

Alex M. Garcia

—Contacts—

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—Honors and Awards—

- ◇ Virginia Space Grant Consortium Research Fellow (UVA)
2024-2025
- ◇ 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

—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

4. Rose, Torrey, Villaescusa-Navarro, Lisanti, Caputo, Medvedev, Vogelsberger, Farahi, Roy, Kollman, **Garcia**, Karmakar, Cyr-Racine, Roche, O'Neil, Wang, Nguyen, Costanza, Genel, Cruz, Necib, Anglés-Alcázar, Muñoz, Teyssier, Spergel, Dalcanton, Kallivayalil. *The DREAMS project: DaRK mattEr and Astrophysics with Machine learning and Simulations*
3. Chen, Grasha, Battisti, Wisnioski, Li, Park, Groves, Torrey, Mendel, Madore, Seibert, Sxtl, **Garcia**, Rich, Beaton, Kewley. *Quantifying azimuthal variations within the interstellar medium of spiral galaxies with the TYPHOON survey* [Submitted]
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]

Service

Host

Journal Club (UVA Astro)
2024-Present

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

●●● L^AT_EX

●●● Tikz

●●● Microsoft Office

●●● Google Workspace

●●● C/C++

●●● MPI

●●● JavaScript

●●● HTML

●●● CSS

●●● Bash

●●● SLURM

●●● Git/Github

●●● R

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*

Presentations:

7. Colloquium – Australian National University *June 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*

Teaching

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