

## Education

**RENSELAER POLYTECHNIC INSTITUTE, TROY, NEW YORK**

**AUG 2021 TO MAY 2025**

*BACHELOR OF SCIENCE in Biomedical Engineering with a Minor in Healthcare Markets*

**Distinction:** *CUM LAUDE*

## Research Experience

**Visiting Researcher | RPI - Deep Imaging Analytics Lab | May 2025 to Current | Troy, NY**

- Developed a deep learning pipeline for joint segmentation and classification of skin lesions
- Built multimodal classifiers and a reinforcement learning curriculum for molecular generation
- Presented research regularly to PI Dr. Pingkun Yan and lab members

**Researcher and Co-Author | Rensselaer Polytechnic Institute | SEP 2023 to MAY 2024 | Troy, NY**

- Co-authored a forthcoming book chapter with Dr. Nancy Campbell on the medicalization of extreme sport athletes
- Conducted interviews and a literature review to examine risk and addiction in athletic subcultures

**Research Assistant | Zikopolus Human systems Neuroscience | APR 2019 to AUG 2019 | Boston, MA**

- Analyzed electron microscopy images and performed 3D reconstructions of neurons
- Assisted with brain tissue preparation and staining for slide analysis

## Research Projects

**Multimodal AI for de novo CNS Drug Design via Molecular Generation**

- Fine-tuned a SMILES-based transformer model with reinforcement learning to generate CNS-optimized molecules
- Integrated SHAP-informed property classifiers (e.g., BBB permeability, QED) into reward signals
- Accepted for presentation at BMES 2025

**Wearable Device for Gait and Sedentary Behavior Monitoring**

- Engineered a wearable IMU-based system using a microcontroller with Bluetooth transmission and an XGBoost classifier to monitor gait and sedentary behavior in older adults
- Collaborated with Dr. Todd Shatynski of The Bone & Joint Center on clinical use cases

**Skin Lesion Segmentation and Classification Pipeline**

- Built a deep learning workflow combining U-Net segmentation and CNN classification
- Classified lesions across 9 diagnostic categories including melanoma and keratosis

**Medicalization of Extreme Sports Athletes**

- Investigated biological vs. sociological frameworks of addiction
- Conducted interviews, memoir analysis, and literature review
- Chapter currently in production

## Publications and Conference Posters

- *Multimodal AI for de novo CNS Drug Design via Molecular Generation*. Poster, BMES Conference, 2025 (with Dr. Pingkun Yan).
- *Medicalization of Extreme Sports Athletes in a Risk Regulatory Society*. Chapter, forthcoming, 2025 (with Dr. Nancy Campbell).

## Industry Experience

### **Lab Operations Intern | Ultragenyx Pharmaceuticals | JUN 2023 to AUG 2023 | Woburn, MA**

- Managed QC sample logistics and completed GMP documentation
- Led inventory optimization and lab protocol updates

### **Product Development Consultant | Veritas Genetics | JUN 2022 to SEP 2023 | Danvers, MA**

- Curated mutation data for 13,000+ genes to streamline genetic testing workflows

### **Lab & Operations Assistant | Veritas Genetics | NOV 2020 to AUG 2021 | Danvers, MA**

- Processed thousands of COVID-19 tests and coordinated region-wide sample logistics
- Developed internal software to enhance sample accessioning
- Ensured CAP, CLIA, HIPAA, and OSHA compliance

## Additional Information

- Certified in Mental Health First Aid
- Emergency Room volunteer, Samaritan Hospital
- Founder, annual charity sports tournament at RPI
- Fundraised thousands for the Jimmy Fund via Boston Marathon walks
- UI/UX design and marketing strategist for edtech startup FuzeMee
- Former camp counselor and restaurant server