Margaret Lazzarini

California State University Los Angeles (Cal State LA)
Department of Physics & Astronomy
5151 State University Drive
Los Angeles, CA, 90032
(626) 808-3889 (c)
mlazz@calstatela.edu
Pronouns: she/her/hers

EMPLOYMENT

Assistant Professor, Physics & Astronomy, CSU Los Angeles | Aug. 2023—present
NSF Astronomy & Astrophysics Postdoctoral Fellow, Caltech | 2021—2023
Graduate Instructor, Teaching/Research Assistant, University of Washington | 2015-2021
NASA Graduate Student Intern, NASA Goddard Space Flight Center | Summer 2017, 2018
High School Teacher, Early College Academy for Leaders & Scholars (eCALS) | 2013-2015

EDUCATION

PhD in Astronomy, University of Washington, Seattle, WA | 2021
Advisor: Prof. Benjamin F. Williams
Thesis: "Accreting Compact Objects in Technicolor: Multiwavelength Characterization of High Mass X-ray Binaries in the Local Group"
MS in Astronomy, University of Washington, Seattle, WA | 2017
MA in Urban Education, Loyola Marymount University, Los Angeles, CA | 2015
Concentration in digital learning
Thesis: "Understanding Pathways to Career Success from Latinas in STEM Professions"
CA Single Subject Teaching Credential, Secondary Science (2014—2019)
BS in Astronomy & Physics, Yale University, New Haven, CT | 2013
Advisor: Prof. Meg Urry
Thesis: "Seeing Through the Clouds: Determining the Intrinsic Structure of AGN from the Swift BAT Sample"

RESEARCH INTERESTS

My primary research area is combining observations and theoretical simulations of high mass X-ray binaries to study the complex process of massive binary stellar evolution. I am also interested in resolved stellar populations observations, the connection between star formation and galaxy evolution, multi-messenger astronomy, and high energy astrophysics.

RESEARCH GRANTS & PROPOSALS

PI: Keck Observatory | 2023B
"Spectroscopic Constraints on Massive Binary Stellar Evolution in M33", 3 half nights
Co-I: NuSTAR Cycle 9 | 2023
"All the Luminous X-ray Binaries in M31: Hard X-ray Demographics and Binary Population Synthesis Applications"
PI: Keck Observatory | 2022B
"Spectroscopic Constraints on Massive Binary Stellar Evolution in M31 and M33", 4 half nights

Co-I: James Webb Space Telescope Cycle 1 Proposal | 2021
"The First Resolved View of Individual Star Formation Across a Spiral Arm"
Co-I: Hubble Space Telescope Cycle 29 Proposal | 2021
"The Panchromatic Hubble Andromeda Southern Treasury (PHAST)"
Co-I: Chandra Cycle 22 Proposal | 2020
"Monitoring the High Mass X-ray Binary Population of M33"
PI: Apache Point Observatory 3.5 m Telescope | 2017
"NuSTAR X-ray Sources in M31", Awarded 3 half nights

AWARDS & FELLOWSHIPS

NSF Astronomy & Astrophysics Postdoctoral Fellow, Caltech | 2021
Excellence in Teaching Award Finalist (campus-wide), University of Washington | 2020
John Mather Nobel Scholar, NASA Goddard Space Flight Center | 2018
UW Astronomy Graduate Teaching Award, University of Washington | 2018
Top Scholar Award, University of Washington Graduate School | 2015
Dean's Fellow in the Sciences, Yale University | 2011, 2012

TEACHING EXPERIENCE

Co-Advisor, MESA Program, Early College Academy for Leaders & Scholars | 2021-2022

- Co-advisor to high school Math Engineering Science Achievement (MESA) team as part of after school club
- Led students in computer programming, science, engineering challenges to compete in local and state-wide competitions

Instructor, Pre-Major in Astronomy Program (Pre-MAP) Seminar, UW | Fall 2018, 2019

- Lead instructor for quarter-long 5 credit seminar course for undergraduates from underrepresented groups in astronomy without prior research experience
- Taught programming (python), research and science literacy skills, and organized research mentor program
- Coordinated year-long program for students including STEM lab tours, end of year field trip, bi-quarterly social events

Instructor, UW Summer Outreach Programs | Summer 2016, 2018, 2019

- Taught "Protostars", two week course for ∼25 middle school girls
- Developed curriculum covering topics including solar system, exoplanets, stellar evolution
- Invited guest speakers from UW astronomy, mathematics departments
- Organized poster session where students presented projects at end of course

Teaching Assistant, University of Washington | 2015-2017

- TA for Astronomy 101 (Introductory Astronomy), 102 (Advanced Introductory Astronomy), 150 (The Planets)
- Taught twice-weekly section for ∼60 students per quarter, for six total quarters
- Student feedback consistently rated TA effectiveness $\geq$4.6/5.0
- Developed teaching materials and instructional tools still used by TAs and instructors in Astronomy 150

High School Teacher, Early College Academy for Leaders & Scholars (eCALS) | 2013-2015

- Taught physics and astronomy at Early College Academy for Leaders & Scholars, small charter school in Northeast Los Angeles where >75% of students receive free/reduced lunch (metric for student poverty) and 92% of students identify as Hispanic or Latino

- Designed and implemented rigorous, college-preparatory, inquiry-based curriculum in physics and astronomy
- Taught >100 students per year as only physics and astronomy teacher at the school
- Proposed and created year-long astronomy course that >100 students elected to take in inaugural year
- Organized field trip to NASA Jet Propulsion Laboratory, invited guest speakers from Latinas in STEM and Caltech

MENTORING

Cheyanne Shariat, undergraduate (UCLA), Caltech SURF Program | Summer 2022
Kyros Hinton, undergraduate/post-baccalaureate (UW) | Spring 2022—present
● Presenting poster at American Astronomical Society January 2023 meeting
Aria Gasca, high school student (eCALS) | Summer 2022
Quetzalcoatl Kuauhtzin, high school student (eCALS) | Summer 2022
Ani Mazmanian, high school science teacher (eCALS) | Summer 2022
● Aria Gasca, Ani Mazmanian, Quetzalcoatl Kuauhtzin all mentored through Hybrid Summer Research Connections at Caltech

PROFESSIONAL SERVICE & OUTREACH

High-Energy X-ray Probe (HEX-P) Resolved Populations/Supernova Remnants Science Team Member | 2022—present
UltraViolet EXplorer (UVEX) Science Team Member | 2022—present
NASA Bridge Program Early Career Working Group Member | 2022—present
Planetarium Coordinator, University of Washington | 2017—2018
EquiTea Seminar Series Co-Organizer, University of Washington | 2016-2019

SELECTED TALKS & PRESENTATIONS

AAS Winter Meeting, Contributed Talk | Seattle, WA, January 2023
NSF Astronomy & Astrophysics Postdoctoral Fellows Symposium, Contributed Talk | January 2023
Carnegie Observatories Lunch Seminar, Invited Talk | Pasadena, CA, October 2022
Cal Poly Pomona Physics & Astronomy Seminar, Invited Talk | Pomona, CA, October 2022
OzGrav Seminar, Invited Talk | virtual, August 2022
Monash University Astro Seminar, Invited Talk | Melbourne, Australia, August 2022
AAS Summer Meeting, Contributed Talk | Pasadena, CA, June 2022
IAU Symposium 361: Massive Stars Near and Far, Poster | Ballyconnell, Ireland, May 2022
Caltech Stargazing Lecture, Invited Talk | Virtual (YouTube), March 2022
NSF Astronomy & Astrophysics Postdoctoral Fellows Symposium, Contributed Talk | January 2022
Tea Talk Seminar, Invited Talk | Stanford KIPAC, October 2020
Tea Talk Seminar, Invited Talk | Caltech, September 2020
High Energy Division Seminar, Invited Talk | University of Geneva, June 2019
20 Years of Chandra Symposium, Contributed Talk | Boston, MA, December 2019
STScI Symposium – The Deaths and Afterlives of Stars, Poster | Baltimore, MD, April 2019
AAS Winter Meeting, Contributed Talk | Seattle, WA, January 2019

PUBLICATIONS

(publications are linked)
First or Second Author:
● Lazzarini, M., Hinton, K., Shariat, C., et al., 2023, ApJ, 952, 114: "Multiwavelength Characterization

of the High Mass X-ray Binary Population of M33"
• Lazzarini, M., Williams, B.F., Durbin, M.J., et al., 2022, ApJ, 934, 76: "The Panchromatic Hubble Andromeda Treasury: Triangulum Extended Region (PHATTER) II. The Spatially Resolved Recent Star Formation History of M33"
• Lazzarini, M., Williams, B.F., Durbin, M.J., et al., 2021, ApJ, 906, 2: "Multiwavelength Characterization of the High Mass X-ray Binary Population of M31"
• Lazzarini, M., Williams, B.F., Hornschemeier, A.E., et al., 2019, ApJ, 884, 2: "Neutron Stars and Black Holes in the Small Magellanic Cloud: The SMC NuSTAR Legacy Project"
• Williams, B.F., Lazzarini, M., et al., 2018, ApJ, 239, 13W: "Comparing Chandra and Hubble in the Northern Disk of M31"
• Lazzarini, M., Hornschemeier, A.E., Williams, B.F., et al., 2018, ApJ, 862, 28: "Young Accreting Compact Objects in M31: The Combined Power of NuSTAR, Chandra, and Hubble"

Nth Author:

• Tran, D., et al., incl. Lazzarini, M., 2023, arXiv:2307.04853, "Spatially-Resolved Recent Star Formation History in NGC 6946"
• Peltonen, J., et al., incl. Lazzarini, M., 2023, arXiv:2305.03618, "Clusters, Clouds, and Correlations: Relating Young Clusters to Giant Molecular Clouds in M33 and M31"
• Brightman, M., et al., incl. Lazzarini M., 2023, arXiv:2305.01693, "A new sample of transient ultraluminous X-ray sources serendipitously discovered by Swift/XRT"
• Binder, B. A., et al., incl. Lazzarini M., 2023, arXiv:2305.01802, "The Spatial C orrelation of High Mass X-ray Binaries and Young Star Clusters in Nearby Star-Forming Galaxies"
• Koplitz, B., et al., incl. Lazzarini M., 2023, arXiv:2303.07318, "The Masses of Supernova Remnant Progenitors in M33"
• Kulkarni, S. R., et al., incl. Lazzarini M., 2022, arXiv:2111.15608, "Science with the Ultraviolet Explorer"
• Misra, D., Kovlakas, K., Fragos, T., Zapartas, E., Lazzarini M., et al., 2022, arXiv:2209.05505, "Studying the HMXB X-ray Luminosity function under different physical assumptions"

Last updated on 28th September 2023