

Rhett Zollinger

Work Address:

University of Utah
Department of Physics and Astronomy
201 James Fletcher BLDG.
115 S. 1400 E.
Salt Lake City, UT, 84112-0830
801-928-4875 (Cell)
rhett.zollinger@utah.edu

Education

University of Utah, Salt Lake City, UT

- Doctor of Philosophy, Department of Physics and Astronomy, 2014
- Masters of Science, Department of Physics and Astronomy, 2012

Weber State University, Ogden, UT

- Bachelors of Science, Physics Department, 2008

Professional Appointments

Associate Professor of Physics (Lecture): University of Utah, 2022 – present

Associate Professor of Physics: Southern Utah University, 2020 – 2022

Assistant Professor of Physics: Southern Utah University, 2015 – 2020

Visiting Assistant Professor: Weber State University, 2014 – 2015

Adjunct Course Instructor – Weber State University, Summer semesters 2011 – 2014

Goals and Accomplishments

My current professional focus is related to development in teaching excellence. I am continually educating myself on the latest evidence-based teaching and learning practices. I try to apply these practices in my courses. I have worked this semester to make my courses more engaging and thought provoking for students. Recent fellowship and workshop participation support these goals.

Course Experience

- PHYS 1010, Elementary Physics (both face-to-face and online only courses)
This course is intended for general education

- PHYS/ASTR 1040, Elementary Astronomy (both face-to-face and online only courses)
A broad overview of astronomy intended for general education
- PHYS/ASTR 1050, The Solar System
Intended for general education
- PHYS 2010, 1st Semester Introductory Physics (algebra based)
Topics include: mechanics, waves, fluids, and thermodynamics
- PHYS 2020, 2nd Semester Introductory Physics (algebra based)
Topics include: electricity, magnetism, optics, and modern physics
- PHYS 2210, 1st Semester Introductory Physics for Scientists and Engineers
Topics are similar to PHYS 2010, with an emphasis on calculus
- PHYS 2220, 2nd Semester Introductory Physics for Scientists and Engineers
Topics are similar to PHYS 2020, with an emphasis on calculus
- PHYS 2015/2215, 1st Semester Introductory Physics Lab
(both algebra and calculus based labs)
- PHYS 2025/2225, 2nd Semester Introductory Physics Lab
(both algebra and calculus based labs)
- PHYS 2710, 3rd Semester Introductory Physics for Scientists and Engineers
Topics include: waves, thermodynamics, and an introduction to modern physics
- PHYS 3180, Thermal Physics
- PHYS 3310, Modern Physics I
Topics include: special relativity and quantum mechanics
- PHYS 3320, Modern Physics II
Topics include: atomic physics, nuclear physics and particle physics

Synergistic Activities

Content expert, Project NEXT, 2021 - present

Project NEXT is a collaboration between SUU and Microsoft to build an online PHYS 1010 course that encourages learning through a gameplay environment. Once complete, the project will have created a complete course design package that can be used to develop other online courses from any discipline.

Instructor, Southern Utah University Jumpstart, 2018 – 2020

Jumpstart is a collaboration of instructors from multiple disciplines who work together to combine several freshman level courses into a single interdisciplinary learning experience for students during their freshman year.

Instructor, Geophysics discussion group, 2018 - 2020

Collaboration between physics, geology, and biology professors to lead a weekly discussion group of geology majors on the science, or lack of science, in popular movies.

Principle Investigator and presenter, SUU portable planetarium, 2015 - 2022

Our group trains students from a variety of academic disciplines to give astronomy presentations to local school and community groups using a portable planetarium.

Outreach Experience

- *Public Science Demonstration Events*, 2015 – present
- *SUU Portable Planetarium* 2015 – 2022
- *Public Star Parties*, 2015 – 2022
- *Teacher Development Workshops*, 2016 – 2018
- *SUU Physical Science Open House*, 2017, 2018

Current Service and Committee Involvement

- LAOA (Learning Analytics and Outcome Assessment)
- Public Outreach Committee
- Teaching Excellence Committee
- PANDA Network Committee (Volunteer)

Notable Prior Service and Committee Involvement

- Concurrent enrollment coordinator for SUU physics, 2018 - 2022
- Chair of physics hiring committee, (SUU) 2018 and 2021
- USHE representative for SUU physics, 2015 - 2022
- Zone Councilor and member of the National Council for the Society of Physics Students (SPS). 2015 – 2018
- Co-chair of the physical science GE committee (SUU), 2017 - 2018
- STEM advisory board (SUU), 2016 - 2018

Awards and Fellowships

- Faculty Fellowship for Inclusion & Equity, (UofU), 2022 - 2023
- Part of Utah Pathways to STEM (UPSTEM)
- Finalist for Mentor of the Year (SUU), 2022
- Tenure (SUU), 2020
- NASA EPSCoR Research Student Support (UofU), 2013 – 2014
- Outstanding Graduate Teaching Assistant (UofU), 2013
- WEST Scientific Teaching Fellowship (UofU), 2009 – 2010

- Outstanding Graduate Award (WSU), 2008
- Beishline Computer Application Fellowship (WSU), 2007 – 2008

Past Research Collaborations

- *Great Basin Observatory (GBO)*, (SUU) 2016 - 2022
- *NASA Astrobiology Institute's Virtual Planetary Laboratory*, (UofU and WSU) 2012 - 2017
- *Telescope Array*, (UofU) 2010 – 2014
- *HARBOR*, (WSU) 2006 - 2014

Refereed Publications

Small Collaboration Projects

- “New Astrometric Measurements for WDS 12023+7222”, Louis Maez and Rhett Zollinger, *JDSO*, **20** (1), 17 – 21, January 2024
- “CCD Measurements of AB and AC Components of WDS 20023+6438”, William Zerkle, Dallas Anselmo, Taylor Hammack, Gideon Johnson, Morgan Taylor, Sterling Young, and Rhett Zollinger, *JDSO*, **15** (1), 193 – 196, January 2019
- “Using Exoplanet Transits to Characterize the Great Basin Observatory”, Katherine Wilcox and Rhett Zollinger, *Journal of the Utah Academy of Science, Arts, & Letters*, Vol 95, 2018
- “CCD Measurements of AB and AC Components of WDS 20420+2452”, Dallas Anselmo, Alan Nelson, Kevin Andrews, Ethan Brown, Bryan May, Cameron Pace, and Rhett Zollinger, *JDSO*, **14** (3), 492 – 495, July 2018
- “Exomoon Habitability and Tidal Evolution in Low-Mass Star Systems”, R. Zollinger, J. C. Armstrong, R. Heller, *MNRAS*, Volume 472, Issue 1, November 2017, Pages 8–25.
- “Additional Planets in the Habitable Zone of Gliese 581”
Rhett R. Zollinger and John C. Armstrong
Astronomy and Astrophysics, Volume 497, Issue 2 (2009) pp. 583-587

Large Collaboration Projects

- “Indications of intermediate-scale anisotropy of cosmic rays with energy greater than 57 EeV in the northern sky measured with the surface detector of the Telescope Array experiment”
R. Abbasi et al., *The Astrophysical Journal Letters*, 790:L21, 2014
- “The energy spectrum of ultra-high-energy cosmic rays measured by the Telescope Array FADC fluorescence detectors in monocular mode”
T. Abu-Zayyad et al., *Astroparticle Physics* 48 (2013) 16–24

- “Search for Anisotropy of Ultrahigh Energy Cosmic Rays with the Telescope Array Experiment”
T. Abu-Zayyad et al., *The Astrophysical Journal*, 757:26, 2012
- “The surface detector array of the Telescope Array experiment”
T. Abu-Zayyad et al., *Nuclear Instruments and Methods in Physics Research A* 689 (2012) 87–97
- “The energy spectrum of Telescope Array’s Middle Drum detector
and the direct comparison to the High Resolution Fly’s Eye experiment”
T. Abu-Zayyad et al., *Astroparticle Physics* 39-40 (2012) 109–119
- “New air fluorescence detectors employed in the Telescope Array experiment”
H. Tokuno, et al., Elsevier, *Nuclear Instruments and Methods in Physics Research*,
A676, 54, (2012)

Professional Societies and Memberships:

American Association of Physics Teachers (AAPT)

American Astronomical Society (AAS)

Society of Physics Students (SPS)

Sigma Pi Sigma (physics honor society)