

# GABRIELA TORRINI

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## EDUCATION

**University of Illinois Urbana-Champaign**

*M.S. in Astronomy*

**Aug. 2020 – Aug. 2022**

*Urbana, IL*

**The Ohio State University**

*B.S. in Astronomy & Astrophysics, Minor in Spanish*

**Aug. 2016 – May 2020**

*Columbus, OH*

## RESEARCH

**Graduate Fellow**

*Department of Astronomy, University of Illinois*

**Jan. 2021 – Aug. 2022**

*Urbana, IL*

Advisor: Dr. Xin Liu

- Performed optical variability selection to hunt for dwarf AGNs in the COSMOS field
  - Analyzed 31,000 sources in DES deep field data using astroPy, pandas, sciPy, & numpy
  - Identified 51 dwarf AGN candidates
- Measured the offset distribution of dwarf AGN candidates in the DES wide field
  - Analyzed 6 seasons of DECam difference/template images using astroPy, numPy, & pandas
  - Found no statistically significant offset fraction

**Research Assistant**

*Department of Astronomy, The Ohio State University*

**Sep. 2019 – May 2020**

*Columbus, OH*

Advisors: Dr. Laura Lopez & Dr. Udara Abeysekara

- Completed a senior thesis

**Research Assistant**

*Department of Astronomy, The University of Utah*

**May 2019 – Aug. 2019**

*Salt Lake City, UT*

Advisors: Dr. Udara Abeysekara & Dr. David Kieda

- Optimized cosmic-ray background subtraction algorithm
- Processed 97 hours of V6-epoch VERITAS data
- Analyzed optimization factors such as gamma-ray shower shape, elevation, azimuth, & season; determined observing season to be the most critical factor

## WORK EXPERIENCE

**Software Development Intern**

*Turnell Corp*

**Dec. 2022 – July 2023**

*St. Charles, MO*

Supervisor: Victor Turnell

- Developed a full-stack, web-based pilot application to simulate & optimize cement production processes
- Created web forms for equipment flowsheets & optimization problems
- Built an API to process requests, perform mass-energy balance calculations, & manage database interactions

**Graduate Student Developer**

*National Center for Supercomputing Applications*

**Jan. 2022 – May 2022**

*Urbana, IL*

Supervisor: Dr. T. Andrew Manning

- Helped develop cutout request form to access SPT-3G microwave maps using React.js & MUI
- Implemented a monitor via Uptime Kuma to maintain access to data services

## TECHNICAL SKILLS

**Operating Systems:** Windows, Linux

**Programming Languages:** Python, JavaScript, HTML, CSS, C++

**Software Systems:** Git, Mathematica, LaTeX

**Frameworks & Libraries:** pandas, numPy, astroPy, sciPy, matplotlib, seaborn, Flask, React.js, MUI

## POSTER PRESENTATIONS

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<b>Astrofest</b> <i>Department of Astronomy, University of Illinois Urbana-Champaign</i>	<b>April 2022</b> <i>Urbana, IL</i>
<b>Sloan Conference</b> <i>University Center of Exemplary Mentoring, University of Illinois Urbana-Champaign</i>	<b>April 2022</b> <i>Urbana, IL</i>
<b>Planetary Nebulae &amp; Supernova Remnants Session, 235th AAS Meeting</b> <i>American Astronomical Society</i>	<b>Jan. 2020</b> <i>Honolulu, HI</i>
<b>Research Experience for Undergraduates (REU) Symposium</b> <i>Council on Undergraduate Research</i>	<b>Oct. 2019</b> <i>Alexandria, VA</i>
<b>Office of Undergraduate Research Summer Symposium</b> <i>The University of Utah</i>	<b>Aug. 2019</b> <i>Salt Lake City, UT</i>

## RELEVANT COURSEWORK

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**Astronomy:** Galaxies, Cosmology, Stellar Evolution, Radiative Processes, Dynamics, AI & Big Data in Astro

**Physics:** Statistical Mechanics, Quantum Mechanics, Electricity & Magnetism

**Mathematics:** Multivariable Calculus, Differential Equations, Linear Algebra

## LEADERSHIP & OUTREACH

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<b>Treasurer, SACNAS Chapter</b> <i>The Ohio State University</i> <ul style="list-style-type: none"><li>Secured \$1100 in funding for a keynote &amp; documentary screening with Catalina Martinez, Regional Program Manager at the National Oceanic and Atmospheric Administration (NOAA)</li></ul>	<b>Aug. 2019 – May 2020</b> <i>Columbus, OH</i>
<b>Mentor, Latinx Early Arrival Program</b> <i>Office of Diversity &amp; Inclusion, The Ohio State University</i> <ul style="list-style-type: none"><li>Mentored 3 Latina undergraduates during their academic &amp; social transition to college</li></ul>	<b>Aug. 2019 – May 2020</b> <i>Columbus, OH</i>
<b>President, The Astronomical Society</b> <i>The Ohio State University</i> <ul style="list-style-type: none"><li>Equipped 1,500 Central Ohioans with glasses &amp; safety instructions to view the August 2017 solar eclipse</li><li>Planned an annual educational trip to the Green Bank Observatory for 35 undergraduates in February 2018/2019</li><li>Hosted 8 seasonal star parties for up to 100 members of the general public; operated 12-inch Meade telescope and dome, provided free educational content, &amp; led guided night sky tours</li><li>Wrote a transition manual for future executive boards</li></ul>	<b>Aug. 2017 – May 2019</b> <i>Columbus, OH</i>
<b>Social Media Coordinator, SACNAS Chapter</b> <i>The Ohio State University</i> <ul style="list-style-type: none"><li>Curated chapter profiles on 3 platforms: Twitter, Instagram, Facebook</li><li>Promoted opportunities for scholarships, internships, research positions, &amp; jobs</li><li>Collaborated with chapter members to share stories about their research, work-life balance, &amp; the lived experience of underrepresented minorities in STEM</li></ul>	<b>Aug. 2017 – May 2019</b> <i>Columbus, OH</i>
<b>Volunteer, Physical Sciences Gallery</b> <i>St. Louis Science Center</i> <ul style="list-style-type: none"><li>Trained for over 195 hours to operate plasma globes, Van de Graaff generators, Tesla coils, &amp; liquid nitrogen</li><li>Performed Amazing Science Demonstrations for up to 100 visitors at a time</li></ul>	<b>May 2017 – May 2019</b> <i>St. Louis, MO</i>

## AWARDS, FELLOWSHIPS, & SCHOLARSHIPS

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<b>Sloan Scholar</b> <i>University Center of Exemplary Mentoring, University of Illinois</i> <ul style="list-style-type: none"><li>To broaden participation in advanced engineering, physical and mathematical science careers</li></ul>	<b>Aug. 2020 – Aug. 2022</b> <i>Urbana, IL</i>
<b>Graduate College Fellow</b> <i>University of Illinois</i> <ul style="list-style-type: none"><li>To increase the enrollment of outstanding students from populations that have been historically underrepresented in graduate study</li></ul>	<b>Aug. 2020 – Aug. 2022</b> <i>Urbana, IL</i>

### **Morrill Distinction Scholarship**

*Office of Diversity & Inclusion, The Ohio State University*

- For actively engaging in diversity-based leadership, social justice and service

**Aug. 2016 – May 2020**

*Columbus, OH*

### **REU NSF Grant Award**

*Department of Physics & Astronomy, The University of Utah*

- To represent the REU site in the Physics Division at the NSF's Council on Undergraduate Research

**Aug. 2019**

*Salt Lake City, UT*

### **Tuttle Scholarship in Astronomy**

*Department of Astronomy, The Ohio State University*

- For demonstrating strong academic performance in astronomy & astrophysics

**Jan. 2019**

*Columbus, OH*

### **SACNAS Bound Buckeye Travel Grant**

*College of Arts & Sciences, The Ohio State University*

- To support attendance at the 45th National Diversity in STEM Conference

**Oct. 2018**

*Columbus, OH*

## **TEACHING**

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### **Teaching Assistant, 1102: From Planets to the Cosmos**

*Department of Astronomy, The Ohio State University*

Instructor: Rachel Patton

- Tutored students during weekly virtual office hours
- Graded homework, quizzes, & exams for 79 students

**May 2020 – Aug. 2020**

*Columbus, OH*

### **Teaching Assistant, 1141: Life in the Universe**

*Department of Astronomy, The Ohio State University*

Instructor: Dr. Stephan Frank

- Facilitated breakout room activities during live online course lectures
- Tutored students during weekly virtual office hours
- Graded homework, labs, & exams for 55 students

**May 2020 – July 2020**

*Columbus, OH*

### **Instructional Aide, 1101: From Planets to the Cosmos**

*Department of Astronomy, The Ohio State University*

Instructors: Dr. Todd Thompson & Dr. Wayne Schlingman

- Taught material during laboratory section
- Graded labs for 20 students
- Collaborated with instructors to modify content for online learning

**Jan. 2020 – Apr. 2020**

*Columbus, OH*

## **OTHER COMMUNITY INVOLVEMENT**

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### **Speaker, "Sick Burn: The Story Behind Your Sizzling Summer Nightmare"**

*Astronomy on Tap Champaign-Urbana*

**July 21, 2022**

*Urbana, IL*

### **Co-chair, Journal Club Committee**

*Department of Astronomy, University of Illinois*

**Aug. 2020 – July 2021**

*Urbana, IL*

### **Panelist, Undergraduate Research & Graduate School Applications**

*Society for Equity in Astronomy, University of Illinois*

**Oct. 19, 2020**

*Urbana, IL*