

Daniel R. Piacitelli

Rutgers University | piacitelli.danielr@gmail.com | [Website](#) | ORCID: 0000-0003-0200-6986

RESEARCH STATEMENT

I am a fifth-year Ph.D. candidate at Rutgers University using cosmological zoom simulations to study the **circumgalactic medium of dwarf galaxies**. I forward-model simulations into observables, from absorption sightlines to emission maps, to test how feedback shapes the baryon cycle and support ongoing CGM surveys.

EDUCATION

Ph.D. Physics & Astronomy 2022 – 2027 (Expected)
Rutgers University, Piscataway, NJ

- Advised by Alyson Brooks

B.S. Astronomy & Physics – Minor Applied Mathematics 2018 – 2022
University of Washington, Seattle, WA

PUBLICATIONS

First Author (ADS citation count as of Oct. 2026 listed on the left)

- “The CGM in a New Light: Simulated H α , [N II], and [O III] Emission around Dwarf Galaxies.”
Piacitelli, D. R., Brooks, A., Sanchez, N., Christensen, C., Neufeld, C., Pasha, I., van Dokkum, P., Cruz, A., Keller, B., Shen, S., Quinn, T., & Wadsley, J. (2026). (*Submitted to ApJ*).
arXiv: [10.48550/arXiv.2610.37363](https://arxiv.org/abs/10.48550/arXiv.2610.37363)
- 1 “The Simulated Oxygen Shortage: Mapping the Missing OVI in Simulated Dwarf Galaxies to Subgrid Physics.”
Piacitelli, D. R., Brooks, A., Sanchez, N., Khatri, H., Christensen, C., Hummels, C., Johnson, S., Mishra, N., Shen, S., Cruz, A., Keller, B., Quinn, T., & Wadsley, J. (2026). (*Submitted to ApJ*).
arXiv: [10.48550/arXiv.2605.15275](https://arxiv.org/abs/10.48550/arXiv.2605.15275)
- 21 “Marvelous Metals: Surveying the Circumgalactic Medium of Simulated Dwarf Galaxies”
Piacitelli, D. R., Brooks, A., Christensen, C., Sanchez, N., Faerman, Y., Shen, S., Cruz, A., Keller, B., Quinn, T., & Wadsley, J. (2025). *ApJ*, 993(2), 230, doi: [10.3847/1538-4357/ae06a0](https://doi.org/10.3847/1538-4357/ae06a0).
- 10 “Absorption-Based Circumgalactic Medium Line Emission Estimates”
Piacitelli, D. R., Solhaug, E., Faerman, Y., & McQuinn, M. (2022). *MNRAS*, 516(2), 3049–3067.
doi: [10.1093/mnras/stac2390](https://doi.org/10.1093/mnras/stac2390)

Contributing Author

- 11 “The Signatures of Density Fluctuations and Mixing Gas in Circumgalactic Absorption Systems”
Faerman, Y., **Piacitelli, D. R.**, McQuinn, M., & Werk, J. (2025). *ApJ*, 983(2), 176. doi: [10.3847/1538-4357/ada773](https://doi.org/10.3847/1538-4357/ada773)
- 38 “The Impact of Cosmic Rays on the Kinematics of the Circumgalactic Medium”
Butsky, I., Werk, J., Tchernyshyov, K., Fielding, D., Breneman, J., **Piacitelli, D. R.**, Quinn, T., Sanchez, N., Cruz, A., Hummels, C., Burchett, J., & Tremmel, M. (2022). *ApJ*, 935(2), 69.
doi: [10.3847/1538-4357/ac7ebd](https://doi.org/10.3847/1538-4357/ac7ebd)

Policy

- “Recommendations for the Astronomy Graduate Admissions Process”
Levesque, E., Dressing, C., Ivie, R., Krahm, G., Lopez, L., MacGregor, M., **Piacitelli, D. R.**, & Rice, T. (2026).
[arXiv:2605.00992](https://arxiv.org/abs/2605.00992)
- “AAS Graduate Admissions Task Force: Final Report and Recommendations”
Levesque, E., Ivie, R., Johns-Krull, C., Krahm, G., Lopez, L., MacGregor, M., Monzon, S., **Piacitelli, D. R.**, Redfield, S., & Rice, T. (2025). [arXiv:2505.09759](https://arxiv.org/abs/2505.09759)

TALKS

Professional

- **Seminar**, Galread – *Princeton University, Princeton, NJ* May 2026
- **Conference Flash Talk**, Baryons @ Princeton – *Princeton University, Princeton, NJ* May 2026
- **Seminar**, Galaxies Lunch – *Yale University, New Haven, CT* May 2026
- **Seminar**, Galaxy Formation Seminar – *Flatiron Institute: CCA, New York, NY* May 2026
- **Conference Flash Talk**, AGN & Energy Flows – *Flatiron Institute: CCA, New York, NY* February 2026
- **Conference Poster**, Galactic Frontiers II – *Dartmouth College, Hanover, NH* June 2025
- **Seminar**, Galaxies Lunch – *Yale University, New Haven, CT* February 2025
- **Seminar**, Galaxy Formation Seminar – *Flatiron Institute: CCA, New York, NY* January 2025
- **Conference Talk**, Multiphase Madness Conference – *Center for Astrophysics, Cambridge, MA* August 2024
- **Conference Poster**, Small Galaxies Cosmic Questions II – *Durham University, Durham, UK* July 2024
- **Seminar**, Galaxy Formation Seminar – *Flatiron Institute: CCA, New York, NY* May 2024
- **Symposium**, Mary Gates Undergraduate Research Symposium – *University of Washington, Seattle, WA* May 2021
- **Symposium**, Mary Gates Undergraduate Research Symposium – *University of Washington, Seattle, WA* May 2019

Public

- **Outreach**, Jersey Roots, Cosmic Reach – *Rutgers University, Piscataway, NJ* December 2025
- **Outreach**, Rutgers Astronomical Society Public Observing Night – *Rutgers, Piscataway, NJ* March 2025

HONORS & AWARDS

- Baer Prize – *University of Washington* May 2021
- Astronomy Departmental Honors – *University of Washington* 2019 – 2022
- Dean's List Status – *University of Washington* 2018 – 2022

MENTORSHIP

Students Advised

- Hetvi Khatri, Undergraduate Research – *Rutgers University* 2025 – 2026

Programs

- Department of Physics Near-Peer Mentor – *Rutgers University* 2025 – 2026
- Honors College Grads Giving Back – *Rutgers University* 2023 – 2025
- Astronomy Undergraduate Peer Mentoring – *University of Washington* 2021 – 2022

TEACHING

Teaching Assistant

Rutgers University, Piscataway, NJ

2022 – Present

- PHYS 155: Intro to Research & Research Communities in Physics & Astronomy Fall 2025
- PHYS 155: Intro to Research & Research Communities in Physics & Astronomy Fall 2024
- PHYS 230: Analytical Physics III Laboratory Spring 2024
- PHYS 229: Analytical Physics II Laboratory Fall 2023
- PHYS 206: General Physics Laboratory Spring 2023
- PHYS 203: General Physics Recitation Fall 2022

Grader

University of Washington, Seattle, WA

2020 – 2022

- ASTR 321: The Solar System Spring 2022
- ASTR 480: Introduction to Astronomical Data Analysis Spring 2022
- ASTR 323: Extragalactic Astronomy and Cosmology Winter 2022
- ASTR 322: The Contents of Our Galaxy Fall 2021
- ASTR 321: The Solar System Spring 2021
- ASTR 323: Extragalactic Astronomy and Cosmology Winter 2021
- ASTR 322: The Contents of Our Galaxy Fall 2020

LEADERSHIP, SERVICE, & INCLUSION WORK

- Working Group on Graduate Admissions Member** 2024 – Present
American Astronomical Society
- Serving as an immediate community resource dedicated to collecting and communicating current information regarding graduate admissions trends and complications
- AAS Graduate Admissions Task Force Member** 2024 – 2025
American Astronomical Society
- Addressing inclusivity issues in the Ph.D. application process by collecting data from multiple institutions and drafting official recommendations
- Astro Grad Student Congress Representative** 2023 – 2026
Astro Grad Student Congress
- Bringing together astronomy graduate students across the United States to promote interdepartmental discourse
- New Brunswick Health Sciences Technology High School Outreach** 2023 – 2024
Rutgers University, Piscataway, NJ
- Engaging with local high school physics students through interactive physics demonstrations relating to their current curriculum
- Asynchronous Student Peer Instruction & Review Experience (ASPIRE)** 2023 – Present
Rutgers University, Piscataway, NJ
- Independently organizing a review experience for undergraduates to receive feedback from graduate students, post-docs, and faculty on applications to REUs and Ph.D. programs
- Minorities in Physics and Astronomy** 2022 – 2025
Rutgers University, Piscataway, NJ
- Advancing the concerns of, and nurturing community among, historically underrepresented and marginalized individuals. Served as Vice President, Treasurer, and Member
- Physical Sciences Curriculum Team Lead, Synbio For Everyone** 2021 – 2022
University of Washington, Seattle, WA
- Led the physical sciences curriculum team in designing accessible K–12 STEM activities and testing their effectiveness in the classroom
- Undergraduate Research Leader** 2020 – 2022
University of Washington, Seattle, WA
- Motivating fellow undergraduates to engage in research through panel discussions and presenting research projects to undergraduate classes