

## Summer 2022 REU

### Imaging in Medicine and Biology for Underrepresented Minorities

#### Student Profiles



#### **Alrian Abdelrahim**

**School:** Illinois Institute of Technology

**Major:** Bioengineering and biomedical engineering

**Interests:** Alrian is interested in imaging for biology and medicine. At her home institution, she was currently working in Dr. Kenneth Tichauer's lab at IIT studying intracellular paired agent imaging (iPAI). She is working on creating an accurate mathematical model for a monovalent KI (kinase inhibitor) that will be used to represent KI binding and distribution, this is planned to replace lab experiments. Epidermal growth factor receptor mutation positive (EGFRmut+) non-small cell lung carcinoma (NSCLC) is serving as the model system in her simulation. Alrian plans to pursue a master's in electrical engineering and a Ph.D. after because she plans on a career in academia.

---



#### **Justin Adjasu**

**School:** Harvard University

**Primary Major:** Bioengineering and biomedical engineering

**Minor:** Computer science

**Interests:** Justin is working toward pursuing an MD/Ph.D. in order to help patients directly in patient care and in research and solving major health problems and seeking proper treatment pathways and outcomes for patients and their families. He is very interested in ethics in medicine and helping people of color who have been shut out of the healthcare system. He has had the opportunity to work at Boston Children's Hospital and gain firsthand information and advice from MD/Ph.D. physician-researchers.

# Summer 2022 REU

## Imaging in Medicine and Biology for Underrepresented Minorities

### Student Profiles



#### Sherrice Dale

**School:** The University of Tennessee – Knoxville

**Major:** Materials engineering, including ceramics and textiles

**Interests:** Sherrice is an advocate for health and has an interest in projects that could potentially transform the medical industry. She also has an interest in researching materials, in the context that the sustainability of material is overall improved. She has a passion for fighting climate change and its impact on the earth. Sherrice wants to focus her research on tools that can help ease the burden on areas that will be impacted the most and industrial uses. In the Spring semester of 2022, she worked under the direction of Dr. Bin Hu in solution processing thin-film solar cells. This project involves materials processing, thin film device fabrication, and experimental measurements. The materials processing focuses on solution methods to prepare thin films with controllable morphology and thickness, functioning as photovoltaic layer. In her spare time, Sherrice likes to work with children in inner-city middle and high schools to give back to the community.

---



#### LouLou deVallance

**School:** University of Maine

**Major:** Biomedical Engineering

**Interests:** LouLou is currently majoring in Biomedical Engineering and considering a minor in Computer Engineering. Since she has many varied interests, LouLou is hoping that this NSF program can help her narrow her focus and help to figure out the best pathway for her.

LouLou is very creative, from writing poetry, and creating mixed media collages, to jewelry making. She played basketball in high school and at the University of Maine She is an advocate the LGBTQ community and Black Lives Matter. She wrote and read a speech for Black Lives Matter entitled “White Silence is Violence” where approximately 4000 people showed up.

## Summer 2022 REU

### Imaging in Medicine and Biology for Underrepresented Minorities

#### Student Profiles



#### **Padro Gracias**

**School:** University of Florida

**Major:** Bioengineering and biomedical engineering

**Interests:** Pedro immigrated from Guatemala while he was still in high school. While in high school he took anatomy and physiology. He said that these two classes opened his mind and caused him to realize that he wanted to study the human body and also found that he was well skilled in math, which led him to biomedical engineering. Because of the language gap, Padro was unable to pursue math and science fields until he mastered the English language. During this time, he continued to feed his knowledge by taking classes that were difficult yet rich in biological and computational knowledge such as molecular genetics, MatLab, and Engineering Design. In Spring of 2022, Pedro was accepted into the Neuroprostheses Lab at his school to work on a project called Tissue-Engineered Electronic Nerve Interference (TEENI). In this project, he is learning how to analyze data using Python, how to analyze TEENI microscopy, and how to use his resources when facing a problem. He feels this will be useful in the future because he is interested in surgery.

---



#### **Zaria Kangethe**

**School:** Moraine Valley Community College

**Primary Major:** Electrical, electronics and communications engineering

**Minor:** Computer science

**Interests:** Zaria is an electrical engineering major and intended computer science minor. She plans to pursue a career in technology-related research and development in the future, especially related to the fields of electrical engineering, computer science, and computational neuroscience. She is especially interested in the topics of signal processing, brain imaging, optics, photonics, quantum computing, and virtual/augmented reality.

## Summer 2022 REU

### Imaging in Medicine and Biology for Underrepresented Minorities

#### Student Profiles



#### **Emily Leopin**

**School:** The University of Tennessee - Knoxville

**Primary Major:** Chemical engineering

**Secondary Major:** Music, all fields

**Interests:** Because of Emily's great passion for both the sciences and music, she is double majoring in both Chemical Engineering and Applied Music. When she entered the University of Tennessee, she believed she would study further, her interest in French horn, but as she continued her education, she realized that, though playing the French horn was a great passion for her, she was not sure she wanted this as a career. She realized that she liked engineering because it requires critical thinking to solve problems and help people in this way. She has been interested in working with Dr. Steve Abel gathering data for cell signaling in the cell membrane environment.

In Emily's spare time continues to take part in many music organizations including the Student Composer Organization at UT and Women of UT Music. She enjoys participating in composition contests and won one with a choral piece she wrote for a Women of UT Music composition contest. She also volunteers at Zoo Knoxville whenever she has time.

---



#### **Olivia Lopez**

**School:** University of South Carolina - Columbia

**Primary Major:** Biology, general

**Minor:** General psychology

**Interests:** Olivia is particularly interested in the intersection between biology and psychology through neuroscience. Specifically, she is interested in the influence of factors such as genetic heritability, environmental influences, epigenetic factors, variable neurotransmitter levels, and brain structural variations on the development of behavioral and mental disorders. She is interested in studying and understanding the etiology of a disorder to be able to determine preventative measures and develop biological treatments. She mentions Alzheimer's disease, mental disorders such as schizophrenia, and other related disorders as most interesting to her to try to solve.

Olivia's previous volunteer experience at the South Carolina Aquarium provided an up-close understanding of current conservation efforts for at-risk animals such as several endangered species of sea turtles. As an exhibit guide, educating others further increased her understanding of the importance of conserving endangered species and how delicate the balance of nature is.

**Summer 2022 REU**  
**Imaging in Medicine and Biology for Underrepresented Minorities**  
**Student Profiles**



**Kaitlin O'Reilley**

**School:** University of Illinois at Urbana Champaign

**Primary Major:** Bioengineering and biomedical engineering

**Minor:** Electrical, electronics, and communications engineering

**Interests:** Kaitlin is fascinated by the intersection of cutting-edge research in physics, chemistry, and biology and their real-world implications in medicine. She is interested in creating and developing better products for physicians and patients to improve health outcomes. Kaitlin has an interest in possibly working work in research and development in the medical imaging industry. She would like to help solve medical problems with engineering principles. She is also interested in pursuing another degree to continue research in academia.

---



**Elijah Watley**

**School:** The University of Tennessee Knoxville

**Major:** Biomedical Engineering

**Interests:** EJ is a research assistant for musculoskeletal research with the MABE Department at the University of Tennessee. In addition to his research work, EJ is involved with many organizations on campus. He is a member of the United Residence Hall Council as the President for Hess Hall; the Freshmen Liaison for the National Society of Black Engineers; and the Mentee Representative for the Engineering Mentoring Program. EJ is also involved with organizations that help minorities and students of color on campus thrive and succeed (Brothers United for Excellence, Multicultural Mentoring Program, UT Success Academy, Multicultural Engineering Program). His goal is to obtain a career that improves and advances the health of individuals through biomedical engineering in prosthetics or medical devices.