

# Lizette Gonzalez Rodriguez

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## EDUCATION

**University of Texas at San Antonio – B.S. in Physics, Minor in Astronomy/Astrophysics** **Aug 2022 - Present**  
• BOLD Scholars Program Scholar | GSMI Scholar 2025 | SAEP Scholar | FUTURE of Physics Participant, 2025

## RESEARCH AND TECHNICAL PROJECTS

**Applying Clustering Algorithms to X-ray Emission from Planetary Nebulae** **Jun 2024 - May 2025**  
*Harvard and Smithsonian Center for Astrophysics (CfA)*  
• Applied DBSCAN to classify planetary nebulae. **CREATE Intern**

**Microwave and Millimeter-Wave Systems: Propagation Studies at 5G Wireless Bands** **Summer 2023**  
*University of Puerto Rico at Mayagüez*  
• Co-led NASA proposal on methane emissions. **RADIAL Intern**

**Open Cluster Project** **Jun 2025 - Present**  
*University Of Texas at San Antonio*  
• Used HDBSCAN to identify stellar members in 25 open clusters using Gaia mission data. **Lab Assistant**

**MEEPsat (Methane Emissions from Permafrost Satellite Tracker)** **Sept 2024 - Present**  
*University Of Texas at San Antonio*  
• Analyzed wireless signals under environmental variation. **Communications Project Lead**

## PRESENTATIONS AND PUBLIC ENGAGEMENT

- [1] Rodriguez, L.G. "Showcasing Inspirational Student Work Amplified by Generative AI". Adobe Digital Literacy Café Webinar Series. Oral presentation delivered via Zoom, San Antonio, TX, April 2025.
- [2] Rodriguez, L.G. "Applying Clustering Algorithms to X-ray Emission from Planetary Nebulae". American Astronomical Society Meeting Abstracts, 245. Poster presented at the AAS Winter Meeting, Washington, D.C., January 2025.
- [3] Rodriguez, L.G. "Microwave and Millimeter-Wave Systems: Propagation Studies at 5G Wireless Bands". American Astronomical Society Meeting Abstracts, 243. Poster presented at the AAS Winter Meeting, New Orleans, LA, January 2024.

## SKILLS TOOLS

- **Programming:** Python (Astropy, Matplotlib, Scikit-learn), C++
- **Scientific Software:** CIAO, Sherpa, Jupyter
- **Data Analysis:** Machine learning (DBSCAN, HDBSCAN), Signal Processing, Principal Component Analysis (PCA)
- **Instrumentation:** Spectrum Analyzers, Horn Antennas, HyperLog® Antennas
- **Tools:** GitHub, Overleaf
- **Languages:** English (Business Professional), Spanish (Conversational)

## AWARDS, HONORS, AND OUTREACH

- Chambliss Finalist, American Astronomical Society (2024 - 2025)
- President's List, UTSA (2024)
- Certification: Responsible Conduct of Research for Engineers (CITI Program)
- Science Outreach: Haunted Observatory, Science Semana, UTSA Day, Dia en La Sombrilla, Bestfest, UTSA Solar Eclipse, Girl Scouts of Southwest Texas
- Workshops: Chandra X-ray Data Analysis Workshop
- Leadership: Involvement Fair (SPS), Girl Scouts Adventure Day, Public tabling and events

## EXTRA-CURRICULAR ACTIVITIES AND LEADERSHIP ROLES

**Society of Physics Students Astronomy Club** **Mar 2024 - Present**  
*University Of Texas at San Antonio*  
• Co-Lead of UTSA's Astronomy Club, a sub-organization of SPS focused on community outreach and astronomy education through public stargazing events, guest speakers, and hands-on engagement. **Co-Lead**

**Society of Physics Students** **Aug 2022 - Mar 2024, Mar 2024 - Present**  
*University Of Texas at San Antonio*  
• Coordinated outreach events, field trips, and guest speaker sessions for the Society of Physics Students to promote engagement and scientific community-building. **Secretary and Outreach Officer**  
• Organized and supported community outreach events, including the Girl Scouts of Southwest Texas Adventure Day, to expand STEM engagement and public science literacy.