

Myles Bradford Sherman

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Multi-disciplinary engineer and physicist with experience in observational radio astronomy research, real-time software design, and electrical and mechanical rapid prototyping. Practiced educator, tutor, and lifelong learner with a passion for STEM instruction and community outreach.

EDUCATION

2026	M.S., Ph.D. Physics <i>Certificate of Practice in University Teaching</i>	California Institute of Technology (Caltech) <i>Caltech Future Faculty and Mentors</i>
2021	B.S. Electrical & Computer Engineering and Physics	Carnegie Mellon University (CMU)

TECHNICAL SKILLS

Programming	Computer-Aided Design	Lab Equipment	Shop Equipment
Python (JAX, PyTorch), C	SolidWorks	Digital/Analog Multimeter	Standard power/hand tools
C++, Cuda, Arduino API	FEKO	Soldering iron	Manual Mill & Lathe
Labview	KiCAD	Vector Network Analyzer	Bandsaw, Drill Press, Table Saw
Matlab	Eagle CAD	Oscilloscope	Ultimaker & Form2 3D Printers
SystemVerilog (FPGA)	Creo Parametric	Spectrum Analyzer	Epilog Laser Cutter

Experienced with Peer Review and Editing:

Reviewed 35 abstract submissions as part of the [FRB 2025 Conference Science Organizing Committee \(SOC\)](#).
Refereed four articles published in the *Astrophysical Journal* and *Monthly Notices of the Royal Astronomical Society*.

RESEARCH EXPERIENCE

Caltech Radio Group PhD Candidate, National Science Foundation (NSF) Graduate Research Fellow Caltech, Pasadena, CA, USA	2022-2026
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Developed polarization and Faraday rotation measure (RM) synthesis pipeline for FRBs detected with the DSA-110 radio telescope; Evaluated the theoretical pulsar detection rates and radio transient search techniques for the upcoming DSA radio telescope; Investigated the formation of magnetars by searching archival radio, optical/infrared, and *Gaia* proper-motion data for supernova remnants and runaway companion stars; Developed DSA-110 GPU-based real-time image-plane search for 134 ms - 160.8 s long radio bursts within the Galactic Plane.

Caltech Space Radiation Lab Graduate Student Researcher, B. Thomas Soifer Chair's Fellow Caltech, Pasadena, CA, USA	Fall 2021
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Characterized the linearity, inter-pixel correlation, and image persistence behavior of Complementary Metal-Oxide Semiconductor (CMOS) detectors for use in future UV astronomy missions

CMU Peterson Lab Undergraduate Student Researcher Carnegie Mellon University, Pittsburgh, PA, USA	2019-2020
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Constructed CAD models of high impedance radio antennas used to observe the Cosmic Microwave Background to detect the turn on of the universe's first stars; Simulated the frequency and time dependent response of antennas when exposed to the sky and create calibration factor

Center for Space Plasma and Aeronomics Research (CSPAR) Research Experience for Undergraduates (REU) Student University of Alabama Huntsville, Huntsville, AL, USA	2019
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Redesigned PCB layout using KiCAD software for Data Acquisition Board and testing breakout board for TRYAD CubeSat project focused on analysis of Terrestrial Gamma Ray Flashes (TGFs); Updated Arduino code used for evaluation of Science Instrument Package (SIP) and Data Acquisition Board (DAQ), and wrote Testing and Verification Plan to document testing procedures

ENGINEERING EXPERIENCE

Engineering Lab

Summer 2021

Summer Undergraduate Research Fellow (SURF)

National Institute of Standards and Technology (NIST), Gaithersburg, MD, USA (Remote)

Characterized the Fluke 8588 Digital Multimeter by fitting resonance models to alternating current (AC) measurement errors; Wrote and modified Labview programs to analyze voltage and current data from the NETZERO House project, investigating the effect of household appliance usage on the power grid

Hardware Engineering Group

Summer 2020

Summer Intern

Apple Inc., Cupertino, CA, USA (Remote)

Developed Python libraries utilizing the VXI-11 Protocol to characterize amplifiers for RF frontend and identify the most suitable device based on distortion and noise factor; Analyzed user-end data to categorize anomalies in communication link and successfully identified phase-locked-loop oscillator degradation

TechSpark Engineering Makerspace

2018-2020

Shop Assistant

Carnegie Mellon University, Pittsburgh, PA, USA

Performed routine maintenance on 3D Printers, Laser Cutters, and other fabrication hardware; assisted students with fabrication/prototyping tasks; ensured that students safely utilized Makerspace equipment and wore personal protective equipment.

Orbital Edge Computing Research Group

2018-2019

Undergraduate Researcher

Carnegie Mellon University, Pittsburgh, PA, USA

Configured Software Defined Radio to receive VHF signals from 3 NOAA weather satellites using SDR# software; decoded images for edge computing cube satellite testing; Experimented with OpenCV image matching code for use in satellite vision system

TEACHING EXPERIENCE

Teaching Assistant for “Astronomical Measurements and Instrumentation”

Spring 2026

Caltech, Pasadena, CA, USA

Designed and led two labs for graduate class focused on X-ray and Gamma-ray astronomy methods, design of space-based high-energy telescope missions, and calibration techniques. Labs consisted of analysis of data from the *Swift* Burst Analysis Telescope, *Swift* X-ray Telescope, and *Fermi* Gamma-ray Telescope using Python, NASA Heasarc tools (XSELECT, XSPEC, and FermiTools).

Instructor for “Astronomy, An Introduction”

Winter 2026

Pasadena City College (PCC) Extension, Pasadena, CA, USA

Organized and taught a non-accredited community enrichment course: [Astronomy, An Introduction](#), consisting of 4 90-minute lectures with guided notes, interactive demonstrations, in-class discussions, and beginner-level problem sets. Introduced 25 students of varying educational backgrounds (high school to graduate level) and ages (young adult to senior) to optical, IR, high-energy, and radio astronomy and areas of ongoing research within each sub-field.

Group Tutor for “Physics II for Engineering and Physics Students”

Spring 2020

Carnegie Mellon University (CMU), Pittsburgh, PA, USA

Led an EXCEL Collaborative Learning Group section for Physics II for Engineering and Physics Students (Electricity & Magnetism) course at CMU. Provided weekly hour-long tutoring sessions for a 10-student group, which included review of lecture topics using guided notes and interactive practice problem solving.

AWARDS

2026 Caltech Center for Inclusion and Diversity (CCID) Agent of Change Award

2026 Caltech Recognition for Excellence in Teaching and Mentoring

2026 Caltech Leadership Award

2021 Carnegie Mellon University Physics Department Cutkosky Award

2021 Carnegie Mellon University Senior Leadership Recognition

ASTRONOMICAL OBSERVING EXPERIENCE

“Confirming Radio Detection of Magnetar SGR J0418+5729” (1.4 hours)

Very Large Array (VLA) | Proposal VLA/25A-481

“Searching for Radio Emission from the Four ‘Low B-Field’ Magnetars” (14.25 hours)

Green Bank Telescope (GBT) | Proposal GBT/25A-328

“DSA-110 Long-Period Radio Transients” (35 hours)

Palomar 200-inch (P200) Telescope | Proposals P14 2025A & P07 2025B

STEM OUTREACH

National Council of Negro Women (NCNW)

2025-2026

Volunteer Tutor

The Caltech Y, Pasadena, CA, USA

Provided personalized 1-on-1 virtual tutoring to 9th grade student in Algebra I for 1 hour per week, including lesson reviews, practice problem walk-thoughts, and homework help.

Pasadena Activities League (PAL)

2023-2026

Volunteer Tutor

The Caltech Y, Pasadena, CA, USA

Offered after-school math, science, and grammar tutoring for middle and high school students; Led a group science activity teaching students about the origins of astronomy, telescopes, and optics.

Explore Caltech 2025

Spring 2024, Fall 2025

Volunteer Presenter

Caltech, Pasadena, CA, USA

Contributed to the Explore Caltech all-ages STEM activities fair by creating radio astronomy demonstrations. Provided a public talk on the complex nature of neutron stars. Implemented an interactive map of transient radio sources and miniature interferometry demo. Wrote and distributed easy-to-read introductory materials on the origins of American radio astronomy and interferometry.

Electrical and Computer Engineering Outreach Club

2019-20

Lab Development Co-Chair

Carnegie Mellon University, Pittsburgh, PA, USA

Designed introductory electrical and computer engineering workshops using the Arduino and Python API's for middle and high-school students, including Mobile Labs at Oakland Catholic High School and Spark Saturdays for students visiting CMU Campus. Organized a virtual Python programming workshop.

National Society of Black Engineers

2018-19

Pre-College Initiatives Chair

Carnegie Mellon University, Pittsburgh, PA, USA

Facilitated and participated in CMU NSBE 100 Black Men collaboration to tutor middle and high school students from under-represented communities. Developed and led engineering lab activities for Pittsburgh NSBE Jr. middle-school chapter, including beginners circuitry and building electric motors.

FIRST-AUTHOR PUBLICATIONS

Sherman, Myles B., et al. **“Deep Synoptic Array Science: Searching for Long Duration Radio Transients with the DSA-110.”** Publications of the Astronomical Society of the Pacific 138.2 (2026): 024501.

Sherman, Myles B., et al. **“Searching for magnetar binaries disrupted by core-collapse supernovae.”** Monthly Notices of the Royal Astronomical Society 531.2 (2024): 2379-2414.

Sherman, Myles B., et al. **“Deep Synoptic Array Science: Polarimetry of 25 New Fast Radio Bursts Provides Insights into Their Origins.”** The Astrophysical Journal 964.2 (2024): 131.

Sherman, Myles B., et al. **“Deep Synoptic Array Science: Implications of Faraday Rotation Measures of Fast Radio Bursts Localized to Host Galaxies.”** The Astrophysical Journal Letters 957.1 (2023): L8.