Orlando M. Romeo

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EDUCATION

12/2024   **University of California, Berkeley, CA**
Doctor of Philosophy, Earth and Planetary Science

05/2020   **University of Maryland, College Park, MD**
Bachelor of Science (Honors), Physics - Magna Cum Laude
Bachelor of Science (Honors), Astronomy - Magna Cum Laude

RESEARCH INTERESTS

Heliophysics:	Solar wind dynamics, Coronal mass ejections, Wave-particle interactions
Planetary Science:	Crustal magnetization, Planetary magnetospheres, Planetary surfaces
Geospace:	Space physics, Space weather prediction, Radiation belt modeling
Instrumentation:	Electrostatic analyzers, X-ray optics, Magnetometers, Space mission design
Data Methods:	Time Series Analysis, Scientific modeling, Machine learning

RESEARCH EXPERIENCE

01/2025 – Present   **Postdoctoral Researcher**, University of California Berkeley/SSL
Parker Solar Probe (PSP) SWEAP Team, *Advisor: Dr. Davin Larson*
- Producing solar wind electron parameters from the SPAN-E ESA on PSP
- Studying Coronal Mass Ejections with in situ measurements close to the Sun
- Developing 3D ray-tracing numerical algorithms for plasma instrument simulations

08/2020 – 12/2024   **Graduate Student Researcher**, University of California Berkeley/SSL
Parker Solar Probe (PSP) SWEAP Team, *Advisor: Dr. Davin Larson*
- Calibrated SPAN-E ESA on PSP to produce solar wind electron parameters
- Studied electron strahl scattering under varying solar wind conditions
- Collaborated with other instrument teams to produce additional data products

FOXSI-4 Sounding Rocket Mission, *Advisor: Dr. Juan Camilo Buitrago-Casas*
- Assembled, tested, and integrated the Solar Aspect and Alignment System (SAAS)
- Performed laser and X-ray alignment tests and simulations for the optics modules
- Supported multiple stages of rocket integration at SSL, WSMR, & PFRR
- Monitored solar conditions to capture real-time observations of an M-class solar flare

InSight & Zhurong Surface Magnetometers, *Advisor: Dr. Michael Manga*
- Conducted Monte Carlo simulations of crustal magnetic fields on Mars
- Determined probable magnetic coherence scales and depths below each landing site
- Developed geological magnetization models to study the Martian geodynamo history

SWFO-L1 STIS Team, *Advisor: Dr. Davin Larson*
- Characterized magnetic field emission from the STIS solid-state telescope
- Tested Amptek pre-amps on the electronics board for each detector channel
- Performed detector calibration tests with high-energy ion beams and radioactive sources to validate instrument performance
- Monitored STIS conditions during spacecraft Thermal Vacuum Chamber testing

05/2019 – 09/2020   **Planetary Undergraduate Researcher**, NASA Goddard Space Flight Center
MAVEN Proton Cyclotron Waves (PCWs), *Advisor: Dr. Norberto Romanelli*
- Identified PCWs near Mars using Fourier and minimum variance analysis on MAVEN magnetometer data
- Characterized PCWs and shock processes upstream of the Martian bow shock based on solar wind and planetary properties derived from the MAG and SWIA instruments

08/2017 – 06/2020   **Plasma Physics Undergraduate Researcher**, University of Maryland
Machine Learning Space Weather Forecasting, *Advisor: Dr. Surjalal Sharma*
- Adapted detrending fluctuation analysis on Advanced Composition Explorer (ACE) space weather data to detect long-range correlations over several days
- Forecasted space weather parameters using nonlinear and data-derived techniques (delay embedding, singular value decomposition, and nearest neighbor tree search)

Magnetic Nanoparticle Antennas, *Advisor: Dr. Dennis Papadopoulos*
- Simulated magnetization dynamics for nanoparticles in ferro-fluid antennas from the Stoner-Wohlfarth Model, including effects of magnetization precession, hysteresis, and quantum tunneling
- Calculated nanoparticle magnetization states to determine energy efficient materials for CubeSat antennas in plasma environments

05/2017 – 08/2018   **Space Physics Undergraduate Researcher**, Johns Hopkins University APL
RBSP Data-Driven Forecasting, *Advisor: Dr. Aleksandr Ukhorskiy*
- Modeled radiation belt electron energy flux (eflux) from Dst index using particle diffusion theory
- Filtered eflux measurements based on adiabatic invariants from the MagEIS and REPT instruments on the Van Allen Probes (RBSP) to calculate electron Phase Space Density (PSD)
- Forecasted PSD from geomagnetic parameters and geosynchronous satellite observations, implementing nonlinear and data-derived techniques, such as delay embedding, singular value decomposition, and nearest neighbor tree search

01/2017 – 06/2017   **Seismology Undergraduate Researcher**, University of Maryland
Seismic Wave Travel Times of Varying Frequencies, *Advisor: Dr. Vedan Lekic*
- Cross-correlated observed travel times of seismic waves during the 2013 Sea of Okhotsk Earthquake with seismograms from the Preliminary Reference Earth Model (PREM) and Generalized Seismological Data Functionals (GSDF) method
- Adapted Fourier and Gaussian wavelet analysis to filter the correlograms based on varying levels of frequency to calculate phase arrival times
- Developed new framework for earthquake predictions with error bound estimation using significant deviations from PREM to characterize Earth's interior structure

09/2015 – 12/2016   **Space Physics Intern**, Johns Hopkins University APL
Solar Wind and IMF Activity on SAA Intensity, *Advisor: Dr. Robert Schaefer*
- Filtered UV spectrographic imaging from the Defense Meteorological Satellite Program (DMSP) based on photon counts and geographical, lunar and solar positions
- Fitted photon counts in the South Atlantic Anomaly (SAA) region of Earth to a spherical harmonics model for daily SAA intensity
- Correlated SAA intensity with solar wind speed and IMF activity from ACE

TEACHING EXPERIENCE

Academic Courses

University of California Berkeley, Department of Earth & Planetary Science (EPS)

Fall 2021
: **EPS Graduate Student Grader**, *EPS150 – Case Studies in Earth Systems*
  - Reviewed weekly manuscripts related to Earth's carbon cycle and Martian hydrology
  - Graded weekly student abstracts summarizing each research paper

Spring 2021
: **EPS Graduate Student Instructor**, *EPS50 – The Planet Earth*
  - Instructed students during weekly three-hour lab sections on the study of minerals, rocks, geologic maps, and geological processes
  - Designed weekly lab assignments and created questions for midterm and final exams
  - Assisted students during weekly three-hour office hours and exam review sessions

University of Maryland, College Park, Department of Astronomy

Fall 2019
: **Astronomy Teaching Assistant**, *ASTR310 – Observational Astronomy*
  - Directed weekly two-hour research labs on image processing and data analysis
  - Aided students during two-hour office hours with programming troubleshooting
  - Graded weekly quizzes, lab activities, exams, and research projects

University of Maryland, College Park, Department of Physics

Spring 2020
: **Physics Teaching Assistant**, *PHYS121 – Fundamentals of Physics I*
  - Graded weekly quizzes/exams for 120 students focused on introductory physics
  - Held weekly one-hour discussion classes and two-hour office hours
  - Led two-hour lab sections using Microsoft Excel, Logger Pro, and physics demos

Fall 2019
: **Physics Teaching Assistant**, *PHYS161– General Physics*
  - Graded quizzes/exams for 120 students focused on mechanics and particle dynamics
  - Assisted students during weekly two-hour office hours and exam review sessions

Spring 2019
: **Python Session Instructor**, *PHYS205: Developing Essential Research Skills*
  - Instructed Python coding sessions over two weeks to undergraduate freshmen
  - Provided an overall introduction to Python with basics of coding syntax and logic
  - Presented data science methods to visualize and analyze cosmic ray counts from the Bartol Research Institute Neutron Monitor Program

Summer 2018
: **Arduino Program Instructor**, *UMD Physics Summer Girls Outreach Program*
  - Led Arduino programming workshop for 60 female high school students
  - Introduced Arduino code, sensors, and circuits to monitor plant growth over 1 week
  - Presented methods to extract and visualize data for plant sustainability statistics

Extracurricular Instruction

Churchville Martial Arts Academy, Churchville MD

Spring 2016 – Fall 2019
: **Martial Arts Head Sensei/Instructor**, *Beginner & Advanced Class*
  - Instructed Okinawan Shotokan Karate as a black belt sensei with over 15 years of training to over 200 students aged between 3 and 50 years old
  - Organized beginner and advanced classes, belt ranking exams, outreach events, martial arts handbooks and various supplies

Student Mentoring

University of California Berkeley, Space Sciences Lab (SSL)

Spring 2025 − Present	**Heliophysics Mentor**, *Student: Yuqi Zhang* • Junior undergraduate student (Berkeley International Study Program) developed *CMEMoss*, a public python tool that performs general searches for spacecraft conjunctions with CME trajectories
Summer 2025	**ASSURE REU Mentor**, *Student: Joseph Byrnes* • Junior undergraduate student simulated spacecraft electrostatic charging in various space plasma environments using *SPIS* to support flight calibration and future mission design
Summer 2024	**FOXSI-5 SAAS/Optics Mentor**, *Student: Danny Sun* • Graduate student improved the SAAS instrument and performed optical alignment tests for the FOXSI-5 sounding rocket mission
Summer 2023	**ASSURE REU Mentor**, *Student: Elyas Ahmed* • Sophomore undergraduate utilized machine learning techniques (PySR) to characterize solar wind electron strahl scattering observed by PSP − Ahmed, E. *et al.* (2023). Machine Learning for Electron Distributions Observed by PSP. *AGU Fall Meeting Abstracts*, SH31D-3005.
Summer 2022	**ASSURE REU Mentor**, *Student: Kyla Giron* • Sophomore undergraduate investigated a potential Earth to Sun connection by studying possible asymmetries in flare and CME production on the Sun − Giron, K. *et al.* (2022). Investigating a Possible Earth to Sun Connection - Can the Earth Affect the Sun. *AGU Fall Meeting Abstracts*, ED35D-0579.

University of California Berkeley, Department of Earth & Planetary Science (EPS)

Fall 2023 − Spring 2024	**EPS Graduate Student Mentor**, *EPS Graduate Mentoring Program* • Mentored three first-year graduate students in the EPS department • Established and tracked short/long term goals for students over academic year • Advised on navigating graduate school, research, and networking

SELECT AWARDS & CERTIFICATIONS

2024	**Certification of Heliophysics Mission Design School** − *NASA/JPL*
2023	**Group Achievement Award for Parker Solar Probe Team** − *NASA*
2023	**Certification of Heliophysics Summer School** − *NASA/UCAR*
2022	**FINESST Fellowship Award (Heliophysics Division)** − *NASA*
2022	**Certification of Solar Orbiter Summer School** − *ESA/CNES*
2022	**SSL Robert P. Lin Graduate Fellowship** − *University of California, Berkeley*
2022	**Travel Award for SHINE 2022 Workshop** − *SHINE*
2019	**William M. MacDonald Physics Scholarship** − *University of Maryland*
2017 − 2020	**Group Award for SPS Outstanding Chapter (Annual)** − *AIS SPS*
2016 − 2020	**JHU APL Academic Merit Scholarship (Annual)** − *JHU APL*
2016 − 2020	**Angelo Bardasis Physics Scholarship (Annual)** − *University of Maryland*

PUBLICATIONS

32. **Romeo, O. M.**, *et al.* (2025). Scales of Martian crustal magnetization constrained by MAVEN, InSight, and Zhurong. *Journal of Geophysical Research: Planets*, *130*, e2025JE008986.

31. Pulupa, M., ..., **Romeo, O. M.**, *et al.* (2025). Highly Polarized Type III Storm Observed with Parker Solar Probe. *The Astrophysical Journal Letters*, *987(2)*, L34.

30. Phan, T., **Romeo, O. M.**, *et al.* (2025). Parker Solar Probe Observations of a Highly Energetic and Asymmetric Reconnecting Heliospheric Current Sheet during Encounter 13. *The Astrophysical Journal*, *986(2)*, 209.

29. Huang, J., ..., **Romeo, O. M.**, *et al.* (2025). The Temperature Anisotropy and Helium Abundance Features of Alfvénic Slow Solar Wind Observed by Parker Solar Probe, Helios, and Wind Missions. *The Astrophysical Journal Letters*, *986(2)*, L28.

28. Alnussirat, S. T., ..., **Romeo, O. M.**, *et al.* (2025). Impulsive Solar Flares in the Parker Solar Probe Era. I. Low-energy Electron, Proton, and Alpha Beams. *The Astrophysical Journal Letters*, *985(1)*, 19.

27. Riley, P., ..., **Romeo, O. M.**, *et al.* (2025). Understanding the global structure of the September 5, 2022, coronal mass ejection using sunRunner3D. *Journal of Space Weather and Space Climate*, *15*, 17.

26. Muro, G. D., ..., **Romeo, O. M.**, *et al.* (2025). Radial Dependence of Ion Fluences in the 2023 July 17 Solar Energetic Particle Event from Parker Solar Probe to STEREO and ACE. *The Astrophysical Journal Letters*, *981(1)*, 8.

25. Ruffolo, D., ..., **Romeo, O. M.**, *et al.* (2024). Observed Fluctuation Enhancement and Departure from WKB Theory in Sub-Alfvénic Solar Wind. *The Astrophysical Journal Letters*, *977(1)*, L19.

24. Shaver, S. R., ..., **Romeo, O. M.**, *et al.* (2024). Exploring Observational Heliophysics Across All Scales: Reflections and Insights From the 2023 NASA Heliophysics Summer School. *Perspectives of Earth and Space Scientists*, *5(1)*, e2023CN000217.

23. Ervin, T., ..., **Romeo, O. M.**, *et al.* (2024). Near Subsonic Solar Wind Outflow from an Active Region. *The Astrophysical Journal*, *972(1)*, 129.

22. Phan, T. D., ..., **Romeo, O. M.**, *et al.* (2024). Multiple Subscale Magnetic Reconnection Embedded inside a Heliospheric Current Sheet Reconnection Exhaust: Evidence for Flux Rope Merging. *The Astrophysical Journal Letters*, *971(2)*, L42.

21. Ervin, T., ..., **Romeo, O. M.**, *et al.* (2024). Compositional Metrics of Fast and Slow Alfvénic Solar Wind Emerging from Coronal Holes and Their Boundaries. *The Astrophysical Journal*, *969(2)*, 83.

20. Cohen, C. M. S., ..., **Romeo, O. M.**, *et al.* (2024). Observations of the 2022 September 5 Solar Energetic Particle Event at 15 Solar Radii. *The Astrophysical Journal*, *966(2)*, 148.

19. Zaslavsky, A., ..., **Romeo, O. M.**, *et al.* (2024). Probing Turbulent Scattering Effects on Suprathermal Electrons in the Solar Wind: Modeling, Observations, and Implications. *The Astrophysical Journal*, *966(1)*, 60.

18. Huang, J., ..., **Romeo, O. M.**, *et al.* (2024). Erratum: "Parker Solar Probe Observations of High Plasma β Solar Wind From the Streamer Belt." *The Astrophysical Journal Supplement Series*, *271(2)*, 66.

17. Eriksson, S., ..., **Romeo, O. M.**, *et al.* (2024). Parker Solar Probe Observations of Magnetic Reconnection Exhausts in Quiescent Plasmas near the Sun. *The Astrophysical Journal*, *965(1)*, 76.

16. Palmerio, E., ..., **Romeo, O. M.**, *et al.* (2024). On the Mesoscale Structure of Coronal Mass Ejections at Mercury's Orbit: BepiColombo and Parker Solar Probe Observations. *The Astrophysical Journal*, *963(2)*, 108.

15. McManus, M. D., ..., **Romeo, O. M.**, *et al.* (2024). Proton- and Alpha-driven Instabilities in an Ion Cyclotron Wave Event. *The Astrophysical Journal*, *961(1)*, 142.

14. Mozer, F. S., ..., **Romeo, O. M.**, *et al.* (2023). Density Enhancement Streams in The Solar Wind. *The Astrophysical Journal Letters*, *957(2)*, L33.

13. Alnussirat, S. T., ..., **Romeo, O. M.**, *et al.* (2023). Dispersive Suprathermal Ion Events Observed by the Parker Solar Probe Mission. *The Astrophysical Journal Letters*, *954(1)*, L32.

12. **Romeo, O. M.**, *et al.* (2023). Near-Sun in situ and remote-sensing observations of a Coronal Mass Ejection and its effect on the Heliospheric Current Sheet. *The Astrophysical Journal*, *954(2)*, 168.

11. Huang, J., ..., **Romeo, O. M.**, *et al.* (2023). The Temperature, Electron, and Pressure Characteristics of Switchbacks: Parker Solar Probe Observations. *The Astrophysical Journal*, *954(2)*, 133.

10. Huang, J., ..., **Romeo, O. M.**, *et al.* (2023). The Structure and Origin of Switchbacks: Parker Solar Probe Observations. *The Astrophysical Journal*, *952(1)*, 33.

9. Bowen, T. A., ..., **Romeo, O. M.** (2023). Constraining Collisionless Processes in Planetary Magnetospheres. *Uranus Flagship: Investigations and Instruments for Cross-Discipline Science Workshop*, *2808*, 8170.

8. Mozer, F. S., Bale, S. D., Kellogg, P., **Romeo, O. M.**, *et al.* (2023). Arguments for the physical nature of the triggered ion-acoustic waves observed on the Parker Solar Probe. *Physics of Plasmas*, *30(6)*, 062111.

7. Mozer, F. S., ..., **Romeo, O. M.**, *et al.* (2023). Direct observation of solar wind proton heating from in situ plasma measurements. *Astronomy & Astrophysics*, *673*, L3.

6. Huang, J., ..., **Romeo, O. M.**, *et al.* (2023). Parker Solar Probe Observations of High Plasma β Solar Wind from the Streamer Belt. *The Astrophysical Journal Supplement Series*, *265(2)*, 47.

5. Short, B., Malaspina, D. M., Halekas, J., **Romeo, O. M.**, *et al.* (2022). Observations of Quiescent Solar Wind Regions with Near-f_{ce} Wave Activity. *The Astrophysical Journal*, *940(1)*, 45.

4. McManus, M. D., ..., **Romeo, O. M.**, *et al.* (2022). Density and Velocity Fluctuations of Alpha Particles in Magnetic Switchbacks. *The Astrophysical Journal*, *933(1)*, 43.

3. Mozer, F. S., ..., **Romeo, O. M.** (2022). An Improved Technique for Measuring Plasma Density to High Frequencies on the Parker Solar Probe. *The Astrophysical Journal*, *926(2)*, 220.

2. Bandyopadhyay, R., ..., **Romeo, O. M.**, *et al.* (2022). Sub-Alfvénic Solar Wind Observed by the Parker Solar Probe: Characterization of Turbulence, Anisotropy, Intermittency, and Switchback. *The Astrophysical Journal*, *926(1)*, L1.

1. **Romeo, O. M.**, *et al.* (2021). Variability of Upstream Proton Cyclotron Wave Properties and Occurrence at Mars Observed by MAVEN. *Journal of Geophysical Research: Space Physics*, *126(2)*, e28616.

PRESENTATIONS (First Author)

International − Oral

2024   American Geophysical Union Fall Meeting, *Overview of PSP Electron Observations from 10 to 100 Solar Radii*, Washington D.C., USA

2024   45th COSPAR Scientific Assembly, *Near-Sun In Situ & Remote Sensing Observations of a CME and its Effect on the HCS*, Busan, South Korea

International − Poster

2023   American Geophysical Union Fall Meeting, *Determination and Calibration of Solar Wind Electron Moments Observed by PSP*, San Francisco CA, USA

2023   16th International Solar Wind Conference, *Determining the Anatomy of an ICME by Relating Remote Sensing and In Situ Observations Within 13 Rs*, Pacific Grove CA, USA

2022   American Geophysical Union Fall Meeting, *Characterization of Solar Wind Strahl Electron Scattering Observed by PSP*, Chicago IL, USA

2022   44th COSPAR Scientific Assembly, *Characterization of Strahl Electron Scattering in the Solar Wind Observed by PSP*, Athens, Greece

2022   Solar Orbiter Summer School, *Solar Wind Electron Distributions as Observed by PSP*, Sète, France

2021   American Geophysical Union Fall Meeting, *Characterization of Strahl Electron Scattering in the Solar Wind Observed by PSP*, New Orleans LA, USA

2019   American Geophysical Union Fall Meeting, *Solar Longitudinal Variability of Waves at the Local Proton Cyclotron Frequency*, San Francisco CA, USA

National − Oral

2025   JHU/APL Parker Solar Probe Fourth Annual Conference, *Evolution of Electron Distributions During the March 13, 2023, ICME Observed by PSP*, Laurel MD, USA

2023   JHU/APL Parker Sixteenth Science Working Group Meeting, *CME Anatomy from Remote Sensing Observations and In-situ Measurements near 13 Rs*, Pasadena CA, USA

National − Poster

2022   JHU/APL Parker Solar Probe Second Annual Conference, *Characterization of Strahl Electron Scattering in the Solar Wind Observed by PSP*, Laurel MD, USA

2019   AIP/Sigma Pi Sigma Physics Congress, *Seasonal Variability of Waves near the Proton Cyclotron Frequency Upstream from Mars*, Providence RI, USA

2019   MAVEN Project Science Group Meeting, *Seasonal Variability of Waves near the Proton Cyclotron Frequency Upstream from Mars*, Boulder CO, USA

Institutional − Oral

2025   University of California, Berkeley Space Sciences Seminar, *Exploring the Inner Heliosphere with Novel in situ Measurements*, Berkeley CA, USA

2025 Parker Solar Probe Electron Working Group Meeting, *Calibration of the SPAN-E Instruments on Parker Solar Probe*, Virtual

2022 Space Sciences Lab Robert P. Lin Fellowship Seminar, *Electron Distribution Evolution near the Sun Observed by PSP*, Berkeley CA, USA

2018 University of Maryland Astronomical Observatory Open House, *Changes in Brightness for Cataclysmic Variables in Different Galactic Regions*, College Park MD, USA

2018 Johns Hopkins University APL Student Expo, *Data Driven Forecasting Model of Radiation Belt Intensities*, Laurel MD, USA

Institutional − Poster

2019 NASA Goddard Space Flight Center Student Poster Expo, *Seasonal Variability of Waves near the Proton Cyclotron Frequency Upstream from Mars*, Greenbelt MD, USA

2017 University of Maryland Physics Research Showcase, *Seismic Wave Travel Times at Varying Frequencies*, College Park MD, USA

2016 Science and Math Academy Symposium, *Correlation of Solar Wind and IMF Activity on SAA Intensity*, Aberdeen MD, USA

GRANTS & CONTRACTS

Funded

09/2025 **The Superhalo Enigma: Characterizing Energetic Electrons in the Inner** − 09/2027 **Heliosphere** (Funded by ISSI Teams) − Trotta (PI), Romeo (Collaborator)

08/2022 **Determination of Processes that Control Electron Distribution Evolution** − 08/2025 **near the Sun as Observed by PSP** (Funded by NASA FINESST) − Larson (PI), Romeo (Graduate Student)

Under Review

04/2026 **Multi-Scale Coherence of Martian Crustal Fields: Constraints on Dynamo** − 04/2028 **History and Surface Evolution** (Funded by NASA) − Romeo (PI)

01/2026 **The Lunar Particle Investigation with Neutrons for Environmental Moni-** − 06/2029 **toring** (Funded by NASA) − Alnussirat (PI), Romeo (Deputy PI)

01/2026 **Investigation of Particle Acceleration in Impulsive Solar Flares using Solar** − 01/2029 **Orbiter and Parker Solar Probe Observations** (Funded by NSF) − Alnussirat (PI), Romeo (Postdoc)

06/2025 **Student Electron Electrostatic analyzer (SEE): The Student Collaboration** − 03/2031 **Instrument for HelioSwarm** (Funded by NASA) − Whittlesey (PI), Romeo (Co-I)

SERVICE & OUTREACH

Professional

2025 NASA ROSES Solicitation, *External Reviewer*
2024 NASA ROSES Solicitation, *Executive Secretary*
2024 The Astrophysical Journal, *Reviewer of 1 manuscript*
2024 Geophysical Research Letters, *Reviewer of 1 manuscript*
2022 The Astrophysical Journal, *Reviewer of 1 manuscript*
2022 Heliophysics 2050 Workshop: Space Physics, *Executive Secretary*
2021 AGU Fall Meeting Parker Solar Probe Session, *Volunteer Chair*
2020 Intersect: The Stanford Journal of STS, *Reviewer of 1 manuscript*

Community

2025 − Present	California Academy of Sciences, *Data Analysis Volunteer*
2025	SSL ASSURE REU Program, *Poster Judge*
2024	California Academy of Sciences SuperNatural Event, *Science Volunteer*
2024	SSL ASSURE REU Program, *Poster Judge*
2023	SSL ASSURE REU Program, *Guest Speaker on Planetary Environments*
2022	SSL ASSURE REU Program, *Student Application Reviewer*
2022, 2023	California Academy of Sciences, *Science Volunteer*
2020	UMD SPS Group Meeting: Python Basics, *Lead Python Workshop Instructor*
2019	UMD Society of Physics Students, *President*
2019	Sigma Pi Sigma Physics Congress, *UMD Booth Volunteer*
2019	UMBC SPS National Zone 4 Meeting, *Lead Python Workshop Instructor*
2018	UMD SPS National Zone 4 Meeting, *Lead Arduino Workshop Instructor*
2017, 2018	UMD Society of Physics Students, *Vice President*

Media Outreach

2024	Science Article Author, *UCB/SSL article on FOXSI-4 rocket launch*
2023	Press Release on *Romeo et al. 2023*, *JHU/APL article and multiple news outlets*

PROFESSIONAL SKILLS

Programming & Software
- Python
- IDL
- MATLAB
- Julia
- Arduino
- Java
- UNIX
- Git
- HTML/CSS

Data Methods
- Data Pipelines
- Data Visualization
- Time Series Analysis
- Signal Processing
- Machine Learning & AI
- Scientific Modeling
- Numerical & Monte Carlo Simulations
- Algorithm Development
- Statistical Methods
- Code Optimization
- Parallel Processing

Instrumentation & Lab Experience
- Electrostatic Analyzers
- Magnetometers
- Solid State Telescopes
- Observatory Telescopes
- Oscilloscopes
- Raspberry Pi
- Vacuum Chambers
- 3D Printing
- Circuit Design & Testing
- Optics Alignment
- Magnetic Characterization
- Radioactive Sources

Soft Skills
- Public Speaking
- Community Outreach
- Team Collaborations
- Team Leadership
- Student Mentorship
- Project Management
- Event Coordination
- Scientific Writing

Languages
- English (Native)
- Italian (Proficient)
- Spanish (Beginner)