

Jessica Marshall

New York, NY | | jm5679@columbia.edu

EDUCATION

Columbia University

MS in Electrical Engineering

Recipient of the Dean's MS Academic Excellence Fellowship and designated a Tesla Scholar.

New York, NY
Expected Dec 2024

Louisiana State University

Post Baccalaureate Coursework, GPA: 4.23/4.30

Courses: Signals and Systems, Circuits, Discrete Structures, Electronics.

Baton Rouge, LA
May 2023

Louisiana State University

BS in Biological Sciences

Cum Laude.

Baton Rouge, LA
May 2019

WORK EXPERIENCE

Louisiana State University: Department of Physics & Astronomy

Research Assistant

Baton Rouge, LA
Apr 2021 - May 2023

- Synthesized hundreds of materials using methods such as chemical vapor transport, metallic flux, and bridgeman crystal growth to tune structural relationships in noncentrosymmetric superconductors through chemical doping.
- Constructed hardware and created a correspondent program to automate control of a radio frequency generator.

Harvard Medical School and Brigham and Women's Hospital

Research Assistant

Boston, MA
Aug 2019 - Aug 2020

- Conducted and assisted with orthotopic modeling, survival surgeries, drug administration, tissue harvesting, blood sample collection, and necropsies in 200 athymic nude mice.
- Maintained long-term tissue cultures of human cell lines, monitored cells for viability and contamination under strict aseptic conditions, and performed cell-based assays.
- Implemented molecular biology techniques, such as protein extraction and Western blotting to assist with daily lab projects.

Louisiana State University: Department of Biological Sciences

Research Assistant

Baton Rouge, LA
May 2016 - May 2019

- Collaborated with another lab member to design and implement a project exploring microbial identification using DNA extraction and genomic sequencing.
- Performed molecular biology techniques weekly, such as gel electrophoresis and PCR, and received introductory bioinformatics training.

ACTIVITIES

ViewPoints at Louisiana State University

Co-founder and Vice President

Baton Rouge, LA
Aug 2017 - May 2019

- Organized and facilitated weekly discussions surrounding several topics, including cognitive development, effects of economic inequality on health, and technological innovation.
- Partnered with TEDx to host a Salon event that aimed to explore mechanisms for quality communication.

SKILLS

- Technical: C++, Python, Matlab, Verilog, Pspice, Labview.

PUBLICATIONS

Journal Articles

- Zhao B, Aggarwal A, Marshall JA, Barletta JA, Kijewski MF, Lorch JH, Nehs MA. Glycolytic Inhibition with 3-Bromopyruvate Suppresses Tumor Growth and Improves Survival in a Murine Model of Anaplastic Thyroid Cancer. *Surgery*. 2022 Jan;171(1):227-234. doi:10.1016/j.surg.2021.05.055. Epub 2021 Jul 29. PMID: 34334212.

Abstracts/Poster Presentations

- Aggarwal A, Zhao B, **Marshall JA**, Nehs MA. Glycolytic Inhibition with 3Bromopyruvate (3BP) and Ketogenic Diet Increases Survival in a Mouse Model of Anaplastic Thyroid Cancer. Massachusetts Chapter of the American College of Surgeons. December 2020.
- Zhao B, Aggarwal A, **Marshall JA**, Nehs MA. Ketogenic Diet Combined with Inhibition of Glycolysis Improves Survival in an Orthotopic Mouse Model of Anaplastic Thyroid Cancer. New England Surgical Society. October 2020.
- Zhao B, Aggarwal A, **Marshall JA**, Nehs MA. Inhibition of Glucose Metabolism with Metformin Decreases Tumor Proliferation and Migration in Anaplastic Thyroid Cancer. *Journal of the American College of Surgeons*. October 2020.
- Zhao B, Aggarwal A, **Marshall JA**, Nehs MA. Inhibition of Metabolic Pathways Attenuates Tumor Proliferation and Invasion in Anaplastic and Poorly Differentiated Thyroid Cancer. *Society of Surgical Oncology*. March 2020.
- Aggarwal A, **Marshall JA**, Nehs MA. A High-Glucose Environment Augments the Clonal Evolution of Hexokinase-2 Gene Copy Number Expression in Anaplastic Thyroid Cancer. *American Association for Cancer Research*. March 2020.