

Alex Michael Garcia

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Education

University of Florida

Master's of Science in Astronomy

Aug 2021 – May 2023

University of Illinois at Urbana-Champaign

Bachelor's of Science in Engineering Physics - *Honors*

Bachelor's of Science in Astronomy - *Distinction*

Aug 2017 – May 2021

Research Experience

Areas of interest: Galaxy Formation and Evolution & Cosmological Simulations of the Universe

Graduate Researcher

University of Florida - Advisor: Paul Torrey

May 2021 – Present

Gainesville, FL

REU Students Mentored

◇ Caitlin O'Brien: Measuring Splashback Radii in galaxy clusters using IllustrisTNG

Undergraduate Research Assistant

University of Illinois - Advisor: Yue Shen

Jan 2021 – May 2021

Urbana, IL

Undergraduate Research Assistant

University of Illinois - Advisor: Bryan Dunne

Aug 2020 – May 2021

Urbana, IL

Publications

First Author Publications:

1. *Gas-phase Metallicity break radii in Illustris and IllustrisTNG*

Garcia, Torrey, Hemler, Hernquist, Kewley, Grasha, Nelson, Zovaro, Chen. MNRAS. September 2022. [\[Preprint\]](#) [\[Oral Defense\]](#)

Non-research:

2. *Hands-on Astronomy – Tenth Edition*: UF Astronomy 1022L Lab manual

1. *Astronomy Laboratory Exercises and eXperiments (ALEX)*: UF Astronomy 1022L Lab software [\[Github\]](#) [\[View\]](#)

Professional Experience

Teaching Assistant/Course Assistant

University of Florida

University of Illinois

Aug 2020 – May 2022

Gainesville, FL

Urbana, IL

	Course	Semester
University of Florida	AST 1022L - <i>Astronomy Laboratory*</i>	Spring 2022
	AST 1002 - <i>Discovering the Universe</i>	Fall 2021
University of Illinois	ASTR 330 - <i>Extraterrestrial Life</i>	Spring 2021
	ASTR 330 - <i>Extraterrestrial Life</i>	Winter 2021
	ASTR 100 - <i>Introduction to Astronomy</i>	Fall 2020
	ASTR 150 - <i>Killer Skies: Astro-Disasters</i>	Fall 2020

* Served as primary instructor for the course

- During the Spring 2022 semester, I reformatted the entire AST 1022L lab manual into LaTeX (including most of the figures in Tikz) for ease of editing and uniformity throughout the entire 160+ page manual.
- Created lab software in HTML/JS to replace outdated software for three labs (AST 1022L).
- Host observatory sessions at the campus observatory for students in the course to attend. Includes setting up an array of telescopes and fielding student questions on their assignments.

Part-Time Specialist

Santa Fe College – Kika Silva Pla Planetarium

Aug 2021 – Present
Gainesville, FL

- Design, develop, and present planetarium shows for K-12 classes, collegiate-level curriculum, as well as the general public.
- Host several shows, including *Florida Skies*: an hour long tour of the Gainesville night sky using a CHRONOS Optical-Mechanical Projector.

Tutor

Center for Academic Resources in Engineering (CARE) – UIUC

Aug 2018 – May 2021
Urbana, IL

- Guided undergraduate students towards success in various homework assignments in a number of different disciplines.
- Planned and led small group exam review sessions, including the creation of worksheets, for specific courses and presented to students in order to help them review for exams.
- Analyzed the data on traffic of incoming students and created monthly reports of attendance, tracking several different variables.

Visual Instructor

Lincoln-Way Marching Band

Aug 2018 – Aug 2021
New Lenox, IL

- Assisted on the field teaching students how to perfect and perform an eight-minute field show. Included teaching management of simultaneous demand and awareness.
- Worked within a group of staff members on lesson plans and communicated on how to most effectively budget and allocate time to improving the overall product.

Committees

Committee for Diversity, Equity and Inclusion

University of Florida Department of Astronomy

Fall 2021 - Present
Gainesville, FL

Technical Skills

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

●●● Python ●●● LaTeX (●●● Tikz) ●●● Microsoft Office ●●● Google Workspace ●● Bash ●● SLURM
●● HTML ●● JavaScript ●● CSS ●● Git/Github ●● R

Honors and Awards

University of Illinois Tutor of the Year Honorable Mention
University of Illinois Tutor of the Year Finalist
Dean's List, College of Liberal Arts and Sciences – UIUC
Dean's List, Grainger College of Engineering – UIUC
Access and Achievement Scholar – UIUC
Eagle Scout, Boy Scouts of America

Spring 2021
Spring 2021
Fall 2020
Spring 2018, 2019
Fall 2017 – Spring 2021
April 2015

Activities

Bluecoats Drum and Bugle Corps
Madison Scouts Drum and Bugle Corps

Summer 2019, 2020, 2021
Summer 2017, 2018