

# 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

Feb 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, August 2022

### Textbooks:

1. *Hands-on Astronomy – Tenth Edition*: for UF Astronomy 1022 Lab manual

## Professional Experience

### Teaching Assistant/Course Assistant

University of Florida

University of Illinois

Aug 2020 – Present

Gainesville, FL

Urbana, IL

	Course	Semester
University of Florida	AST 1022 - <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 100+ page manual.
- Created lab software in HTML/JS to replace outdated software for one lab (AST 1022).
- 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

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### Committee for Diversity, Equity and Inclusion

*University of Florida Department of Astronomy*

Fall 2021, Spring 2022

Gainesville, FL

## Technical Skills

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

●●● Python    ●●● L<sup>A</sup>T<sub>E</sub>X (●●● Tikz)    ●●● Microsoft Office    ●●● Google Workspace    ●●● Bash    ●●● SLURM  
 ●●● HTML    ●●● JavaScript    ●●● CSS    ●●● R

## Honors and Awards

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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

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Bluecoats Drum and Bugle Corps  
 Madison Scouts Drum and Bugle Corps

Summer 2019, 2020, 2021  
 Summer 2017, 2018