

Nikhil Patten

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Employment History

- 2022 – **Tutor**, Office of Academic Support, Athletics, University of Wyoming
- 2021 – **Graduate Assistant**, Department of Physics & Astronomy, University of Wyoming
- 2019 – 2021 **Lab Technician**, Department of Physics, The College of New Jersey

Education

- 2021 – **Ph.D., University of Wyoming** in Physics.
Dissertation topic: Mass-loss rates for OB stars central to bowshock nebulae.
- 2021 – 2023 **Masters of Science, University of Wyoming** in Physics.
Plan B Masters (Non-Thesis).
- 2017 – 2021 **Bachelors of Science, The College of New Jersey** in Physics.
Concentration: Biophysics, *Cum Laude*.

Research Interests

- Stellar outflows; stellar spectroscopy; quantitative spectroscopy; massive stars; scientific outreach; observational astronomy; astronomical instrumentation; active learning techniques and pedagogy.

Classroom Experience

- Fall 2021 **PHYS1210 Engineering Physics I, Teaching Assistant.** A physics class for engineering majors. A studio-style class has students take an active part in learning and teaching their peers. Teaching Assistants help facilitate learning, designing and carrying-out labs, grading, and holding office hours.
- ASTR1050 Survey of Astronomy, Teaching Assistant.** An introductory astronomy course for majors and non-majors. A general science course covering the topics of: the Moon, the Solar System, the Sun and other stars, the Milky Way, Galaxies, and Hubble's Law. Teaching Assistants are responsible for conducting labs, grading lab reports, and holding office hours.
- Spring 2022 **PHYS1050 Concepts of Physics, Teaching Assistant.** An introductory algebra-based physics course designed for non-majors. Physics 1050 covers topics: Kinematics, Dynamics, Work, Energy, Torque, Oscillatory Motion, and Radioactivity. Teaching Assistants conduct class, grade lab reports, and hold office hours.

Classroom Experience (continued)

- **PHYS1120 General Physics II, Teaching Assistant.** The second level non-calculus physics course covering topics of: electrostatics, electric circuits, optics, electrodynamics, magnetism, and Maxwell's Laws. As a teaching assistant I was responsible for discussion sections which consisted of a group-based problem solving session about topics they learned in class.

Research Publications

Conference Proceedings

- 1 S. C. Andrews, D. T. Hope, R. J. McCrory, *et al.*, "Mass-Loss Rates for Massive Stars from Stellar Bowshocks III," in *American Astronomical Society Meeting Abstracts*, ser. American Astronomical Society Meeting Abstracts, vol. 243, Feb. 2024, 408.03, p. 408.03.
- 2 D. Hope, S. Andrews, A. Larsen, *et al.*, "Mass-Loss Rates for Massive Stars from Stellar-Wind Bow Shocks IV: Converting IR Intensities into Gas Densities," in *American Astronomical Society Meeting Abstracts*, ser. American Astronomical Society Meeting Abstracts, vol. 243, Feb. 2024, 408.04, p. 408.04.
- 3 J. Meredith, S. Andrews, D. Hope, *et al.*, "Mass-Loss Rates for Massive Stars from Stellar Bowshocks V," in *American Astronomical Society Meeting Abstracts*, ser. American Astronomical Society Meeting Abstracts, vol. 243, Feb. 2024, 408.05, p. 408.05.
- 4 **Patten, Nikhil**, S. Andrews, D. Hope, *et al.*, "Mass-Loss Rates for Massive Stars from Stellar Bowshocks," in *American Astronomical Society Meeting Abstracts*, ser. American Astronomical Society Meeting Abstracts, vol. 243, Feb. 2024, 157.01, p. 157.01.
- 5 A. C. Rosenthal, S. C. Andrews, D. T. Hope, *et al.*, "Mass-Loss Rates for Massive Stars from Stellar Bowshocks I," in *American Astronomical Society Meeting Abstracts*, ser. American Astronomical Society Meeting Abstracts, vol. 243, Feb. 2024, 408.01, p. 408.01.
- 6 A. R. Sterling, S. C. Andrews, D. T. Hope, *et al.*, "Mass-Loss Rates for Massive Stars from Stellar Bowshocks VI," in *American Astronomical Society Meeting Abstracts*, ser. American Astronomical Society Meeting Abstracts, vol. 243, Feb. 2024, 408.06, p. 408.06.
- 7 **Patten, Nikhil** and C. Kobulnicky, "Fundamental stellar parameters for massive stars powering IR bowshocks," in *American Astronomical Society Meeting Abstracts*, ser. American Astronomical Society Meeting Abstracts, vol. 241, Jan. 2023, 367.05, p. 367.05.

Experience

Awards and Recognitions

- 2021–2022 ■ **Outstanding TA Award**, University of Wyoming.

Certifications

- 2022 ■ **Certified Observer**, Apache Point Observatory.
■ **Certified Observer**, Wyoming Infrared Observatory.

Outreach and Leadership

- 2023–2024 **Department Events Coordinator.** An elected position on the Graduate Student Council for Astronomy and Physics (GradSCAP). The elected candidate serves as the contact between students and faculty in regards to organizing and facilitating department events such as the WIRO open house, graduate prospective student visits; and social events.
- 2022, 2024 **Prospective student visit.** An annual event to welcome admitted students into the graduate astronomy program. The multi-day orientation features meetings with department faculty, current graduate students, and a tour of Laramie. In these events, I was responsible for scheduling and making reservations for group dinners, rides, and organizing other miscellaneous events.
- 2021–2024 **WIRO open house.** An annual event to the community. This event is an opportunity for the community to see the University of Wyoming's very own Wyoming Infrared Observatory on Mount Jelm. Participating in the event is a chance to show the community our observatory and talk about the research we do. During my time helping out at this event, I have been responsible for: checking guests in for tours, helping run events at the base camp, and led tours of the observatory.

References

Available on Request