# Emma Mirizio

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## EDUCATION

**University of Maryland, College Park** **GPA: 3.84 | College Park, MD**
*Bachelor of Science in Astronomy and Physics* *Graduating December 2020*

## RESEARCH EXPERIENCE

**NASA Goddard Space Flight Center** **Greenbelt, Maryland**
*Summer Intern, Sally Ride Intern (Fall)* *June 2020 - present*

- Analyzed Solar Energetic Particle data from the STEREO mission High Energy Telescope in order to better understand the solar environment.

**NASA Goddard Space Flight Center** **Greenbelt, Maryland**
*Student Research Assistant* *January 2018 - present*

- Analyzed small-mass meteor compositions and properties using spectroscopy from a sample of 20 meteors detected in Arecibo, Puerto Rico.
- Detected nearly 500 sporadic meteors entering Earth's atmosphere optically, and developed methods for determining properties of meteors such as mass and luminosity.
- Presented research at the 2018 and 2019 American Geophysical Union Fall Meetings in Washington, D.C. and San Francisco.

**Caltech GROWTH SURF Program / The University of Sydney** **Sydney, Australia**
*Research Intern* *May 2019 - August 2019*

- Developed a method to detect binary neutron star mergers in radio using new data from the Australian Square Kilometer Array Pathfinder (ASKAP) telescope.
- Identified and explored dozens of new radio sources from the Rapid ASKAP Continuum Survey.

**NASA Goddard Space Flight Center** **Greenbelt, Maryland**
*Summer Intern* *June – August 2016 and 2017*

- Created educational materials for the Hubble Space Telescope Education Outreach office.
- Studied events in the solar wind using the ACE and Wind satellites.
- Presented posters at the 2016 and 2017 NASA Intern Poster Sessions.

## TEACHING AND OUTREACH

**Department of Astronomy, University of Maryland** **College Park, Maryland**
*Teaching Assistant* *January 2020 - May 2020*

- Led weekly discussions about introductory astronomy and fields questions about the course content and beyond, planning and executing the switch to virtual teaching.
- Assisted in teaching during lectures and demonstrations and evaluates student work.

*Outreach Volunteer* *May 2019 – present*

- Volunteered at various events held in the community such as telescope nights and astronomy events at Maryland Day.

**Department of Physics, University of Maryland** **College Park, Maryland**
*Teaching Assistant* *January 2019 - May 2019*

- Developed lesson plans and quizzes for an introductory university physics course.
- Taught weekly lab sessions about various physics concepts and evaluated student work.

## MEMBERSHIPS AND ACTIVITIES

- **Conference of Undergraduate Women in Astronomy:** Attended and presented research at the first national conference at the West Virginia University, October 2019.
- **MIT/University of Oulu ISR Summer School:** Attended and presented incoherent scatter radar research in Pudasjärvi, Finland, August 2019.
- **Society of Physics Students, UMD Chapter:** Member and volunteer for the society, September 2018 - present.
- **WMUC FM Campus Radio Station:** Involved member and radio host of the show Radio Astronomy, airing weekly, September 2018 - present.
- **Terps in Space:** Researcher on bacterium sent to the ISS, presented work at UMD's 2018 Bioscience research fair. September 2017 - present.

## HONORS AND AWARDS

**John Mather Nobel Scholar** *Awarded Summer 2020*
**Sally Ride Intern Award Recipient** *Awarded Fall 2020*
**Caltech FUTURE of Physics Program** *Attended Fall 2019*
**University of Maryland Academic Honors** *Received every semester*
**Design Cultures and Creativity, UMD Honors College Citation** *Awarded Spring 2019*
**Angelo Bardasis Scholarship, UMD Department of Physics** *Awarded Spring 2019*
**Maryland Space Grant Consortium Scholarship** *Awarded Spring 2019, 2020*

## PUBLICATIONS AND PRESENTATIONS

Michell, R. G., Mirizio, E. R., Samara, M. The statistics of small-mass meteors observed simultaneously with optical imaging and the Poker Flat Incoherent Scatter Radar. *Planetary and Space Science.* Accepted, May 2020.

Mirizio, E. R. & Murphy, T. A method to Detect Neutron Star Mergers in Radio with ASKAP. *Caltech GROWTH Collaboration Summer School and Conference.* Presented, August 2019.

Mirizio, E. R., Michell, R. G., Richardson, D. C. Spectral Analysis of Optically Detected Small-Mass Meteors. *AGU Fall Meeting 2019.* Presented, December 2019.

Mirizio, E. R. & Michell, R. G. Statistical Analysis of Optical and Radar Meteor Detection from PFISR. *AGU Fall Meeting 2018.* Presented, December 2018.

Mannuel S. A., & Mirizio, E. R. P. aeruginosa Biofilm Formation on Antimicrobial Silicone in Microgravity. *UMD Bioscience Day.* Presented, November 2018.

## SKILLS

Python, MatLab, HTML, LaTeX, Adobe Photoshop & Premiere, Microsoft Office (Excel, PowerPoint, Word)