Elena Copson

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Education

Rensselaer Polytechnic Institute

B.S. Biochemistry & Biophysics with a Minor in Public Health, GPA: 3.62, Cum Laude

August 2019 –May 2022

- Notable courses: Advanced Molecular Biology Lab, Cell Biology, Genetics and Evolution, Human Physiology, Biology of Systems, Chemistry 1&2 with labs, Physics 1&2 with labs, Physical Chemistry, Organic Chemistry 1&2 with labs, Calculus 1,2 & Multivariable, Biochemistry 1&2, Protein Structure Determination, and Biostatistics.
- Dean's Honor List: Fall 2019, Spring 2020, Fall 2020, Spring 2021, Summer 2021, and Fall 2022.
- Affiliations: RPI Ambulance, RPI International Genetically Engineered Machine, and RPI Alpha Epsilon Delta Pre-Health Honor Society.

North Middlesex Regional High School

September 2015 – May 2019

- Notable courses: AP Biology, AP Chemistry, BC Calculus, AP Physics, AP Language and Composition, and AP United States History.

Experience

Research Associate I, In Vivo Preclinical Pharmacology, Cellular Pharmacology, & Research Partnerships Group, Sarepta Therapeutics

June 2022 – Present

- Research Partnerships: Leading project to determine the affinity of AAVrh74 in myoblasts to cell surface receptors to better understand transduction of the company's approved gene therapy drug into skeletal muscle cells. Additional work includes optimization of assays and testing of samples via various cellular assays, automated western blot, and ddPCR for other internal groups at Sarepta as well as external collaborations.
- Cellular Pharmacology: Led individual project to elucidate the mechanism by which hypomagnesemia may manifest in patients treated with Sarepta's exon skipping drug making use of cellular kidney models.
- In Vivo Preclinical Pharmacology: Main responsibilities were that of dystrophin quantification via automated western blotting, exon skipping analysis via ddPCR, and sample management. Equally important in this role was data quantification, interpretation, and presentation of all generated results.

Lab Research Assistant, International Genetically Engineered Machine, RPI

June 2021 – May 2022

- The aim of the research was to better understand the expression of the longevity gene within *C. elegans*. Actively aided in the development and execution of lab procedures and interpretation of results.

Publications

Burch, Peter M. " Preclinical Pharmacokinetics/ Pharmacodynamics and Functional Efficacy of SRP-5051, a Peptide-Conjugated PMO for the Treatment of Duchenne Muscular Dystrophy" *Molecular Therapy- Nucleic Acids,* **In prep**

Oliver, Ryan A. "Splicing Correction by Peptide-Conjugated Morpholinos as a Novel Treatment for Late-Onset Pompe Disease" *Molecular Therapy- Nucleic Acids Volume 36 Issue 2,* 102524, 10 June 2025

Skills

Laboratory Techniques

AAV transfection and handling, Mantarray 3D muscle tissue casting and stimulation, automated western blot (JESS), ddPCR, reverse transcription PCR, qPCR, tissue homogenization, test article formulation, cell and tissue imaging via Operetta and Leica Thunder (fluorescence microscopy), siRNA transfection of cells, cell viability assays, antibody staining, cryosectioning, ELISA, RNA extraction, DNA extraction, gel electrophoresis, general tissue culture and sterile techniques, primer design, tissue cutting and handling

Software

R, Python, Microsoft Suite, Pymol, Benchling. GraphPad Prism, Compass for Simple Western

Other Skills

Study report writing, data analysis, experimental planning, presentation of data

Volunteering

New Orleans Service Learning Coordinator, NMRHS

June 2016 – May 2019

- Organized and coordinated community service trip to New Orleans for high school students/peers.

Ambulance Attendant, driver and social media coordinator, RPI

June 2021 – May 2022

- Actively participated in student run ambulance organization and completed all necessary driver training, CPR training and increased student engagement via social media platforms within the RPI community.

Teaching Experience

Chemistry Mentor, I-Persist, RPI

August 2020 – December 2020

- As a mentor, responsibilities were to be extremely familiar with the Chemistry I curriculum and offer students enrolled in the course additional academic support to help them grasp challenging concepts. Led group session once weekly and held office hours for a semester.