

Alex M. Garcia

Contacts

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-Honors and Awards-

- ◇ Graduate Student Teaching Award (UF)
Spring 2023
- ◇ Outstanding Master's Thesis (UF)
Fall 2022
- ◇ Outstanding Research Presentation (UF)
Fall 2022
- ◇ Distinguished Contributions by a Graduate Student (UF)
Fall 2022
- ◇ Distinguished Service and Citizenship (UF)
Fall 2022
- ◇ Tutor of the Year Finalist; Honorable Mention (UIUC)
Spring 2021
- ◇ Eagle Scout, Boy Scouts of America
April 2015

-Student Mentoring-

- ◇ Zach Stevens (UVA Undergrad)
2023-24
- ◇ Caitlin O'Brien (UF REU Student)
2022-23

Service

Co-Host
Journal Club (UVA Astro)
2024-Present

Education

University of Virginia
2023 – Present

Doctorate of Philosophy in Astronomy
Master's of Science in Astronomy

University of Florida
2021 – 2023

Master's of Science in Astronomy

University of Illinois
2017 – 2021

Bachelor's of Science in Engineering Physics (*Honors*)
Bachelor's of Science in Astronomy (*Distinction*)

Research Experience

Graduate Researcher
2021 – Present

University of Virginia
University of Florida
Paul Torrey

Undergraduate Researcher
2020 – 2021

University of Illinois
Bryan Dunne & Yue Shen

Publications

First Author

5. *Deconstructing the Fundamental Metallicity Relation*
Garcia, et al., In Prep.
4. *Metallicity Gradients in Cosmological Simulations Depend Strongly on Feedback Model: Forecasts for High-redshift JWST Observations*
Garcia, et al., In Prep.
3. *Does the FMR evolve with redshift? A perspective from cosmological simulations*
Garcia, et al., Submitted Jan 2024 [[Preprint](#)]
2. *Interplay of Stellar and Gas-Phase Metallicities: Unveiling Insights for Stellar Feedback Modeling with Illustris, IllustrisTNG, and EAGLE*
Garcia, et al., Submitted Aug 2023 [[arXiv](#)]
1. *Gas-phase metallicity break radii of star-forming galaxies in IllustrisTNG*
Garcia, et al., Accepted Dec 2022. [[arXiv](#)] [[MNRAS](#)]

Co-Author

4. *Resolving scaling relations in IllustrisTNG at $z = 0$*
Qi, Torrey, Moreno, Hemler, Hernquist, **Garcia**. MNRAS. In Prep
3. *Extragalactic Archaeology: the chemical and accretion history of NGC 1365*
Kewley, Grasha, Hemler, **Garcia**, et al., Nature Astronomy. In Prep
2. *Can we constrain warm dark matter masses with individual galaxies?*
Lin ... **Garcia**, et al., ApJ. In Prep
1. *The First Quiescent Galaxies in TNG300*
Hartley, Nelson, Suess, **Garcia**, et al., MNRAS. Accepted. [[arXiv](#)] [[MNRAS](#)]

Member

Dark Skies, Bright Kids Outreach
Group (UVA Astro)
2023-Present

Referee

Monthly Notices of the Royal As-
tronomical Society (MNRAS)
2023-Present

Graduate Student Rep.

Committee for Diversity, Equity and
Inclusion (UF Astronomy)
2021 - 2023

Technical Skills

●●● = Fluent
●●● = Proficient
●●● = Familiar

●●● Python
●●● L^AT_EX ●●● Tikz
●●● Microsoft Office
●●● Google Workspace
●●● C/C++
●●● MPI
●●● JavaScript
●●● HTML
●●● CSS
●●● Bash
●●● SLURM
●●● Git/Github
●●● R

Clubs/Hobbies

Alachua (FL) Astronomy Club
2021-2023

Bluecoats Drum and Bugle Corps
Summer 2019, 2020, 2021

Madison Scouts Drum Corps
Summer 2017, 2018

Non-research

2. *Hands-on Astronomy – Tenth Edition*
UF Astronomy 1022L Lab manual [[Summary](#)]
1. *Astronomy Laboratory Exercises and eXperiments (ALEX)*
UF Astronomy 1022L Lab software [[Github](#)] [[View](#)]

Contributed Talks & Presentations

11. Conference on Building Galaxies from Scratch (Poster) – Vienna *February 2024*
10. Sara Ellison Group Meeting – U.Victoria (*virtual*) *February 2024*
9. Guest Lecture – U.Virginia ASTR 3830 *January 2024*
8. Conference on Resolving Galaxy Ecosystems – Hong Kong *December 2023*
7. Master’s Defense – U.Virginia *November 2023*
6. Mark Vogelsberger Group Meeting – MIT *November 2023*
5. Lisa Kewley Group Meeting – CfA Harvard-Smithsonian *November 2023*
4. Guest Lecture – U.Virginia ASTR 5110 *September 2023*
3. Sara Ellison Group Meeting – U.Victoria (*virtual*) *May 2023*
2. Graduate Research Symposium – U.Florida *October 2022*
1. Master’s Defense – U.Florida [[Video](#)] *September 2022*

Professional Experience**Teaching Assistant/Grader**

Institution	Course			Semester
<i>Virginia</i>	ASTR 3830	-	Planetary Astronomy (+lab)	<i>SP 24</i>
	ASTR 1220	-	Intro to Stars, Galaxies, and the Universe	<i>SP 24</i>
	ASTR 5110	-	Astronomical Techniques	<i>FA 23</i>
<i>Florida</i>	AST 1022 [†]	-	Astronomy Laboratory	<i>SP 23</i>
	AST 1022 [†]	-	Astronomy Laboratory	<i>SP 22</i>
	AST 1002	-	Discovering the Universe	<i>FA 21</i>
<i>Illinois</i>	ASTR 330	-	Extraterrestrial Life	<i>SP 21</i>
	ASTR 330	-	Extraterrestrial Life	<i>W 21</i>
	ASTR 100	-	Introduction to Astronomy	<i>FA 20</i>
	ASTR 150	-	Killer Skies: Astro-Disasters	<i>FA 20</i>

- Head TA for Telescope Observing (UVA; Spring 2024)
- [†] Primary instructor (UF; Spring 2022, 2023)

Planetarium Assistant

2021 – 2023

Gainesville, FL
Kika Silva Pla Planetarium

Tutor

2018 – 2021

Urbana, IL
Grainger College of Engineering