

# Leah M. Fulmer

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## Summary

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Versatile, open-minded research scientist, software developer, and natural healer with a background in astronomy. Applying diverse computational skills toward my passion for natural health; remaining unattached to the fruits.

## Skills

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### Programming:

Python (advanced: numpy, matplotlib, pandas, Jupyter; intermediate: seaborn, astropy, scipy, scikit-learn); HTML, CSS, JavaScript, SQL, Tableau, Microsoft Excel, Lisp, Emacs, Unix/Bash, IDL, CASA, IRAF; data collection/cleaning, joining multiple data sources, data analysis (tabular, photometric, spectroscopic).

### Communication:

GitHub (git), academic publication, public speaking, poster presentation, collaboration with users, networking; communication with diverse stakeholders, program coordination, grant writing, fiscal responsibility, education.

### Natural Healing:

Spiritual practice, daily meditation, Egoscue posture therapy, vision improvement, fertility awareness, sobriety.

### World Languages:

Spanish (advanced: speaking, reading, writing).

## Education

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### Codecademy

Certificate in Business Intelligence Data Analysis

January 2024 - June 2024

Madison, WI

### University of Washington

Master of Science in Astronomy

September 2018 - June 2021

Seattle, WA

### University of Wisconsin-Madison

Bachelor of Science in Astronomy-Physics & Spanish

September 2013 - May 2017

Madison, WI

University of Chile & Pontifical Catholic University of Chile

February 2016 - August 2016

Council on International Educational Exchange Study Abroad

Santiago, Chile

*Academic Distinction, Honors in the Major, Departmental Prize in Astronomy, 3.82/4.00 Cumulative GPA*

## Professional Experience

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### BadgerBots Robotics Corporation

Community Engagement Program Organizer, Assistant Educator

May 2022 - December 2023

Madison, WI

*Advisors: Johanna Taylor & Janelle Greene*

- Lead all communication, coordination, and growth initiatives related to the BadgerBots Community Engagement Program, making robotics education accessible to students of underrepresented backgrounds.
- Secured funding from both public grants and individual donations to support program activities.
- Managed program budget and presented fiscal activity internally and externally through seasonal reports.
- Designed original robotics education lessons; served as Assistant Educator during all educational instances.

### National Optical Astronomy Observatory, now NSF's NOIRLab

Data Reduction Specialist

October 2017 - July 2018

Tucson, AZ

*Advisors: Dr. Stephanie Juneau, Dr. Knut Olsen, & Dr. Mark Dickinson*

- Processed and cleaned ("reduced") data from the ESO VLT Visible Imaging Multi-Object Spectrograph, producing a catalog of redshift measurements for our population of ~400 galaxies to use in future studies.
- Synthesized public-facing scientific and technical tutorials to highlight the functionality of the Astro Data Lab's existing tools; tutorials written as Jupyter Notebooks directly querying the Astro Data Lab's archive.

## Research Experience

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### University of Wisconsin-Madison

January 2014 - January 2020

#### Undergraduate Research Assistant

Madison, WI

Advisor: Professor John (Jay) Gallagher, III

- Lead a photometric study of massive stars within the Small Magellanic Cloud Wing, revealing an erratic, popcorn-like mode of star formation despite an apparent lack of gaseous resources from which to form stars.
- Lead an analysis of the galaxy NGC 5523, constraining the timescales and masses of potential non-disruptive mergers between it and former companions, discovering a probable history of “isolation by annexation”.

### Space Telescope Science Institute

June 2017 - August 2017

#### Space Astronomy Summer Program Intern

Baltimore, MD

Advisor: Dr. Mark Giuliano

- Created a dynamic visualization tool for the efficient analysis of Hubble Space Telescope and James Webb Space Telescope scheduling constraints, to ultimately streamline the process of space-based data acquisition.
- Collaborated closely with telescope schedulers (users) and quickly adapted the tool to match their feedback.

### Yale University

June 2015 - July 2016

#### Dorrit Hoffleit Undergraduate Research Scholar

New Haven, CT

Advisor: Professor Jeffrey (Jeff) Kenney

- Joined and tidied ultraviolet-through-infrared photometric data for 50 galaxies within the Virgo Cluster.
- Modeled the observational data with theoretical spectral energy distributions and derived physical properties from these models, revealing a common stage of neutral gas accretion among infalling cluster galaxies.

## Publications

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- [1] *Testing massive star evolution, star-formation history, and feedback at low metallicity: Photometric analysis of OB stars in the SMC Wing* **Fulmer, Leah M.**; Gallagher, J. S.; Hamann, W. -R.; Oskinova, L. M.; Ramachandran, V., 2020, A&A, 633, A164. Reproduce analysis using Jupyter Notebooks: [Link to GitHub](#).
- [2] *NGC 5523: An isolated product of soft galaxy mergers?* **Fulmer, Leah M.**; Gallagher, J. S.; Kotulla, R., 2017, A&A, 598, 119.

## Honors, Awards, & Societies

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- NSF Graduate Research Fellowship : *National Science Foundation* 2020
- AAS Education and Professional Development Mini-Grant : *American Astronomical Society* 2018
- Doherty Award for Excellence in Astronomy : *UW-Madison Department of Astronomy* 2017
- Iron Cross Society : *Recognizing significant leadership and service at UW-Madison* 2016
- Phi Beta Kappa : *Alpha Chapter of Wisconsin* 2016

## Talks, Workshops, & Community Service

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- AAS Site Visit Team 2019 - 2023  
*Selected Member : American Astronomical Society : Ithaca, NY*
- “Networking in Astronomy” 2019  
*Selected Talk : Astronomy11 : Toronto, Canada : [Link](#)*
- Know Your Power Special Session 2019  
*Workshop : Space Telescope Science Institute; 233<sup>rd</sup> AAS Meeting : Baltimore, MD; Seattle, WA*
- AstroSites: How to Build & Publish a Professional Website 2019  
*Selected Workshop & Published Webpage : 233<sup>rd</sup> AAS Meeting : Seattle, WA : [Link](#)*
- “How Astronomy’s Most Intriguing Discoveries Happen by Accident” 2019  
*Talk : Astronomy on Tap : Seattle, WA : [Link](#)*
- “A Dynamic Visualization Tool for the Analysis of SPIKE Scheduling Constraints” 2017  
*Talk : Space Telescope Science Institute Summer Symposium : Baltimore, MD : [Link](#) (55:15)*