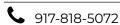
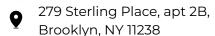
# EVAN BRORBY

# Optical Engineer

#### CONTACT



evanbrorby@arizona.edu



#### **EDUCATION**

#### **University of Arizona**

**BS - Optical Sciences and Engineering** | 2020-2024 Honors Track | GPA: 3.90

MS - Optical Sciences and Engineering | 2023-2025

# American University of Rome

Rome, Italy | Summer Semester 2022 | Art/Social Science courses

#### **RELEVANT CLASSES**

#### Optomechanics | OPTI 521

Solidworks, ZEMAX, kinematic mounts, tolerancing, point of failure analysis, Thermal expansion

# Optical communications | OPTI 530 Optical fibers, Optical amplification

#### Radiometry | OPTI 306

Optical illumination systems, detectors, radiative transfer

#### Optical design | OPTI 341

CODE V, Lens design, minimizing Seidel aberrations

#### Geometrical optics | OPTI 201/202

Thin lens systems, excel models

#### **SKILLS**

PROGRAMS	GENERAL
Code V	Soldering
Zemax	Arduino
Microsoft Excel	Woodworking
Solidworks	3d printing
OnShape	laser cutting
Matlab	leadership
Lightroom	Cinematography
Photoshop	Video editing
Final Cut Pro	Public speaking

#### RESEARCH

# Ocean Optics Lab: Scripps Institution of Oceanography | Summer 2023

Expanding datasets in support of ocean color satellite missions

- Used **Matlab** to develop a physics-based algorithm to calculate an optical property of seawater  $(K_d)$
- Generalized **Matlab** code to work on 200+ files with different variables and formats
- **Lab experience** setting up a spectrophotometer to measure absorbtance and prepping particulate organic carbon filters
- Culminated in a final 15-minute research presentation

#### **PROJECTS**

# WATER-SAFE Microplastics Detection | August - Current 2023 Team Lead & Optical Engineer

A desktop device to determine the concentration, distribution, and size of microplastics in a water sample

- Developing a low-cost **fluorescence microscope** with a particle detection algorithm

# Optical Design for iPhone Telescope Adaptor | April 2023

Compact reflective telescope adaptor, 36x magnification, 1.8-degree Field of view, 80 mm aperture

- Used Excel for first-order design | Modeled, optimized, and performed tolerancing with CODE~V

#### Interactive Optical Model of the Human Eye | November 2022

Educational model to showcase the unique focusing system of the eye

- Used **Microsoft Excel** to determine the system specifications (focal lengths, image and object distanced, spacing). | Used **Solidworks** to design a custom rotating lens holder

# Cooper Union Summer Stem - "Heart of the City" $\mid$ Summer 2018

An Interactive Fluid Dynamic Model of New York City

- Used **Adobe Illustrator** to design working cam mechanisms that were **laser cut** out of acrylic. | Used **Arduino** to program interactive audio and motion-activated water pump system | Used **Onshape** to 3D model figurines, heart, and other components for **3d printing** 

# **EXTRACURRICULAR**

#### Optics Outreach Video | December - July, 2023

Directed, shot, and edited an upbeat **outreach advertisement video** commissioned by the College of Optical Sciences

#### Guest Speaker | March 17th, 2018

60 min. presentation at the "Amateur Astronomers Association of NY" showcasing astrophotography work at Kitt Peak National Observatory

# SCHOLARSHIPS | 2021-2024

Jack D. Gaskill Endowed Scholarship in Optical Sciences | ASML Optical Sciences/Optical | Engineering Scholarship | W.A. Franke Global Fellowship | Budd and Linda Parrish Endowed Engineering Scholarship