heinz

*2020 Summer Undergraduate Research Fellow*

- Examined the effects of comodulation masking release (CMR) in normal-hearing chinchillas and humans.

### **Undergraduate Research Assistant** – ASU

October 2019-March 2020

Advisor: Dr. Nicholas Stephanopoulos

- Studied functionality and chemical composition of protein-DNA structures for the development of self-assembling hybrid nanomaterials.

## *Professional Experience*

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### **University Academic Success Programs** – ASU

January 2019-May 2021

#### *Subject Area Tutor*

- Provided academic assistance to undergraduate and graduate students in the fields of chemistry, calculus, physics, statistics, programming (C++, MATLAB, and Java), and engineering.

### **Engineering Projects in Community Service (EPICS) High**

August 2017-November 2019

#### *Student Mentor*

- Assisted teams in project-funding competitions, project proposals, and other engineering-related events.
- Facilitated group activities and critical thinking through proactive guidance with high school and middle school students.

### **Sport Clubs and Intramurals** – ASU

August 2017-May 2019

#### *Manager*

- Provided leadership and management for all scheduled sports programs offered to thousands of students.

## *Honors and Awards*

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### **Ross Fellowship**

2021-2025

### **Stephen R. Ash Scholarship**

2021-2022

### **New American University Scholarship**

2017-2021

### **Ira A. Fulton Schools of Engineering Dean's List**

2017-2021

### **Summer Undergraduate Research Fellowship & Pathways Scholarship**

Summer 2020

### **Society of Women Engineers 2019 Annual Conference Runner-Up** – *Djambe*

November 2019

### **EPICS Most Innovative** – *Djambe*

May 2018

### **Invent for The Planet Runner-Up** – *Boogie Babes*

February 2018

*Presentations*

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**Biomedical Engineering Capstone Symposium – ASU**

May 2021

*“HydroBiotix: Hydrogel Dressing for Targeted Antibiotic Delivery in Treatment of Skin and Soft Tissue Infections”*

Authors: Raneem Asiri, David Leonard Asuncion, Fernando Aguilera de Alba, Kasandra Sanchez, Beerjas Bath.

**SURF Online Symposium – Purdue University**

July 2020

*“Behavioral Comparison of Comodulation Masking Release Between Chinchillas and Humans”*

Authors: Fernando Aguilera de Alba, Vibha Viswanathan, Andrew Sivaprakasam, Michael Heinz.

*Skills*

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**Proficient:**

- C++
- Java
- Arduino
- Spanish
- LT Spice
- MATLAB
- Electrophoresis
- Hydrogel Design
- UV Spectroscopy
- Circuit and Filter Design
- Acoustic Stimuli Generation

**Exposed:**

- HTML
- Simulink
- LabView
- AutoCAD
- Portuguese
- 3D Printing
- SolidWorks
- Laser Cutting
- DNA Amplification
- Data Collection and Analysis
- Nuclear Magnetic Resonance (NMR)