Draft version August 21, 2025
Typeset using LaTeX **modern** style in AASTeX7.0.1

Teaching Statement

Benjamin L. Davis [1]

[1] *Center for Astrophysics and Space Science (CASS), New York University Abu Dhabi, PO Box 129188, Abu Dhabi, United Arab Emirates*

My teaching philosophy centers on clarity, engagement, and mentorship. I aim to make complex scientific concepts accessible while fostering critical thinking and enthusiasm for discovery. Across my teaching career, I have taught a broad range of courses—from introductory laboratories for non-science majors to core physics and astronomy lectures for majors—which has shaped a flexible and student-focused teaching style.

TEACHING EXPERIENCE

I have taught at multiple institutions and levels:

- **Pittsburg State University:** *Astronomy Laboratory* (TA).
- **University of Arkansas:** *Survey of the Universe* (lecture and lab), *College Physics II Drill, University Physics I Laboratory.*
- **Visiting Assistant Professor, Arkansas & Arkansas Tech Universities:** *University Physics I, General Physics II, Introduction to Physical Science, Physical Science Laboratory, Physics Laboratory I & II.*
- **NYU Abu Dhabi (postdoc):** Guest lecturer, *Galaxy Formation.*

CORE PRACTICES

Students consistently noted my lectures were clear, well-structured, and approachable. I use real-world examples, interactive problem-solving, and group activities to engage students and build confidence. Evaluations highlight that I "explained concepts in multiple ways until everyone understood," that I was "always willing to help," and that I "made physics interesting and less intimidating."

TEACHING PHILOSOPHY

I believe science education should both develop technical competence and inspire curiosity. My goals are to:

- Demystify abstract concepts through clear explanation and application.
- Cultivate critical thinking by connecting equations to physical meaning.
- Inspire the next generation of scientists and scientifically literate citizens.

Email: ben.davis@nyu.edu

INTEGRATION WITH RESEARCH AND MENTORSHIP

My research on black hole–galaxy scaling relations, causal discovery, and AI/ML methods provides opportunities for undergraduate and graduate involvement. Projects such as applying symbolic regression to galaxy survey data or testing causal hypotheses in simulations are well-suited for student participation, bridging classroom learning with authentic discovery.

As a faculty member, I look forward to teaching both introductory and advanced courses while mentoring students in research that connects theory to evidence and inspires lifelong curiosity.