

# SANLYN R. BUXNER

Planetary Science Institute and the University of Arizona  
Tucson, AZ, USA

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## Education:

PhD	University of Arizona - Science Education	2010
MA	University of Arizona - Teaching and Teacher Education	2006
BA	University of Colorado, Boulder	2000
	Major: Molecular, Cellular, and Developmental Biology	
	Minor: Biochemistry	

## Professional Experience:

- Associate Research Professor - -- Department of Teaching, Learning and Sociocultural Studies, University of Arizona, Tucson, AZ, 2020– present
- Senior Research Scientist and Senior Education and Communication Specialist, Planetary Science Institute, Tucson, AZ, 2019- present
- Assistant Research Professor – Department of Teaching, Learning and Sociocultural Studies, University of Arizona, Tucson, AZ, 2013 – 2020
- Research Associate - Department of Teaching and Teacher Education and Department of Astronomy, University of Arizona, Tucson, AZ, 2010 – 2013
- Research Scientist and Education and Communication Specialist, Planetary Science Institute, Tucson, AZ, 2010- 2019
- Graduate Research Assistant/Associate – Departments of Molecular and Cellular Biology/ Chemistry and Biochemistry, Astronomy, Teaching, Learning, and Sociocultural Studies, and Planetary Sciences, University of Arizona, Tucson, AZ, 2004-2010
- Education Specialist/Lecturer/Senior Technician, Fiske Planetarium and Sommers - Bausch Observatory, University of Colorado, Boulder, CO – 2001 – 2004

## Honors:

Named Asteroid: 16702 Buxner; 1995 DZ8	2018
NASA Group Achievement Award, LRO Education and Public Outreach Team	2014, 2016
40 under 40 in 2013, Tucson Hispanic Chamber of Commerce	2013
NASA Group Achievement Award, Phoenix Project Payload Team	2009

## Professional Society Membership:

American Geophysical Union  
American Astronomical Society & Division for Planetary Sciences  
American Education Research Association  
American Evaluation Association  
Astronomical Society of the Pacific  
National Association for Research on Science Teaching

## Research Experience:

Sanlyn Buxner's research is in science education research in the areas of undergraduate and graduate education, research experiences for K-12 teachers, and informal learning experiences. Her research is

highly collaborative to include undergraduate and graduate students and collaborators from numerous institutions. Her research interests are in scientific and quantitative literacy, the intersection of growth mindset and research, and empowering students and teachers to engage in research practices. She has contributed to over 30 peer reviewed publications, dozens of peer reviewed conference papers and over a 100 non peer reviewed conference presentations. Additionally, she has edited three books in astronomy education and contributed numerous book chapters in science education.

### Select Publications

- Buxner, S. R.**, Fitzgerald, M. T., & Freed, R. M. (2021). Amateur Astronomy: Engaging the Public in Astronomy Through Exploration, Outreach, and Research. In A. Kaminski (Ed) *Space Science and Public Engagement*, 143-168, Elsevier.
- Impey, C., Formanek, M., **Buxner, S.**, & Wenger, M. (2021). Science knowledge and attitudes of lifelong learners in an astronomy massive open online course. *International Journal of Science Education, Part B*, 1-17.
- Nieberding, M., **Buxner, S.**, Elfring, L., & Impey, C. (2021). Undergraduate student conceptions of DNA and their understanding of basic science. *Journal of College Science Teaching*, 50(5).
- Perera, V., Mead, C., van der Hoeven Kraft, K. J., Stanley, S., Angappan, R., MacKenzie, S., ... & **Buxner, S.** (2021). Considering intergroup emotions to improve diversity and inclusion in the geosciences. *Journal of Geoscience Education*, 1-10.
- Davis, L. F., Ramírez-Andreotta, M. D., & **Buxner, S. R.** (2020). Engaging Diverse Citizen Scientists for Environmental Health: Recommendations from Participants and Promotoras. *Citizen Science: Theory and Practice*, 5(1).
- Impey, C.D. & **Buxner, S.** (Eds) (2019). *Astronomy Education, Volume 1; Evidence-based instruction for introductory courses*. IOP Publishing.
- Buxner, S. R.**, Shore, L. & Jensen, J. B. (Eds.) (2019). *Celebrating the 2017 Great American Eclipse: Lessons Learned from the Path of Totality* (Vol. 516). San Francisco, CA: Astronomical Society of the Pacific.
- Fitzgerald, M., James, C.R., **Buxner, S.**, White, S. (Eds.) (2018). *Robotic Telescopes, Student Research and Education (RTSRE) Proceedings* (Vol. 1): ISBN 978-0-6483996-0-5 /
- Krim, J.S., Coté, L.E., Schwartz, R.S., Stone, E.M., Cleaves, J.J., Barry, K.J., Burgess, W., **Buxner, S.R.**, Gerton, J.M., Horvath, L. and Keller, J.M., (2019). Models and impacts of science research experiences: A review of the literature of CUREs, UREs, and TREs. *CBE—Life Sciences Education*, 18(4), p.ar65.
- Formanek, M., **Buxner, S.**, Impey, C., & Wenger, M. (2019). Relationship between learners' motivation and course engagement in an astronomy massive open online course. *Physical Review Physics Education Research*, 15(2), 020140.
- Simon, M. N., Prather, E. E., **Buxner, S. R.**, & Impey, C. D. (2019). The development and validation of the Planet Formation Concept Inventory. *International Journal of Science Education*, 41(17), 2448-2464.
- Mead, C., **Buxner, S.**, Bruce, G., Taylor, W., Semken, S., & Anbar, A. D. (2019). Immersive, interactive virtual field trips promote science learning. *Journal of Geoscience Education*, 1-12.
- Simon, M. N., **Buxner, S.**, & Impey, C. (2018). A survey and analysis of college students' understanding of planet formation before instruction. *Astrobiology*, 18(12), 1594-1610.
- Buxner, S. R.**, Impey, C. D., Romine, J., & Nieberding, M. (2018). Linking introductory astronomy students' basic science knowledge, beliefs, attitudes, sources of information, and information literacy. *Physical Review Physics Education Research*.
- Perera, V., Mead, C., **Buxner, S.**, Lopatto, D., Horodyskyj, L., Semken, S., & Anbar, A. D. (2017). Students in Fully Online Programs Report More Positive Attitudes toward Science Than Students in Traditional, In-Person Programs. *CBE-Life Sciences Education*, 16(4), ar60.
- Follette, K. B., **Buxner, S.**, Dokter, E., McCarthy, D. W., Vezino, B., Brock, L., & Prather, E. (2017). The Quantitative Reasoning for College Science (QuaRCS) Assessment 2: Demographic, academic and attitudinal variables as predictors of quantitative ability. *Numeracy*, 10(1), Article 5. DOI: <http://dx.doi.org/10.5038/1936-4660.8.2.2>
- Buxner, S. R.** (2014). Exploring how research experiences for teachers changes their understandings of the nature of science and scientific inquiry. *Journal of Astronomy & Earth Sciences Education*, 1(1), 53–68.