Leah M. Fulmer

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Summary

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

Computational:
Python (advanced: Jupyter, pandas, matplotlib, numpy; intermediate: seaborn, scikit-learn, scipy, astropy); SQL, Tableau, Microsoft Suite, HTML, CSS, JavaScript, Lisp, IDL, LaTeX, Unix/Bash; software development; data collection, cleaning, joining; data analysis and visualization; statistical and machine learning techniques.

Communication:
GitHub (git), journal publication, public speaking, poster presentation, collaboration with users, networking; communication with diverse stakeholders, program management, 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

Codecademy January 2024 - June 2024
Certificate in Business Intelligence Data Analyst Career Path Madison, WI

University of Washington September 2018 - June 2021
Master of Science in Astronomy Seattle, WA

University of Wisconsin-Madison September 2013 - May 2017
Bachelor of Science in Astronomy-Physics & Spanish 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

BadgerBots Robotics Corporation May 2022 - December 2023
Community Engagement Program Manager, Assistant Educator 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 curriculum; served as Assistant Educator during all educational instances.

National Optical Astronomy Observatory, now NSF's NOIRLab October 2017 - July 2018
Data Reduction Specialist 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

University of Washington September 2018 - June 2021
NSF Graduate Research Fellow Seattle, WA
Advisors: Prof. Daniela Huppenkothen and Prof. Mario Juric

- Explored automatic classification of time series data using machine learning techniques; placed particular focus on anomaly detection to efficiently access valuable data products from among billions of observations.

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

[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

- 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

- AAS Site Visit Team 2019 - 2023
  Selected Member : American Astronomical Society : Ithaca, NY
- AstroSites: How to Build & Publish a Professional Website 2019
  Selected Workshop & Published Webpage : 233rd AAS Meeting : 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