

## EDUCATION

---

**Case Western Reserve University (CWRU), Cleveland, OH**

BSE Biomedical Engineering

Minor: Mechanical Design and Manufacturing

Expected Graduation: May 2023

Overall GPA: 3.71/4.00

**Significant Courses:** Intro. to Biomaterials, Engineered Materials for Biomedical Apps., Physiology, Entrepreneurship Finance

**Technical Skills:** SolidWorks Associate, Fusion 360, 3-D printing, Aerosol printing, MATLAB, Python, MS Office

## RESEARCH EXPERIENCE

---

### **Undergraduate Research Assistant**

**(May 2021 – Present)**

Advanced Manufacturing and Mechanical Reliability Center, CWRU, Cleveland, OH

- Conduct operation protocols to optimize the aerosol printing of a novel implantable high density in-line connector
- Investigate the surface roughness, adhesion, electrical resistance and optical profilometry of aerosol jet printed silver lines
- Led mechanical and electrical reliability tests of 35N LT silver-cored lead bodies used for stimulation applications

### **Materials Engineering Intern**

**(June 2022 – August 2022)**

Medtronic Neuromodulation Unit, Minneapolis, MN

- Proved feasibility of alternate drug delivery catheter with enhanced radiopacity and mechanical properties
- Characterized PET polymer properties using techniques such as FTIR, DMA, DSC, TGA and tension testing
- Evaluated CO2 cleaning procedure for drug delivery systems through mechanical and chemical characterization
- Delivered presentation and report to leadership teams on results of kink resistance and radiopacity analyses and suggested future directions for the catheter

### **Wen H. Ko Summer Intern**

**(June 2021 - August 2021)**

VA Northeast Ohio Health Care System's Advanced Platform Technology Center (APTC), Cleveland, OH

- Performed tension tests (ASTM F2516), fatigue flex tests (ASTM E796) and analyzed the fractography of NiTi/Pt wires using SEM and ImageJ
- Assisted with the installation of novel NanoJet aerosol printer and wrote SOP for basic use

### **Undergraduate Research Assistant**

**(August 2020 - June 2021)**

Center for Computational Imaging and Personalized Diagnostics, Cleveland, OH

- Evaluated novel deep learning tools used for diagnosis and treatment evaluation of rectal cancer patients
- Labeled the tumor, lumen, in-plane rectal walls and fat of over 200 rectal cancer T2-MRIs through Slicer 3D

## ACADEMIC AWARDS AND SCHOLARSHIPS

---

- 2022 Cristina A. Comardo Award
- Case Alumni Association Junior/Senior Scholarship
- APT-SIP Scholar, 2021
- Civic Engagement Scholar 2020-2021
- Dean's High Honor List, three times
- Dean's Honor List, one time

## POSTERS AND PRESENTATIONS

---

### **Mechanical characterization of implantable Nitinol Drawn Filled Tube 10% and 30% Platinum wires**

- Poster Presentation at ASM International Student Speaking Symposium (October 2021)
- Poster Presentation at CWRU Support of Undergraduate Research and Creative Endeavors (SOURCE) Intersections (May 2021)

### **Drug delivery catheter configuration with enhanced radiopacity and mechanical properties**

- Oral Presentation at Medtronic Summer Internship Final Presentations

### **Improved community engagement of hard-of-hearing individuals at church**

- Poster Presentation at CWRU Support of Undergraduate Research and Creative Endeavors (SOURCE) Intersections (December 2022)

## CO-CURRICULAR AND LEADERSHIP EXPERIENCE

---

### Co-founder and President

(January 2022 – Present)

Medical Technology Group (MTG), CWRU

- Preside over a group of 40+ members working on design and entrepreneurship projects with over 10k in budget
- Chair the first collaborations between MTG and CWRU think[box], UH Venture and the United Cerebral Palsy Center
- Lead design team working on rapid prototype surgical guides that aid clinicians during mandibular reconstruction surgery
- Create and disseminate agenda for both executive committees and general body meetings

### Design Team Member

(August 2022-Present)

Biomedical Engineering Senior Design

- Designed device that converts music to lights with the goal of improving community engagement of hard-of-hearing individuals at church

### Vice President of External Affairs

(May 2021 – May 2022)

Society of Hispanic Professional Engineers (SHPE), CWRU

- Oversee the planning of career development events with partner companies such as P&G, GE, BAE system and Medtronic
- Improved the sponsorship packet available to companies who wish to partner with us for funding for our flagship events

### Events Training Manager

(August 2019 – May 2022)

Tinkham Veale University Center, Cleveland, OH

- Direct the orientation, training, and skill assessment of new and existing employees and manage ballroom set-ups for events 3-4 times per week with a team of 4-6 people

### Vaccine Carrier Team Member

(January 2021 – January 2022)

Global Health Collaborative Design (GHDC), CWRU

- Collaborated on the design of an efficient vaccine carrier that holds over 50 vaccines for Ugandan health care workers
- Designed an organized lid system using SOLIDWORKS that minimizes human error and heat transfer

### I-Corps Cohort 12 Team Member

(March 2021-April 2021)

CocoNet, Puerto Rico

- Developed a scalable business model for a startup idea in a 5-week intensive customer discovery boot camp
- Interviewed over 100 possible costumers to further develop our value propositions and identify our customer segments

### Vice President of Civic Engagement

(May 2020-May 2021)

La Alianza (Undergraduate Latinx Organization)

- Present members with ways to engage with the greater Latinx community of Cleveland each month
- Planned committees for formal and social events where more than 200 CWRU students participate
- Created with executive board a virtual Latinx conference where more than 75 students registered

### Freshman Representative

(August 2019- May 2020)

La Alianza (Undergraduate Latinx Organization)

- Informed freshmen of opportunities with La Alianza, resulting in over 25 new members joining the club
- Led work being done in creating a Latinx Major at CWRU
- Organized overnight prospective student events