

Daniel R. Piacitelli

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RESEARCH STATEMENT

Fifth-year Astrophysics PhD Candidate at Rutgers University, leveraging cosmological zoom simulations to study the circumgalactic medium of dwarf galaxies and deepen our understanding of the baryon cycle and galaxy evolution.

EDUCATION

Ph.D. Candidate – Physics & Astronomy

2022 – Present

Rutgers University, Piscataway, NJ

B.S. Astronomy & Physics – Minor Applied Mathematics

2018 – 2022

University of Washington, Seattle, WA

SUBMITTED PUBLICATIONS

First Author (ADS citation count on left)

- 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*.
- 15 “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.
- 10 “Absorption-Based Circumgalactic Medium Line Emission Estimates”
Piacitelli, D. R., Solhaug, E., Faerman, Y., & McQuinn, M. (2022). *MNRAS*, 516(2), 3049–3067.

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.
- 36 “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.

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).

“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).

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, 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 – 2026*

TEACHING

Teaching Assistant

Rutgers University, Piscataway, NJ

2022 – Present

- PHYS155: Intro to Research & Research Communities in Physics & Astronomy *Fall 2025*
- PHYS155: Intro to Research & Research Communities in Physics & Astronomy *Fall 2024*
- PHYS229: Analytical Physics III Laboratory *Spring 2024*
- PHYS229: Analytical Physics II Laboratory *Fall 2023*
- PHYS206: General Physics Laboratory *Spring 2023*
- PHYS203: General Physics Recitation *Fall 2022*

Grader

University of Washington, Seattle, WA

2020 – 2022

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

LEADERSHIP, SERVICE, & INCLUSION WORK

Working Group on Graduate Admissions Member

American Astronomical Society

2024 – Present

- 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

American Astronomical Society

2024 – 2025

- 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*

- Organizing and managing the physical sciences curriculum team in creating activities to improve accessibility of K–12 STEM education materials
- Working alongside students with disabilities to complete activities and assess their efficacy 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
- Reviewing Mary Gates Undergraduate Research Symposium abstracts for scientific clarity