Jesse Robb Feddersen, PhD

CONTACT INFORMATION

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CURRENT TITLE

Assistant Lecturer, Department of Physics and Astronomy, University of Wyoming

EDUCATION

Yale University, New Haven, Connecticut, USA
M.S., M.Phil. Astronomy — **December, 2015**
PhD, Astronomy — **December, 2019**

Indiana University, Bloomington, Indiana, USA
B.S., Astronomy/Astrophysics — **May, 2013**
B.S., Physics — **May, 2013**

TEACHING EXPERIENCE

Department of Physics and Astronomy, University of Wyoming, Laramie, WY, USA

Assistant Lecturer — **2020 - present**

Taught the following classes, supervised teaching assistants, held office hours, and advised students.

ASTR 1050 - Survey of Astronomy	**Fall 2020-22, Spring 2022**
ASTR 5870 - Classic Papers of Astronomy (graduate seminar)	**Spring 2021**
PHYS 1210 - Engineering Physics I	**Spring 2022-23**
PHYS 1220 - Engineering Physics II	**Spring 2021-23, Fall 2022**
PHYS 4410 - Electricity and Magnetism I	**Fall 2020**
PHYS 4840 - Mathematical and Computational Physics II	**Spring 2021, 2023**

Summer Science Program, Chapel Hill, NC, USA
Residential intensive astronomy research program for high school students.

Associate Academic Director — **Summer, 2023**
Supervisor: Dr. Michael Hannawald

Designing curriculum, teaching lectures, and mentoring teaching assistants for 6-week program.

Yale Summer Program in Astrophysics, New Haven, CT, USA
Residential intensive astronomy research program for high school students at the Leitner Family Observatory and Planetarium.

Teaching Fellow — **Summer, 2016 & 2017**
Supervisor: Dr. Michael Faison

Led programming tutorials and observing labs for 4-week intensive research program for high school students.

Department of Astronomy, Yale University, New Haven, CT USA

Teaching Fellow **2013 - 15**

Taught discussion sections, research labs, tutored, and graded for the following undergraduate astronomy courses:

ASTR 220 - Galaxies and Cosmology **Fall, 2013**
Supervisor: Dr. Louise Edwards

ASTR 160 - Frontiers and Controversies in Astrophysics **Spring, 2014**
Supervisor: Dr. Louise Edwards

ASTR 120 - Galaxies and the Universe **Summer, 2014**
Supervisor: Dr. Robert Zinn

ASTR 255 - Research Methods in Astrophysics **Fall, 2014**
Supervisor: Dr. Marla Geha

ASTR 170 - Introduction to Cosmology **Fall, 2015**
Supervisor: Dr. Louise Edwards

University Service

Guest Curator - UW Art Museum **2023**
Faculty Advisor - UW Society of Physics Students **2021-23**
Member - UW Physics and Astronomy Undergraduate Curriculum Committee **2022-23**
Member - UW Physics and Astronomy Science Fair Committee **2022-23**

Volunteer and Outreach Experience

Sidewalk Astronomy **2022-23**
Hosted telescope viewing in downtown Laramie, WY with the Society of Physics Students.

UW Observatory Nights **2021-23**
Hosted public observing nights at the UW rooftop observatory.

Wyoming Infrared Open House **2021-22**
Assisted with public tours of the Wyoming Infrared Observatory.

Leitner Family Observatory and Planetarium Presenter **2014-19**
Presented live planetarium shows to thousands of members of the public at Yale University's Leitner Family Observatory and Planetarium. `https://leitnerobservatory.yale.edu`

Truth & Beauty Podcast Host and Producer **2019**
Created, produced, and co-hosted podcast about the intersection of art and science, using audio editing software Garageband and Audacity. `http://jessefeddersen.com/podcast.html`

Astrobites Author **2014-2016**
Wrote summaries of recent astrophysics papers aimed at an audience of undergraduates interested in beginning their research career. Edited other authors' work, and served on admissions committee for new authors. `https://astrobites.org/author/jfeddersen/`

Yuri's Night at Yale **2015-2016**
Organized outreach event at Yale University's Leitner Family Observatory and Planetarium celebrating the anniversary of human spaceflight. Ran instructional tables, rocket launch demos, planetarium shows, and telescope viewing for several hundred members of the public.

Adler Planetarium Zooniverse Demonstration **2014**
As part of two-week school on education and outreach at the Kavli Institute for Cosmological Physics, designed a floor experience for families at the Adler Planetarium in Chicago, Illinois. `https://blog.zooniverse.org/2014/07/07/demonstrating-citizen-science-at-adler-planetarium/`

Sidewalk Astronomy **2011-2013**
Hosted telescope viewing in downtown Bloomington with Indiana University Astronomy Club, targeted towards unsuspecting passersby.

Physics and Astronomy Open House **2011-2012**
Assisted with various educational astronomy activities at departmental open house, attended by several thousand members of the public annually.

Venus Transit Viewing **2012**
Organized and co-ran event hosted by Indiana Department of Natural Resources; set up telescopes and helped over a hundred members of the public view the transit of Venus safely.

Child's Elementary Telescope Night **2012**
Helped organize and run a telescope viewing at a local elementary school with Indiana University Astronomy Club.

Astronomy with the Stars **2011**
Assisted Bloomington Department of Parks and Recreation with event designed to orient interested members of the public to the night sky. Operated several telescopes and assisted with public viewing.

Research Experience

Department of Astronomy, Yale University, New Haven, CT USA

Thesis Research **2015 - 2019**
Advisor: Dr. Héctor Arce

Studied the impact of stellar feedback on the structure of molecular gas in the Orion Molecular Cloud using multiwavelength observations as part of the CARMA-NRO Orion collaboration.

Theoretical second year research project **2014**
Advisor: Dr. Marla Geha

Studied the effect of the random sampling of stellar initial mass functions on the stellar populations of ultra-faint dwarf galaxies around the Milky Way and investigated the possibility of using pulsar observations to constrain the initial mass function in these systems.

Observational first year research project **2013**
Advisor: Dr. Pieter van Dokkum

Studied the evolution of the median mass galaxy from redshift of 2 to present, using galaxy catalogs from the 3D-HST survey.

Space Telescope Science Institute, Baltimore, MD USA

Space Astronomy Summer Program Research Intern **2012**
Advisors: Dr. Janice C. Lee, Dr. Chun Ly

Investigated the relations between stellar mass, gas-phase oxygen abundance, and star-formation rate in galaxies at z $\approx$ 0.8 Used IDL extensively for both analysis and plotting tasks.

Department of Astronomy, Indiana University, Bloomington, IN USA

Research Assistant **2009 - 2013**
Advisor: Dr. John J. Salzer

Lead a study of nearly unresolved emission-line galaxies in Hα images of the local universe and carried out image reduction/photometry and optical spectral reduction/measurement in order to determine their nature. Measured star-formation and metallicity properties to constrain scaling relations.

Publications

Refereed Publications

Feddersen, J. R., Arce, H. G., Kong, S., et al. 2020, Astrophysical Journal, Accepted
Tanabe, Y., et al. 2019, Publications of the Astronomical Society of Japan, 71, S8
Kong, S., et al. 2019, Astrophysical Journal, 882, 45
Feddersen, J. R., Arce, H. G., Kong, S., et al. 2019, Astrophysical Journal, 875, 162
Feddersen, J. R., Arce, H. G., Kong, S., et al. 2018, Astrophysical Journal, 862, 121
Kong, S., Arce, H. G., **Feddersen, J.R.**, et al. 2018, Astrophysical Journal Supplement, 236, 25
de los Reyes, M. A., et al. 2015, Astronomical Journal, 149, 79

Popular Writing and Communication

`https://massivesci.com/people/jesse-feddersen/`
`https://astrobites.org/author/jfeddersen/`
`https://jessefeddersen.com/podcast`

Technical Skills

- Programming Languages: Python, IDL, Fortran, Supermongo, HTML/CSS, LaTeX
- Astronomical Software: MIRIAD, CASA, IRAF, SAOImage DS9
- Other Software: Google Suite, Microsoft Office, iWork, GarageBand, Audacity, iMovie, Adobe Photoshop, GIMP, Starry Night
- Operating Systems: OS X, Unix/Linux, Windows.

Observing Experience

CARMA (2 weeks)	**2015**
Arecibo (1 night)	**2014**
WIYN 0.9m (6 nights)	**2012**
WIYN 0.9m (5 nights)	**2011**
WIYN 0.9m (4 nights)	**2010**

Honors and Awards

University of Wyoming Promoting Intellectual Engagement Award	**2021**
Phi Beta Kappa	**2013**
Hutton Honors College Travel Grant	**2012**
Hollis and Greta Johnson Research Prize	**2012 & 2013**
McCreery Travel Award	**2012**
Hutton Honors College Research Partnership Grant	**2011**
Cox Research Scholarship	**2009-2013**
National Merit Scholarship	**2009-2013**
Indiana University Dean's List	**2009-2013**