

# Sebastian Lopez

## Curriculum Vitae

Department of Astronomy  
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[Publication List](#)

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### Education:

#### The Ohio State University, Columbus, OH

Ph.D in Astronomy	Aug 2020 - Present
M.S. in Astronomy	May 2023
Advisor: Laura A. Lopez	

#### University of Florida, Gainesville, FL

Bachelor's of Science in Astrophysics and Physics	Jun 2016 - Apr 2020
Astrophysics B.S: Summa Cum Laude	
Physics B.S: Cum Laude	
Senior Thesis: <i>Properties of Spatially Resolved Galactic Gas accretion in the Illustris-TNG50 Simulation</i>	
Advisor: Paul Torrey	

#### Miami-Dade College, Miami, FL

Associate of Arts	Aug 2014 - Apr 2016
<ul style="list-style-type: none"><li>Part of High School Dual Enrollment Program</li><li>Graduated with Highest Honors</li></ul>	

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### Awards and Honors:

OSU Presidential Fellowship	2025 - 2026
Ann S. Tuttle Paper Award	2024
OSU Graduate Enrichment Fellowship	2020 - 2021
UF Astronomy Department Best Thesis Award	Spring 2020
UF Dean's List Recipient	Fall 2018, Spring 2019, Fall 2019, Spring 2020

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## Publications - Primary Contributor:

**Lopez, S** et al. 2025. “*Observational Constraints on Cool Gas Clouds in M82’s Starburst-Driven Outflow*” ApJ, Volume id.100

\*Porraz Barrera, N., **Lopez, S.**, et al. 2024 “*Hot Gas Outflow Properties of the Starburst Galaxy NGC 4945*” ApJ, Volume 968, id.54

**Lopez, S.** et al. 2023 “*X-Ray Properties of NGC 253’s Starburst-driven Outflow*” ApJ, Volume 942, id.108

\* Advised Student

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## Publications - Co-Author:

Barnes, P. et al. (incl. **Lopez, S.**) 2025. “*The Three-mm Ultimate Mopra Milky Way Survey. III. Data Release 6*”, ApJ Accepted, eprint arXiv:2503.04887

Fisher, D. et al. (incl. **Lopez, S.**) 2025. “*JWST Observations of Starbursts: Cold Clouds and Plumes Launching in the M82 Outflow*” MNRAS, Volume 538, Issue 4

Villanueva, V. et al (incl. **Lopez, S.**) 2024. “*JWST Observations of Starbursts: Relations between PAH features and CO clouds in the starburst galaxy M 82*” A&A, Volume 695, id.A202

Bolatto, A. et al. (incl. **Lopez, S.**) 2024 “*JWST Observations of Starbursts: Polycyclic Aromatic Hydrocarbon Emission at the Base of the M82 Galactic Wind*” ApJ, Volume 967, id.63

Nguyen, D. et al. (incl. **Lopez, S.**) et al. 2024 “*Dynamics of hot galactic winds launched from spherically-stratified starburst cores*” MNRAS, Volume 518, pp.87

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## Presentations:

Talk, AXIS Galaxy SWG, June 2025, “*Morphology and Metal Content of Star Formation Driven Outflows*”

Poster, SACNAS, October 2024, “*Cool Gas Clouds Swept by M82’s Hot Galactic Wind*”

Talk, Kansas University Astronomy Seminar, September 2024, “*The Multiwavelength Properties of Starburst-Driven Outflows*”

Talk, STScI Spring Symposium, April 2024, “*Hot Gas Properties of Local Starburst-Driven Outflows*”

Talk, SACNAS, October 2023, “*Million Degree Gas Outflows Launched from Star-Forming Galaxies*”

Talk, Ohio Latino Affairs Summit, September 2023, “*Nurturing Future Latino/Hispanic Scientists in Columbus, OH*”

Invited Talk, HEAD Meeting, March 2023, “*The Temperature and Metallicity Gradients of Starburst-Driven Outflows*”

Poster, HEAD Meeting, March 2022, “*Properties of the Hot Gas Outflow of NGC 253*”

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## **PI Accepted Proposals:**

XMM-Newton - “*The Hot Outflow Properties of the Starbursting Dwarf Galaxy NGC 1569*”, 100ks Observation, \$54k, PI: Sebastian Lopez

Chandra X-ray Observatory - “*Unveiling the Origin of Cool Galactic Winds with Chandra*”, Archival, \$49k, PI: Sebastian Lopez

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## **Service and Outreach:**

Summer Undergraduate Research Program, The Ohio State University      Summer 2021, 2024

- Co-advisor for undergraduate students.

AstroLatinX      Summer 2023 - Present

- Founding Member  
Organization created to provide bilingual outreach to local Hispanic / Latin American communities in Columbus to increase interest in the field from underrepresented groups.

Polaris Mentorship Program, The Ohio State University      Aug 2021 - Aug 2023

- Mentor in the Polaris Program which aims to create a more diverse, inclusive, and equitable environment in Physics and Astronomy and aiding in the retention of undergraduate students from underrepresented and non-traditional backgrounds.