

Joanna S. Bridge

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Current Positions	Insight Data Science Fellow	2020-Present
	Postdoctoral Researcher, University of Louisville Advisor: Benne W. Holwerda	2017-Present
	Content Manager, AstroBetter.com	2018-Present
Education	Ph.D., Pennsylvania State University (PSU) Astronomy & Astrophysics Advisor: Caryl Gronwall	2017
	M.Sc., Pennsylvania State University Astronomy & Astrophysics Advisor: Caryl Gronwall	2014
	B.Sc., University of Illinois at Urbana Champaign (UIUC) Engineering Physics Minors: Astronomy, Classical Civilizations Graduated with High Honors	2011
Research	Graduate Research Assistant <ul style="list-style-type: none">Used <i>Hubble Space Telescope</i> grism spectra to study very high-redshift Lyman-α emitting galaxies	2016-2017
	NSF Graduate Research Opportunities Worldwide Fellow, Sweden <ul style="list-style-type: none">Used the Lyman-α Reference Sample (LARS) to examine Lyman-α surface brightness and morphology in nearby star-forming galaxies	2015-2016
	NSF Graduate Research Fellow <ul style="list-style-type: none">Examined <i>Hubble Space Telescope</i> grism spectra to study properties of star-forming galaxies via their emission lines at cosmic noonUsed the Hobby-Eberly Telescope Dark Energy Experiment (HETDEX) pilot survey data to study physical and morphological characteristics of [OII]-emitting galaxies with redshifts	2011-2015
	Undergraduate NSF REU Research Assistant <ul style="list-style-type: none">Montana State University Solar Physics NSF REU program	2010
	Undergraduate Research Assistant <ul style="list-style-type: none">Analyzed absorption spectra of massive young stellar objects in the Large Magellanic Cloud	2009

Awards/ Honors	American Astronomical Society International Travel Grant	2016, 2018
	Zaccheus Daniel Foundation for Astronomical Science Grant, PSU	2016
	NSF Graduate Research Opportunities Worldwide Fellowship, Sweden	2015-2016
	NASA Pennsylvania Space Grant Consortium Graduate Research Fellowship	2014-2016
	Stephen Brumbach Fellowship in Astrophysics, PSU	2013
	National Science Foundation Graduate Research Fellowship	2011-2014
	Excellent Teaching Assistant Ranking, Dept. of Physics, UIUC	2011
	Layla S. Ryan Scholarship, Department of Astronomy, UIUC	2011
	Kirkwood Women-in-Engineering Scholarship, UIUC	2010
	Laura B. Eisenstein Award, Department of Physics, UIUC	2010
Illinois Promise Scholarship, UIUC	2008	
Proposals	Co-I, "On the origin of Lyman alpha haloes: understanding the kinematics and ionization," VLT/MUSE, ID 105.209T.001 (PI Axel Runnholm)	
	Co-I, "[OIII] 88 Line Observations of Four Remarkably Luminous Galaxies at $z \sim 9-10$," ALMA Cycle 7, ID 2019.1.00397.S (PI Takuya Hashimoto)	
	Admin PI, "The Cosmic Evolution of Circumgalactic Gas and Lyman-alpha Halos," <i>Hubble Space Telescope</i> Cycle 26 General Observer Proposal, ID 15643 (\$81,814) (PI Matthew Hayes)	
	Co-I, "Nebular Line Emission and Stellar Mass of Bright $z \sim 8$ Galaxies Super-Eights," <i>Spitzer Space Telescope</i> Cycle 14, ID 14049 (PI Benne W. Holwerda)	
	PI, "A Search for Lyman-Alpha Emission in the SuperEights: Rare, Bright Galaxies at $z \sim 8$," Keck/MOSFIRE, PID 68/2018A_N101 (\$13,750)	
	PI, "Spatially Resolved Emission Line Ratios for Nuclear AGN Selection," <i>Hubble Space Telescope</i> Cycle 25 Archival Proposal, ID 15008 (\$124,849)	
	PI, "PABST: Resolving the Fossil Record of Black Hole Seeds," Hobby Eberly Telescope, ID PSU17-1-005	
	Co-I, "Lyman-Alpha Blob Observing with VIRUS-P," McDonald Observatory 2.7-m (PI Alex Hagen)	
Academic Service	Referee: Astrophysical Journal	
	Reviewer/TAC: NASA <i>Swift</i>	
Continuing Education	<i>Applied Machine Learning in Python</i> , Coursera Online Course, Applied Data Science with Python Specialty	2019
	<i>Applied Plotting, Charting, and Data Representation in Python</i> , Coursera Online Course, Applied Data Science with Python Specialty	2019
	<i>Introduction to Data Science in Python</i> , Coursera Online Course, Applied Data Science with Python Specialty	2019
	<i>Introduction to Data Science</i> , Udacity Online Course	2019
	<i>Machine Learning</i> , Coursera Online Course	2016
	<i>Introduction to Big Data</i> , Coursera Online Course, Big Data Specialty	2016
	<i>R Programming</i> , Coursera Online Course, Data Science Specialty	2016
	<i>Lyman-alpha as an astrophysical and cosmological tool</i> , 46th Saas-Fee Advanced Course, Swiss Society for Astrophysics and Astronomy	2016
	<i>Summer School in Statistics for Astronomers IX</i> , PSU	2013

Technical Skills	Fluent: Python, IDL, LaTeX, Unix Familiar: R, MATLAB, SQL	
Synergistic Activities	Member of the organizing committee of the ComSciCon Workshop at the AAS Summer Meeting, 2019	2018-2019
	Mentored undergraduate women in STEM through the Physics and Astronomy for Women (PAW) organization at PSU	2016-2017
	Contributed to astrobites.org by authoring and editing daily articles of current papers for a wide public audience, Hiring Committee chair	2015-present
	Participated in American Astronomical Society's Congressional Visits Day , speaking with congresspeople to support STEM funding	2015
	Wrote the scripts for and presented planetarium shows and 3D Universe shows at PSU for high school classes and general public	2014-2015
	Initiated and administered the Extragalactic/Cosmology Journal Club for the PSU Department of Astronomy & Astrophysics	2014-2015
	Engaged in public outreach by running demonstrations during the PSU Department of Astronomy & Astrophysics annual 4-day AstroFest events	2012-2017
	Served as Vice President and Treasurer of UIUC Society for Women in Physics	2009-2011
	Assisted in organizing the Second Annual Midwest Conference for Women in Undergraduate Physics at UIUC for over 150 participants from around the country	2009
	Structured seminars on graduate school and careers in physics for all physics undergraduates through the Society for Women in Physics at UIUC	2008-2011
Advising	Becky Steele (co-advised), University of Louisville graduate student, "Gravitationally-lensed galaxy pairs in the GAMA survey"	2018-2019
	Samir Kusmic (co-advised), University of Louisville undergraduate student, "Morphology of very luminous galaxies at $z \sim 8$ "	2018-2019
Teaching Experience	Instructor, ASTRO 11 (Elementary Astronomy Lab)	2014-2015
	Teaching Assistant, ASTRO 440 (Introduction to Astrophysics)	2015
	Teaching Assistant, Astro 001 (Astronomical Universe)	2014
	Teaching Assistant, PHYS 211 (Mechanics)	2011
Talks/ Posters	<i>"Using Grizli Emission Line Maps to Search for Low-Luminosity AGN,"</i> CLEAR Team Science Meeting, STScl, Baltimore, Maryland, June 2019	
	<i>"The Super Eight Galaxies: Properties of a Sample of Very Bright Galaxies at $7 < z < 8$,"</i> IAU Symposium 352: Uncovering early galaxy evolution in the ALMA and JWST era, Viana do Castelo, Portugal, June 2019 (poster)	
	<i>"Using HST G102 grism spectra to disentangle AGN and star formation activity,"</i> CLEAR Team Science Meeting, Cooks Branch, Texas, December 2018	
	<i>"The Super Eight Galaxies: Properties of a Sample of Very Bright Galaxies at $7 < z <$</i>	

9.5,” Escape of Lyman radiation from galactic labyrinths Conference, Kolymbari, Crete, September 2018

“*The Super Eight Galaxies: Properties of a Sample of Very Bright Galaxies at $7 < z < 9.5$* ,” Lunch Seminar Series, Pennsylvania State University, September 2018

“*The Super Eight Galaxies: Rare, Bright Galaxies at $z \sim 8$* ,” SakuraCLAW Meeting, Tokyo, Japan, March 2018 (poster)

“*Characterizing Lyman-Alpha Scattering in Nearby Galaxies*,” University of Louisville Department of Physics and Astronomy Colloquium, September 2017

“*Characterizing Lyman-Alpha Scattering in Nearby Galaxies*,” SnowCLAW Meeting, Snowbird, Utah, March 2017

“*Characterizing Lyman-Alpha Scattering in Nearby Galaxies*,” Dissertation Talk, American Astronomical Society Winter Meeting, January 2017

“*Characterizing Lyman-Alpha Scattering in Nearby Galaxies*,” Galaxy Journal Club, Space Telescope Science Institute, 2016

“*Characterizing Lyman-Alpha Scattering in Nearby Galaxies*,” Lunch Seminar Series, Pennsylvania State University, 2016

“*What Can Spatially-Resolved Emission Line Gradients Tell Us about High Redshift Galaxies?*,” Neighborhood Workshop on Astrophysics and Cosmology, Center for Theoretical and Observational Cosmology, Pennsylvania State University, 2015

“*Properties of [O II]-Emitting Galaxies in the HETDEX Pilot Survey*,” Inaugural Mid-Atlantic American Physical Society Meeting, The Pennsylvania State University, 2014 (poster)

“*The Hobby Eberly Dark Energy Experiment*,” Pennsylvania State In-service Workshops in Astronomy, Pennsylvania State University, 2014

“*HETDEX Pilot Survey [O II]-Emitting Galaxies: Morphologies and More*,” Neighborhood Workshop on Astrophysics and Cosmology, Center for Theoretical and Observational Cosmology, Pennsylvania State University, 2014

“*Properties of [O II]-Emitting Galaxies in the HETDEX Pilot Survey*,” American Astronomical Society Winter Meeting, 2014 (poster)

“*[O II] Emission-Line Galaxies from the HETDEX Pilot Survey*,” Lyman-Alpha Summit, Pennsylvania State University, 2013

“*Physical and Morphological Properties of [O II] Emitting Galaxies in the HETDEX Pilot Survey*,” Neighborhood Workshop on Astrophysics and Cosmology, Center for Theoretical and Observational Cosmology, Pennsylvania State University, 2013

“*Tracking Magnetic Active Regions on the Solar Photosphere*,” 4th Annual Midwest Conference for Undergraduate Women in Physics, Purdue University, 2011 (poster)

“Movement and Evolution of Magnetic Fields on the Solar Photosphere,” University of Illinois Undergraduate Research Symposium, 2011

“Tracking Magnetic Active Regions on the Solar Photosphere,” University of Illinois Undergraduate Poster Session, 2010 (poster)

“A Comparison Between Magnetic Charge Topology and Local Correlation Tracking of Solar Active Regions,” Montana State University REU Research Talks, 2010

**Refereed
Publications**

First Author: 5, Total: 28

“CLEAR III: Detecting Low-Luminosity Active Galactic Nuclei at $0.6 < z < 1.3$ via Spatially-Resolved Hubble Space Telescope Grism Emission Line Ratios,” Bridge, J. S., Holwerda, B. W., Trump, J. R. et al., in preparation for submission to ApJ

“CLEAR II: Evidence for a Fundamental Limit in the Formation Redshifts of the Most Compact Quiescent Galaxies,” Estrada-Carpenter, V. et al. (including Bridge, J. S.), submitted to ApJ

“The Observable Supernova Rate in Galaxy-Galaxy Lensing Systems with the TESS Satellite,” Holwerda, B. W. et al. (including Bridge, J. S.), submitted to ApJ

“Cool ISM Conditions and Environment in $z \sim 0$ Lyman Alpha Emitters,” Puschnig, J. et al. (including Bridge, J. S.), submitted to A&A

“Galaxy and Mass Assembly: A Comparison between Galaxy-Galaxy Lens Searches in KiDS/GAMA,” Knabel, S., Steele, R. L., Holwerda, B. W., Bridge, J. S., and Kelvin, L., submitted to ApJ

“The Sizes of $z \sim 9 - 10$ Galaxies Identified in the BoRG Survey,” Holwerda, B. W., Bridge, J. S., Steele, R. et al., submitted to ApJ

“Default Parallels: JWST Parallel Observations During TSO Primary Observations,” Holwerda, B. W., Fraine, J., Mouawad, N., and Bridge, J. S. 2019, PASP, **131**, 1005

“HETDEX Pilot Survey. VI. [O III] Emitters and Expectations for a Local Sample of Star Forming Galaxies in HETDEX,” Indahl, B. et al. (including Bridge, J. S.) 2019, ApJ, **883**, 114

“The Super Eight Galaxies: Properties of a Sample of Very Bright Galaxies at $7 < z < 8$,” Bridge, J. S., Holwerda, B. W., Stefanon, M. et al. 2019, ApJ, **882**, 42

“The Frequency of Dust Lanes in Edge-on Spiral Galaxies Identified by Galaxy Zoo in KiDS Imaging of GAMA Targets,” Holwerda, B. W. et al. (including Bridge, J. S.) 2019, AJ, **158**, 103

“Star-forming clumps in the Lyman Alpha Reference Sample of galaxies - I. Photometric analysis and clumpiness,” Messa, M. et al. (including Bridge, J. S.) 2019, MNRAS, **487**, 4238

“Unbiased Cosmological Parameter Estimation from Emission Line Surveys with Interlopers,” Grasshorn Gebhardt, H. S., Jeong, D., Awan, H., Bridge, J. S. et al. 2019, ApJ, **876**, 32

“CLEAR I: Ages and Metallicities of Quiescent Galaxies at $1.0 < z < 1.8$ derived from deep Hubble Space Telescope Grism Data,” Estrada-Carpenter, V. et al. (including Bridge, J. S.) 2019, ApJ, **870**, 133

“Substellar and low-mass dwarf identification with near-infrared imaging space observatories,” Holwerda, B. W., Bridge, J. S., Ryan, R. et al. 2018, A&A, **620**, 132

“The bright-end galaxy candidates at $z \sim 9$ from 79 independent HST fields,” Morishita, T. et al. (including Bridge, J. S.) 2018, ApJ, **867**, 2

“The Lyman Alpha Reference Sample IX: Revelations from deep surface photometry,” Micheva, G. et al. (including Bridge, J. S.) 2018, A&A, **615**, 46

“The Lyman-Alpha Reference Sample VIII: Characterizing Lyman-Alpha Scattering in Nearby Galaxies,” Bridge, J. S., Hayes, M., Melinder, J. et al. 2018, ApJ, **852**, 9

“Bayesian Redshift Classification of Emission-Line Galaxies with Photometric Equivalent Widths,” Leung, A. S. et al. (including Bridge, J. S.) 2017, ApJ, **843**, 130

“Disentangling AGN and Star Formation Activity at High Redshift Using Hubble Space Telescope Grism Spectroscopy,” Bridge, J. S., Zeimann, G. R., Trump, J. R. et al. 2016, ApJ, **826**, 2

“Young, Star-forming Galaxies and their Local Counterparts: the Evolving Relationship of Mass-SFR-Metallicity since $z \sim 2.1$,” Grasshorn Gebhardt, H. S. et al. (including Bridge, J. S.) 2016, ApJ, **817**, 10

“HST Emission Line Galaxies at $z \sim 2$: Comparing Physical Properties of Lyman Alpha and Optical Emission Line Selected Galaxies,” Hagen, A. et al. (including Bridge, J. S.) 2016, ApJ, **817**, 1

“The Dust Attenuation Curve versus Stellar Mass for Emission Line Galaxies at $z \sim 2$,” Zeimann, G. R., Ciardullo, R., Gronwall, C., Bridge, J. S. et al. 2015, ApJ, **814**, 2

“The Biases of Optical Line-Ratio Selection for Active Galactic Nuclei, and the Intrinsic Relationship Between Black Hole Accretion and Galaxy Star Formation,” Trump, J. R., Sun, M., Zeimann, G. R., Luck, C., Bridge, J. S. et al. 2015, ApJ, **811**, 26

“Physical and Morphological Properties of [O II] Emitting Galaxies in the HETDEX Pilot Survey,” Bridge J. S., Gronwall, C., Ciardullo, R., et al. 2015, ApJ, **799**, 205

“Hubble Space Telescope Emission Line Galaxies at $z \sim 2$: The Mystery of Neon,” Zeimann G. et al. (including Bridge, J. S.) 2015, ApJ, **798**, 29

“The HETDEX Pilot Survey V: The Physical Origin of Ly α Emitters Probed by Near-infrared Spectroscopy,” Song, M. et al. (including Bridge, J. S.) 2014, ApJ, **791**, 3

“3D-HST Emission Line Galaxies at $z \sim 2$: Discrepancies in the Optical/UV Star Formation Rates,” Zeimann, G. et al. (including Bridge, J. S.) 2014, ApJ, **790**, 113

“Spectral Energy Distribution Fitting of HETDEX Pilot Survey Ly α Emitters in COSMOS and GOODS-N,” Hagen, A., Ciardullo, R., Gronwall, C., Acquaviva, A., Bridge, J. S. et al. 2014, ApJ, **786**, 59

**Non-
Refereed
Publications**

“Morphological Parameters of Galaxies at $z \sim 8$ in the BoRG and CANDELS Surveys,” Kusmic, S., Holwerda, B. W., **Bridge, J.S.**, and Steele, R. L. 2019, RNAAS, **3**, 134

“Astrobites as a Community-led Model for Education, Science Communication, and Accessibility in Astrophysics,” Khullar, G. et al. (including **Bridge, J. S.**) 2019, Astro2020 APC White Paper, arXiv:1907.09496

“The Early Career Perspective on the Coming Decade, Astrophysics Career Paths, and the Decadal Survey Process,” Moravec, E. et al. (including **Bridge, J. S.**) 2019, Astro2020 APC White Paper, arXiv:1907.01676

“Spatially Resolved Observations of the Ultraviolet Attenuation Curve,” Hagen, L., Holwerda, B. W., **Bridge, J. S.** et al. 2019, Astro2020 Science White Paper, [Link](#)

“Large Synoptic Survey Telescope White Paper: The Case for Matching U-band on Deep Drilling Fields,” Holwerda, B. W. et al. (including **Bridge, J. S.**) 2018, LSST White Paper, arXiv:1812.03144

“The Rest-Frame Optical Morphology of Emission Line Galaxies at $2 < z < 3$: Evidence for Inside-Out Galaxy Formation in Low-Mass Galaxies,” Hagen, A. et al. (including **Bridge, J. S.**) 2016, arXiv: 1610.01163