Christine Mazzola Daher

Postdoctoral Fellow | **Center for Cosmology and AstroParticle Physics**

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The Ohio State University
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She/Her, US Citizen

Research focus: stellar multiplicity statistics and their correlations with stellar properties

Experience

CCAPP Postdoctoral Fellow — Fall 2022 – Present
CCAPP *and* Department of Astronomy · The Ohio State University · Columbus, OH

Education

Ph.D. Physics — Fall 2016 – Summer 2022
University of Pittsburgh · *Advisor:* Prof. Carles Badenes

M.S. Physics — Fall 2016 – Spring 2018
University of Pittsburgh · *Completed contemporaneously with Ph.D.*

B.S. Physics, Mathematics minor — Fall 2012 – Spring 2016
Mississippi State University · *Summa cum laude*

Mentoring and Supervision

Graduate Research	Co-supervised Victoria Bonidie and Travis Court *Stellar Multiplicity in Sag. dSph vs. the Milky Way (published 2022, ApJL, 933, L18)*	Spring 2021 – Summer 2022
Undergraduate Research	Co-supervised Jakob Bindas *The Closest Companions of APOGEE RC Stars*	Fall 2021 – Spring 2022
	Co-supervised Victoria Bonidie and Polina Petrov *Constraining UV Excess in APOGEE RV Variables*	Summer 2019
Mentoring	Dept. Physics & Astronomy TA/TF Mentor *Mentored 15-40 TAs/TFs per semester*	Fall 2020 – Summer 2021
	Dept. Physics & Astronomy Graduate Student Mentor *In 3 years, mentored 10 first-year graduate students*	Fall 2018 – Summer 2021

Honors and Awards

Fellowships	Peter F. M. Koehler Predoctoral Fellowship, U. Pittsburgh *Awarded for teaching excellence and exceptional research promise*	Fall 2019 / Summer 2020
	Predoctoral Summer Research Fellowship, U. Pittsburgh	Summer 2017
Scholarships	Crow Scholarship, Dept. Physics & Astronomy, Miss. State	Fall 2015 – Spring 2016
	Rundel Scholarship, Dept. Physics & Astronomy, Miss. State	Fall 2013 – Spring 2015
	Grillot Scholarship, Dept. Physics & Astronomy, Miss. State	Fall 2012 – Spring 2013
Honor Societies	Miss. State Society of Scholars	Spring 2016
	Miss. State Shackhouls Honors College	Fall 2012 – Spring 2016
Competitions	3 Minute Thesis Winner, Dept. Physics & Astronomy, U. Pittsburgh	2019 / 2020

Teaching

Instructional	Pitt AstroPGH Research Boot Camp Instructor *Two-part series on plotting with Matplotlib*	May 2020
	Carnegie Mellon U. "Astrosnacks" Student Seminar Title: *Python Plotting 101*	Sept. 2019
Graduate TA	PHYS 091: Conceptual Physics	Spring 2020
	ASTRON 088: Stonehenge to Hubble	Spring 2019
	ASTRON 089: Stars, Galaxies, and the Cosmos	Fall 2016 / Spring 2017 / Spring 2019
Lab Supervisor	ECE 4653/6653: Introduction to Power Electronics	Spring 2015 / Spring 2016

Conferences, Workshops, and Presentations

Invited Talks	Stellar Streams Group, U. Cambridge	Nov. 2021
	Astrolunch Seminar Series, U. Pittsburgh	Dec. 2020
Contributed Talks	SDSS 2021 Collaboration Meeting, Johns Hopkins U.	Aug. 2021
	SDSS 2020 Collaboration Meeting, New York, USA	June 2020
	U. Pittsburgh "Astrosnacks" Student Seminar	Feb. 2018 / Nov. 2018
Outreach	No-Jargon Talk Series, Women & Minorities in Physics at Pitt	July. 2021
Posters	SDSS 2019 Collaboration Meeting, Ensenada, Mexico	June 2019
Attended	APOGEE Stellar Companions Paper Sprint, Vanderbilt U.	March 2022
	Women in Medicine and Science Forum, U. Pittsburgh	Nov. 2019
	Negotiation & Management for Women in Sciences, U. Pittsburgh	Nov. 2019
	APOGEE Stellar Companions Paper Sprint, U. Virginia	Oct. 2019
	LSST Community Brokers Workshop, Seattle, Washington	June 2019

Professional Skills and Memberships

Computer Languages	Python, C, Fortran, R, LaTeX
Tools	git, Mathematica, Maple, MATLAB/Simulink, Microsoft Office
Techniques	Monte Carlo, autoencoders, soldering
Memberships	Sloan Digital Sky Survey IV: APOGEE-2 Survey Sloan Digital Sky Survey V: Milky Way Mapper

Publications

Note: My name changed due to marriage in late 2020. I was previously Christine N. Mazzola and now am Christine Mazzola Daher. Mazzola is my new middle name and may appear in full, as M., or not at all, depending on the service.

$\star$ – Major Contributing Author; *2 First Author, 5 N^{th} Author*

7. $\star$ Multiplicity Statistics of Stars in the Sagittarius Dwarf Spheroidal Galaxy: Comparison to the Milky Way
Bonidie, V., Court, T., **Daher, C. M.**, Fielder, C. E., Badenes, C., Newman, J., Moe, M., Kratter, K. M., Walker, M. G., Majewski, S. R., Hayes, C. R., Hasselquist, S., Stassun, K., Kounkel, M., Dixon, D., Stringfellow, G. S., Carlberg, J., Anguiano, B., De Lee, N., Troup, N. (2022) *ApJL, 933, L18*

6. Stellar Kinematics of Dwarf Galaxies from Multi-Epoch Spectroscopy: Application to Triangulum II
Buttry, R., Pace, A. B., Koposov, S. E., Walker, M. G., Caldwell, N., Kirby, E. N., Martin, N. F., Mateo, M., Olszewski, E. W., Starkenburg, E., Badenes, C., **Daher, C. M.**, *accepted by MNRAS (10.1093/mnras/stac1441)*

5. ⋆ Stellar Multiplicity and Stellar Rotation: Insights from APOGEE
   Daher, C. M., Badenes, C., Tayar, J., Pinsonneault, M., Koposov, S. E., Kratter, K., Moe, M., Anguiano, B., Godoy-Rivera, D., Majewski, S., Carlberg, J. K., Walker, M. G., Buttry, R., Dixon, D., Serna, J., Stassun, K. G., De Lee, N. M., Hernández, J., Nitschelm, C., Stringfellow, G. S., Troup, N. W. (2022) *MNRAS, 512, 2051*

4. Close Substellar-Mass Companions in Stellar Wide Binaries: Discovery and Characterization with APOGEE and Gaia DR2
   Lewis, H. M., Anguiano, B., Majewski, S., Nidever, D. L., Badenes, C., De Lee, N., Hasselquist, S., **Daher, C. M.**, Stassun, K. G., Bizyaev, D., Godoy-Rivera, D., Nitschelm, C., Oravetz, A., Pan, K., Roman-Lopes, A. (2021) *MNRAS, 509, 3355*

3. Analysis of Previously Classified White-Dwarf-Main-sequence Binaries Using Data from the APOGEE Survey
   Corcoran, K. A., Lewis, H. M., Anguiano, B., Majewski, S., Kounkel, M., McDonnal, D. J., Stassun, K. G., Cunha, K., Smith, V., Allende Prieto, C., Badenes, C., De Lee, N., **Mazzola, C. N.**, Longa-Peña, P., Roman-Lopes, A. (2021) *AJ, 161, 143*

2. ⋆ The Close Binary Fraction as a Function of Stellar Parameters in APOGEE: A Strong Anticorrelation with α Abundances
   Mazzola, C. N., Badenes, C., Moe, M., Koposov, S. E., Kounkel, M., Kratter, K., Covey, K., Walker, M. G., Thompson, T. A., Andrews, B., Freeman, P. E., Anguiano, B., Carlberg, J. K., De Lee, N. M., Frinchaboy, P. M., Lewis, H. M., Majewski, S., Nidever, D., Nitschelm, C., Price-Whelan, A. M., Roman-Lopes, A., Stassun, K. G., Troup, N. W. (2020) *MNRAS, 499, 1607*

1. ⋆ Stellar Multiplicity Meets Stellar Evolution and Metallicity: The APOGEE View
   Badenes, C., **Mazzola, C.**, Thompson, T. A., Covey, K., Freeman, P. E., Walker, M. G., Moe, M., Troup, N., Nidever, D., Allende Prieto, C., Andrews, B., Barbá, R. H., Beers, T. C., Bovy, J., Carlberg, J. K., De Lee, N., Johnson, J., Lewis, H., Majewski, S. R., Pinsonneault, M., Sobeck, J., Stassun, K. G., Stringfellow, G. S., Zasowski, G. (2018) *ApJ, 854, 147*