Mack Sowers

mack@berkeley.edu   linkedin.com/in/macksowers

University of California, Berkeley   *Materials Science and Engineering class of '24*

Computer Skills: MatLab, ImageJ, python, pandas, json, github, Google; Microsoft; and Adobe suites, Photoshop, bash, Lawrencium, AutoCAD, Fusion 360, slicing software, SEM, html...

Lab Skills: Optical and Scanning Electron Microscope, Electrochemistry and Potentiostat, UV Stereolithography, Furnace, Lab Safety and Instructions, Mass Spectroscopy, Nuclear Magnetic Resonance, Infrared Spectroscopy, X-ray Spectroscopy, Electron Dispersion Spectroscopy, Universal Tensile Tester, Fabrication, Documentation

Experience

Undergraduate Researcher
— *Additive Manufacturing and Meta-Materials Laboratory, University of California Berkeley*

JUNE 2023 - Present

-Listed as Author after executing crucial experiments and analysis contributing to a pending publication

-Designed 3D models for experimental samples not limited to: parametrically defined Kelvin Foam, high resolution grating scaled to the smallest pixel size, sturdier tensile test and adhesion test samples

-Extensively revised the point-to-point response and reviewed the paper after the additional experiments had been incorporated, and it is now awaiting acceptance by Nature.

-Demonstrated high self-sufficiency in independent work

-Handled sensitive chemicals to create resins and perform experiments in the wet lab

-Identified and addressed inconsistencies in tensile test data through a novel sample preparation approach

Intern — *Lawrence Berkeley National Laboratory*

JUNE 2021 - AUGUST 2021

-Collaborated in a close-knit cohort rotated together through three research groups in a "rotational internship."

-Utilized mathematical modeling to seek materials for use in Extreme UltraViolet (EUV) Lithography

-Identified ways to recode the modelled photons to correctly represent the lithography phenomenon

-Implemented machine learning and materials informatics to predict environmentally friendly dielectric earth-abundant materials for use in micro electronics

-Demonstrated Density Functional Theory to calculate material properties

-Explored the effect of hydrostatic pressure on perovskites, in regards to band gap and electric polarization

Intern — *Bay Area Rapid Transit, and Jacobs Engineering*

JUNE 2019 - SEPTEMBER 2019

-Participation in Jacob's internship program through their contract with BART

-Sourcing accurate and up-to-date AutoCAD files of station maps for use by the accessibility department

-Developed the method and wrote a guide for a high accuracy conversion workflow to a preferred format

-Contribution to planning meetings regarding construction, design, and neighborhood outreach

Manager and Chef — *Easy Creole*

AUGUST 2014 - DECEMBER 2016

-Identified and executed marketing and visual design needs, including official business signage

-Surpassed expectations by reorganizing and restructuring kitchen, stock area, and recipes

-Fostered community while delegating tasks as well as resolving any problems and disputes

Sound Engineer — *Independent contractor*

Ongoing

-Analysis of frequencies using digital sound board; identifying issues by ear and adjusting complex systems.

-Anticipated the needs of musicians, event managers, and participants in fast-paced environment