Marc Whiting

University of Utah
1721 Campus Center Drive, SAEC
Salt Lake City, Utah, 84112
mwhiting@astro.utah.edu

Publications

- **Marc L. Whiting**, Joshua B. Hill, Benjamin C. Bromley, and Scott J. Kenyon. "A Catalog of Nearby Accelerating Star Candidates in Gaia DR3." *The Astronomical Journal*, Volume 165, Number 5, April 2023, pp. 193. Published by the American Astronomical Society.

- **Marc L. Whiting**, Lauren A. Barth-Cohen, Jordan M. Gerton, Claudia De Grandi, Adrian L. Adams, Kelby T. Hahn, Kevin Davenport. "What are the dynamics between answer-seeking and sensemaking?" *Proceedings of the Physics Education Research Conference 2024*, Boston, MA, July 10-11, 2024, pp. 444-449.

Conference Presentations

- **A Catalog of Nearby Accelerating Stars.** Co-presented with Josh Hill. Spring 2023 Undergraduate Research Symposium, University of Utah.

- **Exploring Physics Education Research (PER) Through the Lens of the Learning Sciences.** Student Lecture Series (SLS) Talk. University of Utah Physics and Astronomy Group. Spring 2024.

- **Exploring Learner's Intuitions in Quantum Mechanics.** Poster presentation at Foundations and Frontiers of Physics Education Research: Puget Sound 2024. June 20-23, 2024, Diablo, Washington, North Cascades Environmental Learning Center.

- **What is the Relationship Between Answer-Seeking and Sensemaking?** Poster presentation of a PERC paper at the 2024 AAPT Summer Meeting. July 6-10, 2024, Boston, MA (AAPT) and July 10-11, 2024 (PERC).

Research Experience

2023 - Present : **Research Assistant, University of Utah**

Sensemaking in IPL$\hat{2}$S labs

Engaged in ongoing research to understand student sensemaking in reformed IPL^{2}S laboratory settings. Using a theoretical framework grounded in sensemaking and resource theory, we analyze the real-time reasoning processes of students. This project aims to construct a nuanced picture of the pathways to sensemaking, including answer-seeking behaviors.This project aims to design and iterate a meaningful TA training program to push the IPL^{2}S laboratory to the next level.

Exploring Learner's Intuitions in Quantum Mechanics

Quantum Mechanics (QM) learning opportunities are typically limited to advanced courses within the Physics major. Given the inherent counterintuitive challenges, our goal is to examine potential resources learners can access in the everyday classical world that can support their progressive understanding of quantum concepts. This research will set the foundation for a future NSF grant submission that will add to our understanding of learners' knowledge of QM and new courses that can support learners in more profound comprehension of QM concepts.

Natural History Museum of Utah - A Climate of Hope

Learning physics was exciting to understand how the world works. Since then, my passion has evolved

to know how to help and give back to the world. The research at the museum is precisely that, our team is exploring climate change and seeking ways to support underrepresented communities through side door conversations and realiable education.

2021 - 2023 : **Research Student, University of Utah**
In collaboration with Dr. Ben Bromley, Josh Hill, and Dr. Scott Kenyon, we developed the Gaia Nearby Accelerating Star Catalog (GNASC) (Whiting, Hill, Bromley, & Kenyon, 2023).

Education

2023 - Anticipated 2028 University of Utah, Salt Lake City
Ph. D in Physics Education Research (PER) - Educational Psychology - Learning and Cognition

2020 - 2023 The University of Utah, Salt Lake City
Bachelor of Science in Physics
GPA: 3.92

2014 - 2016 Utah Valley University, Orem, Utah
Associate of Science

Teaching Experience

Fall 2022 Teaching Assistant, Foundations of Astronomy Course, University of Utah
Served as a teaching assistant for Dr. Dan Wik

Awards

2023 - Paul Gilbert Outstanding Undergraduate Research Award in Astronomy, Astrophysics, or High Energy

Technical Skills

Computer Science and Data Analysis: Python, Astropy, Scikit learn, Maple, Latex, SPSS, R

Spanish: Fluent in Spanish, with conversational and written proficiency.

Community Service

Therapy Dog Handler and Community Support Volunteer: Engaged in meaningful community outreach by volunteering at various facilities, offering invaluable emotional support through the presence of specially trained therapy dogs. Demonstrated empathy, compassion, and interpersonal skills while connecting with individuals in need, contributing to their well-being and fostering a positive and comforting environment.