Tabitha Buehler

Associate Professor (Lecturer), Physics & Astronomy

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Education

Ph.D, Physics/Astronomy, Brigham Young University	December 2011
M.S., Physics, Brigham Young University	August 2007
B.S., Physics/Astronomy, Brigham Young University	August 2005

Awards, Grants, Fellowships

Distinguished Teaching Award, University of Utah	December 2021
Nominated for Early Career Teaching Award, U of U	December 2019
University Teaching Grant, University of Utah	March 2019
CSME Faculty Associate	Since January 2019
Nominated for Early Career Teaching Award, U of U	December 2018
HHMI Utah Pathways to STEM Faculty Fellow, U of U CSME	June 2018
College of Science Award for Teaching Excellence, U of U	March 2017
SPIE Education Outreach Grant	January 2013

Teaching-Related Experience

Associate Professor (Lecturer), University of Utah Physics & Astronomy Dept.

- Jul 2017 - Present
- Faculty appointment began Mar 2012
- Assistant Professor (Lecturer) until Jul 2017
- Developing physics and astronomy curricula, demonstrations, learning activities
- Assisting other instructors in Physics Lecture Demonstration area
- Implementing astronomy public education and outreach
- Teaching non-departmental courses for CSME Learning Assistant program
- Teaching non-departmental courses for CSME MSSST program
- Developed planetarium show for use by intro astronomy with Clark Planetarium
- Supervise TAs working with South Physics Observatory Outreach Program

Adjunct Instructor, Utah Valley University Physics Dept.

- Jan 2007 - Dec 2011

- Taught one to two sections of Introductory Astronomy each semester
- Developed astronomy curriculum, demonstrations, learning activities

Planetarium Assistant Director, Brigham Young University
- Sep 2005 - Apr 2008
- Position part of research assistantship
- Programmed with planetarium software
- Developed astronomy curriculum for use in planetarium
- Developed and presented live shows
- Programmed and operated analog and digital star projector systems
- Developed and implemented planetarium outreach program
- Trained faculty and students on use of planetarium

Courses Taught

Introductory Astronomy (10 semesters, Utah Valley University)	2007 - 2011
General Physics I (PHYS 2010)	Spring 2012, 2013, 2021; Fall 2018
General Physics II (PHYS 2020)	Spring 2014, 2016, 2018, 2020; Fall 2021
Physics for Scientists & Engineers II (PHYS 2220)	Fall 2014
The Universe (ASTR/PHYS 1060)	Spring 2015, 2016, 2019; Fall 2020
Astronomy for Teachers (MSSST) (PHYS 6950)	Fall 2015,Summer 2018, 2021
Observational Astronomy (ASTR/PHYS 2060/4060)	Fall 2016-2017, 2019-2021
The Solar System (ASTR/PHYS 1050)	Fall 2019
The Science of Learning (CSME) (SCI 5050)	Spring 2021, Fall 2021

Professional Development

Member of faculty learning community on inclusive teaching	2020
Mentor Development Program, Office of Undergraduate Research	2020
Attending International Learning Assistant Conference	2018, 2021

Invited Talks

W. W. Norton Webinar, “Creating an Active Astro 101 Classroom”	17 Dec 2020
W. W. Norton & Co. Webinar, “Norton Astronomy Coffee Break”	18 Mar 2021

University Service

ACCESS Program Coordinator for Physics & Astronomy	2021-Present
U of U Block U Symposium Judge	28 Apr 2021
Teaching Excellence Committee Member (Physics & Astronomy)	2020-Present
Undergraduate Program Committee Member	2019-2020
Graduate committee member for two MSSST students	2018
College of Science Council Member	2018-2020
Applied for GE designation renewal for ASTR/PHYS 1060	August 2018
Department Learning Assistant Coordinator, Physics & Astronomy	2018-Present
American Indian Science & Engineering Society Faculty Advisor.	2018-Present
Society of Physics Students Faculty Advisor, Physics & Astronomy	2014-2017
Crocker Science Center Committee Member, College of Science	2014-2017
Curriculum Committee Member, Physics & Astronomy	2013-2016
USAC Faculty Advisor, Physics & Astronomy	2013-2016
Astronomy Task Force Committee Member, Physics & Astronomy	2012-Present
College of Science *Science Day* Committee Member	2012-2016
Assisting with Class Lecture Demonstrations, Physics & Astronomy	2012-Present
Public Outreach Committee member, Physics & Astronomy	2012-Present
Undergraduate Research Opportunities Program Application Reviewer	2012-2015

Selected Recent Public Outreach

Utah Science and Engineering Fair Judging (Remote Zoom)	9 Mar 2021
Virtual (Zoom) astronomy presentation to Girl Scouts	23 Jan 2021
Presentation on meteorites to Franklin Discovery Academy	5 Dec 2019
Field trip for ASTR 4060 class to Willard Eccles Observatory	19-21 Oct 2019
Public Event for National Astronomy Day at University of Utah	11 Apr 2019
Science Palooza event for K-12 students at Provo Recreation Center	30 Mar 2019
Physics Demos at FIRST Robotics Challenge, Maverik Center	29 Mar 2019
Total lunar eclipse event, South Physics Observatory, U of U	20 Jan 2019
Hands-on physics activities for elementary school students, U of U	10 Jan 2019

Recent Media Contacts

Utah Chronicle, NASA Perseverance Rover Landing	27 Feb 2021
Deseret News, NASA InSight Lander Outreach Event	26 Nov 2018
@theU, public star parties	19 Oct 2016
Fox 13 TV interview, P&A Pluto Palooza outreach event	14 Jul 2015
Utah Public Radio, Access Utah show, Mars rover landing	8 Aug 2012
Fox 13 TV interview, Mars rover landing outreach event	5 Aug 2012
Salt Lake Tribune Newspaper, Mars rover landing outreach event	4 Aug 2012

Additional Professional Experience

Research Assistant, Brigham Young University Physics & Astronomy Dept.

- Sep 2003-Dec 2011
- Operated telescopes at BYU's West Mountain and Orson Pratt Observatories
- Operated telescopes at Dominion Astrophysical Observatory
- Photometric optical observations, data reduction, photometry
- Spectroscopic optical observations, data reduction
- Wrote grant proposals

Other Service

Paper review for *Journal of the Utah Academy of Sciences, Arts, and Letters*

- Aug 2018

Research Telescope Experience

West Mountain Observatory, 1.0-m

Dominion Astrophysical Observatory, 0.9-m

Dominion Astrophysical Observatory, McKellar 1.2-m

Dominion Astrophysical Observatory, Plaskett 1.8-m

Refereed Journal Articles

Pancoast, A., Skielboe, A., Pei, L., Bennert, V. N., Sand, D. J., Barth, A. J., Joner, M. D., Thorman, S., Schmidt, T., Treu, T., Brewer, B. J., Li, W., **Buehler, T.**, and 7 more coauthors. "The Lick AGN Monitoring Project 2011: Photometric Light Curves." 2019, Astrophysical Journal

Williams, P. R., Pancoast, A., Treu, T., Brewer, B. J., Barth, A. J., Bennert, V. N., **Buehler, T.**, and 18 more coauthors. "The Lick AGN Monitoring Project 2011: Dynamical Modeling of the Broad-line Region.", 2018, Astrophysical Journal, 866, 75.

Barth, A. J., Pancoast, A., Bennert, V. N., Brewer, B. J., Canalizo, G., Filippenko, A. V., Gates, E. L., Greene, J. E., Li, W., Malkan, M. A., Sand, D. J., Stern, D., Treu, T., Woo, J-H., Assef, R. J., Bae, H-J, **Buehler, T.**, and 12 more coauthors. "The Lick AGN Monitoring Project 2011: Fe II Reverberation from the Outer Broad-line Region", 2013, Astrophysical Journal, 769, 128.

Pancoast, A., Brewer, B. J., Treu, T., Barth, A. J., Bennert, V. N., Canalizo, G., Filippenko, A. B., Gates, E. L., Greene, J. E., Li, W., Malkan, M. A., Sand, D. J., Starn, D., Woo, J.-H., Assef, R. J., Bae, H.-J., **Buehler, T.**, and 19 more coauthors.

"The Lick AGN Monitoring Project 2011: Dynamical Modeling of the Broad-line Region in Mrk 50:, 2012, Astrophysical Journal, 754, 49.

Barth, A. J., Pancoast, A., Thorman, S. J., Bennert, V. N., Sand, D. J., Li, W., Canalizo, G., Filippenko, A. V., Gates, E. L., Greene, J. E., Malkan, M. A., Starn, D., Treu, T., Woo, J.-H., Assef, R. J., Bae, H.-J., Brewer, B. J., **Buehler, T**., and 32 more coauthors, "The Lick AGN Monitoring Project 2011: Reverberation Mapping of Markarian 50.", 2011, Astrophysical Journal, 743L, 4B.

Bush (Buehler), T. C., and Hintz, E. G., "Rotational Velocity Determinations for 118 δ Scuti Variables", 2008, Astronomical Journal, 136, 1061-1066.

Hintz, E. G., Rose, M. B., **Bush (Buehler), T. C.**, and Maxwell, A. A., "Establishing Observational Baselines for Two Medium Amplitude δ Scuti Variables: V1438 Aquilae and V966 Herculis", 2006, Astronomical Journal, 132, 393-400.

Hintz, E. G., **Bush (Buehler), T. C.**, and Rose, M. B., "Monitoring Three Less Studied δ Scuti Variables: GW Ursae Majoris, BO Lyncis, and AN Lyncis", 2005, Astronomical Journal, 130, 2876-2883.

Professional Meeting Abstracts

Bush (Buehler), T. C., and Hintz, E. G., "Rotational Velocity Determinations for 118 δ Scuti Variables", 2009, American Astronomical Society, 41, 301

Bush (Buehler), T. C., "Rotational Velocities of delta Scuti Stars", 2007, American Astronomical Society, 210, May 2007

Moody, J. W., Joner, M. D., Hintz, E. G., Lawler, J., **Bush (Buehler), T. C.**, Moncrieff, K., Leishman, T., "General Astronomy Education Using the BYU 39' Planetarium", 2007, American Astronomical Society, 210, May 2007

Bush (Buehler), T. C., and Hintz, E. G., "Rotational Velocities of delta Scuti Variable Stars", 2006, American Astronomical Society, 209, January 2007

Bush (Buehler), T. C., Shepherd, M., and Leishman, T., "Acoustically Enabling a Planetarium to Function as a Classroom", 2005, American Astronomical Society, 207, 6709B

Bush (Buehler), T. C., and Hintz, E. G., "Photometric and Spectroscopic Observations of AN Lyncis, BO Lyncis, and GW Ursae Majoris", 2004, American Astronomical Society, 205, 541