

# 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)  
*2022-24*

## Service

**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

[NASA/ADS Library]

### First Author

3. *Does the Fundamental Metallicity Relation Evolve with Redshift? I: The Correlation Between Offsets from the Mass-Metallicity Relation and Star Formation Rate* [arXiv]
2. *Interplay of Stellar and Gas-Phase Metallicities: Unveiling Insights for Stellar Feedback Modeling with Illustris, IllustrisTNG, and EAGLE* [arXiv] [MNRAS]
1. *Gas-phase metallicity break radii of star-forming galaxies in IllustrisTNG* [arXiv] [MNRAS]

### Co-Author

2. Lin, Villaescusa-Navarro, Rose, Torrey, Farahi, Kollman, **Garcia**, Roy, Kallivayalil, Vogelsberger, Cai, Luo. *Can we constrain warm dark matter masses with individual galaxies?* [arXiv]
1. Hartley, Nelson, Suess, **Garcia**, Park, Hernquist, Bezanson, Nevin, Pillepich, Schechter, Terrazas, Torrey, Wellons, Whitaker, & Williams. MNRAS, Volume 522, Issue 2, pp.3138-3144, *The First Quiescent Galaxies in TNG300* [arXiv] [MNRAS]

### 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

### Conference Contributions:

4. Connecting Simulations and Observations – Barossa, Australia  
*June 2024*
3. Regulating Star Formation Across Time – STScI, USA  
*April 2024*
2. Building Galaxies from Scratch – Vienna, Austria [Poster]  
*February 2024*
1. Resolving Galaxy Ecosystems – Hong Kong, China  
*December 2023*

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

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

**Gradaute Student Rep.**  
Committee for Diversity, Equity and  
Inclusion (UF Astronomy)  
*2021 - 2023*

—Technical Skills—

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

●●● Python

●●● LaTeX    ●●● 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*

- Presentations:**
7. Graduate Research Symposium – U. Virginia

April 2024
6. Sara Ellison Group Meeting – U. Victoria (*virtual*)

February 2024
5. Master’s Defense – U. Virginia

November 2023
4. Mark Vogelsberger Group Meeting – MIT

November 2023
3. Lisa Kewley Group Meeting – CfA Harvard-Smithsonian

November 2023
2. Sara Ellison Group Meeting – U. Victoria (*virtual*)

May 2023
1. Master’s Defense – U. Florida [\[Video\]](#)

September 2022

- Guest Lectures:**
2. ASTR 3830 (×3) – U. Virginia

Spring 2024
1. ASTR 5110 – U. Virginia

September 2023

—Professional Experience—

Teaching Assistant/Grader

Institution	Course	Semester
Virginia	ASTR 1250† - Alien Worlds	SU 24
	ASTR 4470 - Computational Astrophysics	SP 24
	ASTR 3830 - Planetary Astronomy (+Lab)	SP 24
	ASTR 1220 - Stars, Galaxies, and Universe	SP 24
	ASTR 5110 - Astronomical Techniques	FA 23
Florida	AST 1022† - Astronomy Laboratory	SP 23
	AST 1022† - Astronomy Laboratory	SP 22
	AST 1002 - Discovering the Universe	FA 21
Illinois	ASTR 330 - Extraterrestrial Life	SP 21
	ASTR 330 - Extraterrestrial Life	W 21
	ASTR 100 - Introduction to Astronomy	FA 20
	ASTR 150 - Killer Skies: Astro-Disasters	FA 20

† Primary instructor (UVA; Summer 2024 – UF; Spring 2023, 2022)  
– Head TA for Telescope Observing (UVA; Spring 2024)

**Planetarium Assistant**  
*2021 – 2023*  
Gainesville, FL  
Kika Silva Pla Planetarium

**Tutor**  
*2018 – 2021*  
Urbana, IL  
Grainger College of Engineering