BIANCA MEURER-ZEMAN

University of Colorado Boulder, CO
Degree: Neuroscience *Minors*: Creative Technology & Design (CTD) and Biomedical Engineering

RESEARCH EXPERIENCE

NIST (2024)
Research Fellowship
• Developed smart magnetic hydrogels for in-vitro diagnostics and sensors.
• Utilized smartphone magnetometers to measure chemicals in samples by employing bilayer hydrogel geometry to amplify magnetic motion.
• Enhanced signal transduction sensitivity via smartphone magnetometers for analyte sensing by developing an Arduino interface, resulting in a 10x improvement in sensitivity.

Burdick Biomaterials Lab (2023-Current)
Undergraduate Research
•Developed and applied 3D-printed polymer hydrogels to study cardiomyocyte behavior in response to different chemical charges.
•Characterized biomaterials through compression testing, cytotoxicity assays, and UV curing techniques.
•Cultivated stem cells to create microtissues, testing calcium signaling and muscle contraction.

Sleep and Development Lab (2023)
Undergraduate Research Fellow
• Contributed to research on the effects of light exposure on circadian rhythms in young children, focusing on early vs. late exposure and varying wavelengths.
•Led multiple data collection tasks, including saliva collection for melatonin analysis, managing dim light conditions, data entry, and assisting with light exposure interventions.

Rocky Mountain Brainspotting Institute (2022)
Data Analyst Intern
•Organized and analyzed patient data using post-traumatic stress diagnostic scales (PDS), hospital anxiety and depression scales (HADS), and Subjective Units of Distress Scale (SUDS).
•Evaluated therapy efficacy through statistical analysis of patient data, identifying key trends and insights.

Bacteriophage Lab (2021)
Undergraduate Research
•Advanced understanding of immune signaling by discovering and characterizing bacteriophages.
•Conducted bacterial and phage culturing, DNA isolation, restriction digestion analysis, and gel electrophoresis.

WORK EXPERIENCE

TEDxCU (2022-Current)
President
• Led the planning and execution of an independent TEDx event with over 2,000 attendees, managing a $50,000 budget and overseeing a team of 30 students.
• Managed all event logistics, including finances, sponsorship acquisition, marketing campaigns, and speaker coordination.
• Identified and showcased innovative, community-driven ideas to inspire and engage a diverse audience.

New Venture Challenge, CU Boulder (2022)
Volunteer Coordinator
•Recruited and managed volunteers, developing strategies to source additional support for the program, while ensuring high-quality and consistent volunteer experiences.
•Collaborated with the New Venture Challenge Director to support the execution of Innovation & Entrepreneurship events in order to engage the community.

Vasa Fitness (2022)
Member Experience Specialist
•Delivered personalized customer service to enhance member satisfaction and experience.
•Anticipated and addressed member needs by providing information, direction, and support.
•Consistently improved the guest experience by collecting feedback and collaborating with the team to implement member-focused solutions.

AWARDS

• Latino Association Scholarship • TRIO Scholar • UROP
• McNair Scholar • Be Boulder Scholarship
• Davies Memorial Scholarship • CU Esteemed Scholars
• Thorkildsen Scholarship •MASP Scholarship
• Hazel G Woodruff Memorial Scholarship

SKILLS

Software*:** Illustrator, Photoshop, InDesign, CAD, Python, HTML and CSS, Matlab, GraphPad. ***Lab: Confocal, Spectroscope, Rheometry and compression testing, Arduino, DLP 3D printer, Tissue culture. ***Language*:** Spanish literacy

TALKS AND PUBLICATIONS

• NIST Research Fellowship Plenary Speaker
• Dhand, Juarros, Martin et al. “Digital Light Processing 3D Printing enables High Throughput Fabrication of Human Engineered Heart Tissues for Cardiac Disease Modeling” (Under Review: Nature BME Journal)