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~~ EDUCATION AND WORK EXPERIENCE ~~

EDUCATION

- 2006** **University of Arizona, Tucson, AZ**
Ph.D., Teaching and Teacher Education (minor in Astronomy)
Dissertation: *Development of a Concept Inventory to Assess Students' Understanding and Reasoning Difficulties About the Properties and Formation of Stars*
Committee: Dr. Bruce Johnson (Co-Chair), Dr. Edward E. Prather (Co-Chair), Dr. Timothy F. Slater
- 1997** **University of Georgia, Athens, GA**
M.Ed., Science Education
- 1994** **Agnes Scott College, Decatur, GA**
B.A., Astrophysics (minor in Mathematics)
Senior Independent Study Project: *Image Processing and Deconvolution of Astronomical Data*

PROFESSIONAL EXPERIENCE

- 2013–present** **Temple University (Philadelphia, PA)**
Associate Professor (with tenure), Department of Teaching and Learning (TEAL), July 2021–present
Assistant Professor (tenure track), July 2017–June 2021
Co-Director, TUteach, March 2014–June 2015
Associate Professor Teaching/Instructional (non-tenure track), July 2013–June 2017
Conduct research on science education, specifically in the areas of student understanding and affect in astronomy and science teacher education. Teach undergraduate courses in TUteach, a teacher preparation program for science and mathematics majors, and graduate teacher certification. Mentor doctoral students, advise graduate students in science education.
- 2006–2013** **University of Nevada, Las Vegas (Las Vegas, NV)**
Associate Professor (with tenure), Department of Teaching and Learning (T&L), July 2012–June 2013
Co-Director for Education, Center for Mathematics, Science, and Engineering Education (CMSEE), January 2012–June 2013
Associate Director, CMSEE, May 2011–January 2012
Assistant Professor (tenure track), T&L (fmrly. Curriculum & Instruction), August 2006–June 2012
Conducted research on science education, specifically in the areas of student misconceptions in astronomy and science teacher professional development. Taught

undergraduate and graduate courses in science education. Mentored doctoral students, advised students in science education graduate programs.

OTHER RELEVANT EXPERIENCE

- 2005–2006** **National Optical Astronomy Observatory / University of Arizona (Tucson, AZ)**
Graduate Fellow, Collaboration to Advance Teaching Technology and Science (CATTs) Program [an NSF GK-12 Program]
 Supported local middle school teachers in the implementation of astronomy curriculum. Assisted with development of *Hands-On Optics* (NSF ESI 0307949) curriculum and training of participating teachers and optics volunteer partners.
- Summers 2005, 2004** **Northern Arizona University (Flagstaff, AZ)**
Professional Development Intern, Center for Science Teaching and Learning
 Assisted with design, logistics, and delivery of professional development workshops (Science Leadership Academy, GEMS, FOSS, and Secondary Curriculum Showcase) for inservice teachers.
- Summers 2002, 2001** **Montana Space Grant Consortium (Bozeman, MT)**
Program Director, “2001: A Montana Space Odyssey” and “2002: A Montana Space Odyssey”
 Designed, organized, and implemented a two-week in-residence workshop for 16 eighth- and ninth-grade students from across Montana. Produced evaluation report for Principal Investigators.
- 2001-2005** **University of Arizona (Tucson, AZ)**
Teaching and Research Assistant, Department of Astronomy
 Assisted with introductory astronomy courses of 100-300 students; conducted literature reviews, collected data, analyzed data, and wrote papers associated with multiple astronomy education research studies.
Teaching Assistant, Department of Teaching and Teacher Education
 Assisted with graduate-level science teaching methods courses.
- 2000–2001** **Montana State University (Bozeman, MT)**
Evaluation Specialist, CAPER Team, Department of Physics
 Conducted project evaluation for the *Princeton Earth Physics Project* via interviews with and a survey of teacher-participants. Produced evaluation reports for Principal Investigator.
- 1997–2000** **Campbell County High School (Gillette, WY)**
Secondary Science Teacher
 Taught physics, chemistry, physical science, and environmental chemistry courses for grades 10-12. Extracurricular duties included Junior Class Sponsor, Future Educators of America Advisor, Evening Librarian, and ACT Review Coach.
- Summers 1999, 1993, 1992** **University of Wyoming (Laramie, WY)**
Research Assistant, Department of Physics and Astronomy
 1999: Conducted research on the dwarf nova BV Puppis as part of the NSF Research Experiences for Teachers (RET) program.
 1993 and 1992: Conducted research on barred Magellanic spiral galaxies as part of the NSF Research Experiences for Undergraduates (REU) program.

- 1995–1997 Agnes Scott College (Decatur, GA)**
Planetarium Coordinator, Bradley Observatory, Department of Physics & Astronomy
 Conducted planetarium shows for monthly open houses and special groups.
- 1991–1994 Agnes Scott College (Decatur, GA)**
Observatory Assistant, Bradley Observatory, Department of Physics & Astronomy
 Assisted with astronomy lab courses (AST 120/121) and public open houses, including planetarium shows and observing with campus 8” and 14” telescopes.

PROFESSIONAL CERTIFICATIONS

- 1997–2007 **Georgia Educator Certificate #318589**
 Science (7-12), valid 06/14/1997 to 06/30/2007
- 1997–2002 **Wyoming Teaching Certificate**
 Science Comprehensive, valid 08/01/1997 to 08/01/2002

~~ FELLOWSHIPS, AWARDS, AND HONORS ~~

- 2019 *Homer L. Dodge Citation for Distinguished Service to AAPT*, American Association of Physics Teachers
- 2014–2015, 2015–2016 Nominee, *Undergraduate Teaching Award*, College of Education, Temple University
- 2007 Finalist, *Outstanding Doctoral Research Award*, National Association for Research in Science Teaching
- 2005–2006 *Collaboration to Advance Teaching Technology and Science (CATTS) Fellowship*, an NSF GK-12 Teaching Fellowship, College of Science, University of Arizona (\$30,000 stipend plus full tuition and fees)
- 2003 *Outstanding Teaching Assistant*, American Association of Physics Teachers

~~ SCHOLARSHIP ~~

REFEREED PUBLICATIONS¹

Bailey, J. M., ^DJamani, S., Klavon, T. G., ^DJaffe, J. B., & ^MMohan, S. (in press). Climate crisis learning through scaffolded instructional tools. Accepted for *The Educational and Developmental Psychologist*, Special Issue: Climate Crisis, on 09/26/2021. Expected doi:10.1080/20590776.2021.1997065

^MProtopapa-Henkel, J., & **Bailey, J. M.** (in press). Making sense of sickle cell disease. Accepted for *The Science Teacher* on 01/23/2021 for Nov/Dec 2021 issue.

¹ ^D indicates a doctoral, ^M a Masters, ^U an undergraduate, or ^H a high school student at the start of the project

Lombardi, D., Shipley, T. F., Astronomy Team (**Bailey, J. M.**, Bretones, P. S., Prather, E. E.), Biology Team (Ballen, C., J., Knight, J. K., Smith, M. K.), Chemistry Team (Stowe, R. L., Cooper, M. M.), Engineering Team (Prince, M.), Geography Team (Atit, K., Uttal, D. H.), Geoscience Team (LaDue, N. D., McNeal, P. M., Ryker, K., St. John, K., van der Hoeven Kraft, K. J.), & Physics Team (Dockett, J. L.). (2021). The curious construct of active learning. *Psychological Science in the Public Interest*, 22(1), 8–43.

<https://doi.org/10.1177/1529100620973974>

^URodriguez, G. E., ^UShoda, Z., ^UAssour, H. R., ^UFischer, V., & **Bailey, J. M.** (2021). The survival games: Linking science and science fiction to better understand the realities of biomes, fitness, and climate change. *The Science Teacher*, 88(3), 18–22. Available online at <https://www.nsta.org/science-teacher/science-teacher-januaryfebruary-2021/survival-games>

Bailey, J. M., ^DKlavon, T. G., & ^DDobaria, A. (2020). The Origins build-a-MEL: Introducing a scaffold to explore the origins of the Universe. *The Earth Scientist*, 36(3), 7–12. Available online at <https://www.nestanet.org/cms/sites/default/files/journal/Fall20.pdf>

Colfax, E., Matewos, A., & **Bailey, J. M.** (2020). Teaching Earth and environmental science using Model-Evidence Link Diagrams. *The Earth Scientist*, 36(3), 31–35. Available online at <https://www.nestanet.org/cms/sites/default/files/journal/Fall20.pdf>

Governor, D., Strickland, K., & **Bailey, J. M.** (2020). Climate changes of the past: Engaging in evidence-based argumentation. *The Earth Scientist*, 36(3), 13–17. Available online at <https://www.nestanet.org/cms/sites/default/files/journal/Fall20.pdf>

Holzer, M., Roemmele, C., & **Bailey, J. M.** (2020). Freshwater resources: The challenges of quantity and quality. *The Earth Scientist*, 36(3), 18–21. Available online at <https://www.nestanet.org/cms/sites/default/files/journal/Fall20.pdf>

Lombardi, D., ^DUslu, B., & **Bailey, J. M.** (2020). Extreme weather events and the climate crisis: What is the connection? *The Earth Scientist*, 36(3), 22–26. Available online at <https://www.nestanet.org/cms/sites/default/files/journal/Fall20.pdf>

Roemmele, C., Holzer, M., & **Bailey, J. M.** (2020). Assessing and applying students' understanding of the scientific practices and crosscutting concepts. *The Earth Scientist*, 36(3), 27–30. Available online at <https://www.nestanet.org/cms/sites/default/files/journal/Fall20.pdf>

Vieyra, R. E., **Bailey, J. M.**, Lopez, R. E., & McAuliffe, C. (2020). Integration of Earth and space science contexts for teaching physics. *Physics Education*, 55(5), 055026. <https://doi.org/10.1088/1361-6552/ab9f92>

^DMaher, P. A., **Bailey, J. M.**, & Schrader, P. G. (2019). Practical implications for extending planetarium instruction using motion sensor devices and virtual reality headsets. *Planetarium*, 48(4), 22–28,38. <https://cdn.ymaws.com/www.ips-planetarium.org/resource/resmgr/planetarium/201912planetarium.pdf>

^DChung-Parsons, R., & **Bailey, J. M.** (2019). The hierarchical (not fluid) nature of preservice secondary science teachers' perceptions of their science teacher identity. *Teaching and Teacher Education*, 78, 39–48. <https://doi.org/10.1016/j.tate.2018.11.007>

^DMaher, P. A., **Bailey, J. M.**, & Tucka, A. M. (2018). Teaching process skills to pre-engineers using situated learning—a case study. *International Journal of Engineering Pedagogy*, 8(5), 121–147. <https://doi.org/10.3991/ijep.v8i5.9036>

Lombardi, D., **Bailey, J. M.**, ^UBickel, E. S., & ^DBurrell, S. (2018). Scaffolding scientific thinking: Students' evaluations and judgments during Earth science knowledge construction. *Contemporary Educational Psychology*, 54, 184–198. <https://doi.org/10.1016/j.cedpsych.2018.06.008>

Coble, K., ^MConlon, M., & **Bailey, J. M.** (2018). Investigating undergraduate students' ideas about the curvature of the Universe. *Physical Review Physics Education Research* [Focused Collection on Astronomy Education Research], 14(1), 010144. doi: 10.1103/PhysRevPhysEducRes.14.010144. <https://journals.aps.org/prper/abstract/10.1103/PhysRevPhysEducRes.14.010144>

Lombardi, D., ^UBickel, E. S., **Bailey, J. M.**, & ^DBurrell, S. (2018). High school students' evaluations, plausibility (re) appraisals, and knowledge about topics in Earth science. *Science Education*, 102(1), 153–177. <https://doi.org/10.1002/sce.21315>

Bailey, J. M., Lombardi, D., ^DCordova, J. R., & Sinatra, G. M. (2017). Meeting students halfway: Increasing self-efficacy and promoting knowledge change in astronomy. *Physical Review Physics Education Research*, 13(2), 020140. doi: 10.1103/PhysRevPhysEducRes.13.020140. <https://journals.aps.org/prper/abstract/10.1103/PhysRevPhysEducRes.13.020140>

^MConlon, M., Coble, K., **Bailey, J. M.**, & Cominsky, L. R. (2017). Investigating student ideas about the fate of the Universe. *Physical Review Physics Education Research*, 13(2), 020128. doi: 10.1103/PhysRevPhysEducRes.13.020128. <https://journals.aps.org/prper/abstract/10.1103/PhysRevPhysEducRes.13.020128>

Bailey, J. M., Girtain, C., & Lombardi, D. (2016). Understanding the formation of the Earth's Moon. *The Earth Scientist*, 32(2), 11–16. <https://www.nestanet.org/cms/sites/default/files/journal/Summer16.pdf>

Holzer, M. A., Lombardi, D., & **Bailey, J. M.** (2016). Wetlands: Good or bad? Evaluating competing models with a MEL diagram. *The Earth Scientist*, 32(2), 17–22. <https://www.nestanet.org/cms/sites/default/files/journal/Summer16.pdf>

Hopkins, J. D., Crones, P., ^DBurrell, S., **Bailey, J. M.**, & Lombardi, D. (2016). Using the Model Evidence Link (MEL) diagram to evaluate the connections between fracking and earthquakes. *The Earth Scientist*, 32(2), 23–30. <https://www.nestanet.org/cms/sites/default/files/journal/Summer16.pdf>

Bailey, J. M., & Lombardi, D. (2015). Blazing the trail for astronomy education research. *Journal of Astronomy & Earth Science Education*, 2(2), 77–87. <http://dx.doi.org/10.19030/jaese.v2i2.9512>

^DRehmat, A. P., & **Bailey, J. M.** (2014). Technology integration into a science classroom: Preservice teachers' perceptions. *Journal of Science Education and Technology*, 23(6), 744–755. <https://doi.org/10.1007/s10956-014-9507-7>

^DMaher, P. A., **Bailey, J. M.**, Etheridge, D. A., & Warby, D. B. (2013). Preservice teachers' beliefs and confidence after working with STEM faculty mentors: An exploratory study [Special issue]. *Teacher Education & Practice*, 26(2), 266–284.

Trouille, L. E., Coble, K., ^MCochran, G. L., **Bailey, J. M.**, ^UCamarillo, C., ^UNickerson, M. D., & Cominsky, L. R. (2013). Investigating student ideas about cosmology III: Big Bang theory, expansion, age, and history of the Universe. *Astronomy Education Review*, 12(1), 010110. <http://dx.doi.org/10.3847/AER2013016>

Coble, K., ^UNickerson, M. D., **Bailey, J. M.**, Trouille, L. E., ^MCochran, G. L., ^UCamarillo, C., & Cominsky, L. R. (2013). Investigating student ideas about cosmology II: Composition of the Universe. *Astronomy Education Review*, 12(1), 010111. <http://dx.doi.org/10.3847/AER2012039>

Coble, K., ^UCamarillo, C., Trouille, L. E., **Bailey, J. M.**, ^MCochran, G. L., ^UNickerson, M. D., & Cominsky, L. R. (2013). Investigating student ideas about cosmology I: Distances and structure. *Astronomy Education Review*, 12(1), 010102. <http://dx.doi.org/10.3847/AER2012038>

Bailey, J. M., Coble, K., ^MCochran, G. L., ^MLarrieu, D. M., ^MSanchez, R., & Cominsky, L. R. (2012). A multi-institutional investigation of students' pre-instructional ideas about cosmology. *Astronomy Education Review*, 11(1), 010302. <http://dx.doi.org/10.3847/AER2012029>

Bailey, J. M., & Nagamine, K. (2012). Experiencing conceptual change about teaching: A case study from astronomy. *American Journal of Physics*, 80(6), 542–551. <https://doi.org/10.1119/1.3699064>

Bailey, J. M., Johnson, B., Prather, E. E., & Slater, T. F. (2012). Development and validation of the Star Properties Concept Inventory. *International Journal of Science Education*, 34(14), 2257–2286. <https://doi.org/10.1080/09500693.2011.589869>

^DWallace, C. S., & **Bailey, J. M.** (2010). Do concept inventories really measure anything? *Astronomy Education Review*, 9(1), 010116. <http://dx.doi.org/10.3847/AER2010024>

^MCarver, A., & **Bailey, J. M.** (2010). Unit pages: Differentiation for 200 students. *Science Scope*, 33(6), 12–17.

Bailey, J. M., Prather, E. E., Johnson, B., & Slater, T. F. (2009). College students' preinstructional ideas about stars and star formation. *Astronomy Education Review*, 8(1), 010110. <http://dx.doi.org/10.3847/AER2009038>

Bailey, J. M. (2009). Concept inventories for ASTRO 101. *The Physics Teacher*, 47(7), 439–441. <https://doi.org/10.1119/1.3225503>

Bailey, J. M. (2007). Development of a concept inventory to assess students' understanding and reasoning difficulties about the properties and formation of stars. *Astronomy Education Review*, 6(2), 133–139. <http://dx.doi.org/10.3847/AER2007028>

Bruning, D., **Bailey, J. M.**, & Brissenden, G. (2007). SABER: The searchable annotated bibliography of education research in astronomy. *Astronomy Education Review*, 5(2), 177–181. <http://dx.doi.org/10.3847/AER2006025>

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Bruning, D., **Bailey, J. M.**, & Brissenden, G. (2007). SABER cuts to the heart of research. *Planetarian*, 36(2), 17–18.

Bailey, J. M., & Slater, T. F. (2005). Resource letter AER-1: Astronomy education research, *American Journal of Physics*, 73(8), 677–685. <https://doi.org/10.1119/1.1949630>

Bailey, J. M., & Slater, T. F. (2005). Finding the forest amid the trees: Tools for evaluating astronomy education and public outreach projects, *Astronomy Education Review*, 3(2), 47–60. Available online at <http://dx.doi.org/10.3847/AER2004016>

Bailey, J. M., Prather, E. E., & Slater, T. F. (2004). Reflecting on the history of astronomy education research to plan for the future, *Advances in Space Research [Special Issue on Space Science Education and Promoting North-South Partnership in Space Research]*, 34(10), 2136–2144. <https://doi.org/10.1016/j.asr.2003.01.038>

Prather, E. E., Slater, T. F., Adams, J. P., **Bailey, J. M.**, Jones, L. V., & Dostal, J. A. (2004). Research on a Lecture-Tutorial approach to teaching introductory astronomy for nonscience majors, *Astronomy Education Review*, 3(2), 122–136. <http://dx.doi.org/10.3847/AER2004019>

Bailey, J. M., & Slater, T. F. (2003). A review of astronomy education research, *Astronomy Education Review*, 2(2), 20–45. <http://dx.doi.org/10.3847/AER2003015>

Bailey, J. M., & Slater, T. F. (2002). Impact of national standards on research equipment in the classroom, *The Physics Teacher*, 40(2), 78–80. <https://doi.org/10.1119/1.1457309>

Bianchini, A., Skidmore, W., **Bailey, J. M.**, Howell, S., & Canterna, R. (2001). The dwarf nova binary system BV Puppis, *Astronomy & Astrophysics*, 367(2), 588–596. <https://doi.org/10.1051/0004-6361:20000446>

Bailey, J. M. (2000). On the nature of moonquakes, *The Physics Teacher*, 38(9), 522–523. <https://doi.org/10.1119/1.1341938>

MANUSCRIPTS AND COMMISSIONED PAPERS

^DDobaria, A., **Bailey, J. M.**, Klavon, T. G., & Lombardi, D. (2021-in review). Students' scientific evaluation of astronomical origins. Submitted to *Astronomy Education Journal* on 10/06/2021.

^MMcLaughlin, J. A., & **Bailey, J. M.** (2021-in review). Students need more practice with spatial thinking in geoscience education: A systematic review of the literature. Submitted to *Studies in Science Education* on 08/14/2020; reviews received 12/02/2020; revision submitted 03/01/2021; reviews received 06/10/2021; revision submitted 10/01/2021.

^MProtopapa-Henkel, J., ^MPilarski, R., Kelley, S., & **Bailey, J. M.** (2021-in review). Math and science museum project. Submitted to *The Science Teacher* on 08/13/2021.

Lombardi, D., & **Bailey, J. M.** (2021-in review). Science teaching and learning. Invited chapter for P. Schutz & K. R. Muis (Eds.), *Handbook of Educational Psychology* (4th Ed.). Submitted to the editors on 07/28/2020; reviews received 12/04/2020; revision submitted 07/23/2021.

Fukawa-Connelly, T., ^DKelley, S., Gann, A. F., **Bailey, J. M.**, Newton, K., & Scallon, A. (2021-in review). Preservice teachers' reflective practice favors shorter, informal processes. Submitted to *Teaching and Teacher Education: Leadership and Professional Development* on 07/08/2021.

^DChung-Parsons, R., & **Bailey, J. M.** (2020-in revision). Unearthing preservice secondary science teachers' identity development: The juxtaposition of multiple identities. Submitted to *Journal of Science Teacher Education* on 06/23/2020; reviews received 09/27/2020.

Bailey, J. M., ^UBulman, C., & Lombardi, D. (2018-in preparation). PRT paper. To be submitted to *Research in Science Education*.

Bailey, J. M., & ^DLuccioni, N. A. (2018-in preparation). Self-efficacy of secondary science and mathematics student teachers. To be submitted to *Journal of Science Teacher Education*.

^DBurrell, S., **Bailey, J. M.**, ^UBickel, E. S., & Lombardi, D. (2018-in preparation). High school students' evaluations about pro and con recycling positions. To be submitted to *International Journal of Science Education*.

^DChung-Parsons, R., & **Bailey, J. M.** (2018-in preparation). A possible mechanism for variations in preservice science teacher identity development. To be submitted to *Journal of Teacher Education*.

Bailey, J. M., Prather, E. E., & Bretones, P. S. (2019). PSPI white paper: Active learning in undergraduate astronomy. Commissioned paper submitted to D. Lombardi & T. F. Shipley for use in article on active learning for *Psychological Science for the Public Interest*.

Bailey, J. M. (2011). Astronomy education research: Developmental history of the field and summary of the literature. Commissioned paper for the National Research Council Board on Science Education's Committee on the Status, Contributions, and Future Directions of Discipline Based Education Research.

BOOKS

Coble, K., McLin, K., **Bailey, J. M.**, Metevier, A. J., Peruta, C. C., & Cominsky, L. (2015). *The big ideas in cosmology* [Electronic]. Dubuque, IA: Kendall Hunt Publishers / Great River Technology, Inc. (ISBNs 978-1-61549-193-3, 978-1-61549-798-0, 978-1-61549-809-3)

Slater, S. J., Slater, T. F., Heyer, I., & **Bailey, J. M.** (2015). *Discipline-based education research: A guide for scientists* (2nd ed.). Hilo, HI: Pono Publishing. (ISBN-10 1-5150-2456-3 / ISBN-13 978-1-51502-456-9)

Slater, S. J., Slater, T. F., & **Bailey, J. M.** (2011). *Discipline-based education research: A scientist's guide*. (W.H. Freeman Science Teaching Series, W. B. Wood, Ed.). New York, NY: W.H. Freeman and Company. (ISBN-10 1-4292-6586-8 / ISBN-13 978-1-4292-6586-7)

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Bailey, J. M., Slater, S. J., & Slater, T. F. (2010). *Conducting astronomy education research: A primer*. New York, NY: W.H. Freeman and Company. (ISBN-10 1-4292-6409-8 / ISBN-13 978-1-4292-6409-9)

BOOK CONTRIBUTIONS

Bailey, J. M. (2021). Quantitative research methods in astronomy education research. In A. Bhandare, G. Giobbi, C. Larkin, R. Sanderson, N. Deacon, & E. Penteado (Eds.), *Proceedings for the 3rd Shaw-LAU Workshop on Astronomy for Education* (pp. 36–38). International Astronomical Union. <https://owncloud.gwdg.de/index.php/s/OkLvwduC0DSn06x>

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Lopez, R. E., Ambrose, B. S., **Bailey, J. M.**, Benson, A. G., Cid, X. C., da Costa Jr., E., Cuntz, M., Jaafari, F., Vieyra, R. E., & Willoughby, S. D. (2020). Space science as a context for science education. *INTED2020 Proceedings* (pp. 516–522). <https://library.iated.org/view/LOPEZ2020SPA>

Lombardi, D., & **Bailey, J. M.** (2020). Science strategy interventions. Invited chapter in D. L. Dinsmore, L. K. Fryer, & M. M. Parkinson (Eds.), *Handbook of strategies and strategic processing: Conceptualization, intervention, measurement, and analysis* (pp. 177–194). New York, NY: Routledge.

Bailey, J. M. (2020). Measuring students' understanding in astronomy with research-based assessment tools. Invited chapter in C. Impey & S. R. Buxner (Eds.), *Astronomy education, volume 1: Evidence based instruction for introductory courses* (pp. 10-1–10-19). Bristol, UK: IOP Publishing.
<https://doi.org/10.1088/2514-3433/ab2b42>

^DAdibelli-Sahin, E., & **Bailey, J. M.** (2017). Exploring the factors contributing to preservice elementary teachers' epistemological worldviews about teaching science. In G. Schraw, J. L. Brownlee, L. Olafson, and M. Vandervelt (Eds.), *Teachers' personal epistemologies: Evolving models for transforming practice* (pp. 291–321). Charlotte, NC: Information Age Press. (ISBNs: Paperback: 978-1-68123-948-4; Hardcover: 978-1-68123-949-1; E-Book: 978-1-68123-950-7)

McLin, K. M., Coble, K., Metevier, A. J., **Bailey, J. M.**, & Cominsky, L. R. (2013). Using the big ideas in cosmology to teach college students. In J. Barnes, C. Shupla, J. G. Manning, and M. G. Gibbs (Eds.), *Communicating science*, Vol. 473 (pp. 109–116). San Francisco, CA: Astronomical Society of the Pacific. (ISBN 978-1-58381-830-5)

Coble, K., Cominsky, L. R., McLin, K. M., Metevier, A. J., & **Bailey, J. M.** (2012). Using the big ideas in cosmology to teach college students. In J. B. Jensen, J. G. Manning, M. G. Gibbs, and D. Daou (Eds.), *Connecting people to science*, Vol. 457 (pp. 49–58). San Francisco, CA: Astronomical Society of the Pacific. (ISBN 978-1-58381-796-4)

Bailey, J. M., & Keller, J. M. (2011). Using concept inventories to gauge student understanding in astronomy. In A. Fraknoi (Ed.), *Cosmos in the Classroom 2010: Proceedings* [Electronic]. San Francisco, CA: Astronomical Society of the Pacific.

Shupla, C. B., Shipp, S. S., Schultz, G., Pomeroy, R., **Bailey, J. M.**, Asti, P., Chambers, L. H., Slater, T. F., Slater, S. J., Stork, D., Smith, D. A., & Waller, W. H. (2010). Building a community of faculty for teacher preparation in Earth and space science education. In J. Barnes, D. A. Smith, M. G. Gibbs, and J. G. Manning (Eds.), *Science education and outreach: Forging a path to the future*. Vol. 431 (pp. 233–236). San Francisco, CA: Astronomical Society of the Pacific. (ISBN 978-1-58381-742-1)

Bailey, J. M., Brissenden, G., & Bruning, D. (2008). SABER: The searchable annotated bibliography of education research in astronomy. In A. Fraknoi (Ed.), *Cosmos in the Classroom 2007: Proceedings* (pp. 209–210). San Francisco, CA: Astronomical Society of the Pacific.

Bailey, J. M. (2008). Using concept inventories to gauge student understanding in astronomy. In A. Fraknoi (Ed.), *Cosmos in the Classroom 2007: Proceedings* (pp. 11–14). San Francisco, CA: Astronomical Society of the Pacific.

Bailey, J. M., & Slater, T. F. (2005). A contemporary review of K-16 astronomy education research. In J. M. Pasachoff and J. R. Percy (Eds.), *Teaching and learning astronomy: Effective strategies for educators worldwide* (Proceedings from the Special Session on Astronomy Education at the 25th General Assembly of the International Astronomical Union, pp. 58–65). New York, NY: Cambridge University Press. (ISBN 0-521-84262-X)

Prather, E. E., Slater, T. F., & **Bailey, J. M.** (2004). Probing the effectiveness of the conventional introductory astronomy lecture. In A. Fraknoi & W. Waller (Eds.), *Cosmos in the Classroom 2004: A Hands-On Symposium on Teaching Astronomy* (pp. 31–36). San Francisco, CA: Astronomical Society of the Pacific.

GRANTS, GRANT PROPOSALS, FELLOWSHIPS, AND SCHOLARSHIPS

Funded, Pending, and In Preparation, by Date

Lombardi, D. (Lead PI, UMaryland), **Bailey, J. M. (Co-PI/Institutional PI)**, and others. *Collaborative Proposal: Evaluating Sources and Claims: Scaffolds to Promote Students' Socioscientific Thinking and Learning*. Proposal **submitted to** the US National Science Foundation Discovery Research PreK-12 program on 10/06/2021; \$570,175 (Temple; \$2.8M total); September 1, 2022 to August 31, 2026.

Bailey, J. M. (PI), & Hannum, M. (subaward Co-PI, AAPT). (2021). *Temple/ American Association of Physics Teachers NASA HEAT Collaboration*. Proposal **funded** by NASA Goddard Space Flight Center on 06/28/2021 (80NSSC21K1560), \$63,866; June 28, 2021 to June 27, 2022.

Fukawa-Connelly, T. (PI, Temple U), **Bailey, J. M. (Co-PI)**, Scallon, A. (Co-PI), Sniad, T. (Co-PI), and others. (2019). *Temple and String Theory Schools Teacher Residency*. Proposal submitted to the US Department of Education Office of Elementary and Secondary Education (OESE): Teacher Quality Partnership (TQP) Grant Program CFDA Number 84.336S on 05/20/2019; **funded** on 09/26/2019 (U336S190019); \$5,003,321 total; October 1, 2019 to September 30, 2024.

Berezovski, T. (PI, St. Joseph's University), and others; **Bailey, J. M. (senior personnel)**. (2017). *Philadelphia Regional Noyce Partnership – scholarship program*. Proposal submitted to the US National Science Foundation Robert Noyce Teacher Scholarship Program on 08/29/2017; **funded** on 05/30/2018 (DUE-1758353); \$1,323,178 total; June 1, 2018 to May 31, 2023.

Fukawa-Connelly, T. (PI, Temple U), **Bailey, J. M. (Co-PI)**, Lee, M. (Co-PI), Najera, K. (Co-PI), & Smith, M. W. (Co-PI). (2017). *Proposal for Temple Teacher Residency: A residency program to prepare diverse 7-12 STEM educators for teaching in the SDP*. Proposal submitted to the School District of Philadelphia Competitive RFQ Number 180 on 11/07/2017; **funded**; July 1, 2018 to June 30, 2020.

Khilnane, D. C. (PI, Lehigh Carbon Comm Coll), and others; **Bailey, J. M. (External Evaluator)**. (2017). *Start SMART – Self-motivated, academic, reflective, talented*. Proposal submitted to the US National Science Foundation (S-STEM Program) on 03/28/2017; **funded** on 12/27/2017 (DUE-1741845); \$1,000,000 total; January 1, 2018 to December 31, 2022.

Lombardi, D. (PI, Temple U), **Bailey, J. M. (Co-PI)**, Governor, D. (Co-PI, U North Georgia), McAuliffe C. (Co-PI, TERC), & Buxner, S. (Evaluator, PSI). (2016). *Engaging students in the scientific practices: Evaluating evidence and explanation in secondary Earth and space science*. Proposal submitted to the US National Science Foundation Discovery Research PreK-12 program on 12/05/2016; **funded** on 08/16/2017 (DRL-1721041); \$2,326,662 total; September 1, 2017-August 31, 2021. Grant transferred to UMaryland-College Park in early 2020 (DRL-

Burrell, S., & Lombardi, D. (2017). *Towards an urban geoscience pedagogy that promotes student interest, critical thinking, academic achievement, and value of science content*. Supplemental funding for S. Burrell for a graduate research project to *Developing critical evaluation as a scientific habit of mind: Instructional scaffolds for secondary Earth science*, by D. Lombardi (PI) & **J. M. Bailey (Co-PI)**. Proposal submitted to the US National Science Foundation (Discovery Research PreK-12 Program); **funded** on 06/13/2017 (part of DRL-1316057); \$34,999 total; September 1, 2017 to June 30, 2018.

Bailey, J. M. (PI), & Vieyra, R. (subaward PI, AAPT). (2016). *Heliophysics Education Consortium: Through the eyes of NASA to the hearts and minds of the nation*. Proposal **funded** by NASA Goddard Space Flight Center on 09/12/2016 (NNX16AR36A); \$224,800; August 24, 2016 to August 23, 2021.

Baird, D. (PI, Temple U), **Bailey, J. M. (Co-PI)**, & McKinley, K. (Co-PI). (2014). *Mobile device initiative for Step 2*. Proposal submitted to the University of Texas at Austin on 03/07/2014; **funded** on 05/20/2014; \$14,176; April 1, 2014 to June 30, 2015.

Lombardi, D. (PI, Temple U), & **Bailey, J. M. (Co-PI)**. (2012). *Developing critical evaluation as a scientific habit of mind: Instructional scaffolds for secondary Earth science*. Proposal submitted to the US National Science Foundation Discovery Research K-12 program on 12/04/2012; **funded** on 08/24/2013 (DRL-1316057); \$449,567; September 1, 2013 to August 31, 2016 (no cost extension to June 30, 2017).

Bailey, J. M. (PI), ^DEspinoza, N. (Project Staff), & Utz, J. (Project Staff). (2012). *Biology and English language arts: Interdisciplinary partnerships for achievement (BELA IPA)*. Proposal submitted to the Nevada Collaborative Teaching Improvement Program (US Department of Education) on 11/14/2012; **funded** on 01/27/2012; \$62,031; March 1, 2012 to August 31, 2013.

Fiore, N. (PI), & **Bailey, J. M. (Project Staff)**. (2011). *Hands-on training for middle and high school teachers: A pathway to engineering education for their students*. Proposal submitted to Nevada Space Grant Consortium on 02/01/2011; **funded** on 03/14/2011; \$34,920 awarded plus \$34,920 in cost-share.

Cominsky, L. R. (PI, Sonoma State U), **Bailey, J. M. (Co-PI)**, Coble, K. (Co-PI, Chicago State U), McLin, K. M. (Co-PI, SSU), & Metevier, A. J. (Co-PI, SSU). (2009). *Using the big ideas in cosmology to teach college students: Curriculum development*. Proposal submitted to NASA Research Opportunities in Space and Earth Science – Opportunities for SMD Education and Public Outreach on 06/30/2009; **funded** on 01/04/2010; \$499,596 total; \$67,412 to UNLV through subcontract; March 1, 2010 to June 30, 2013.

Wierman, T. (PI, Lawrence Hall of Science), Schultz, G. (Co-I, U California-Berkeley), Barber, J. (Co-I, LHS), Slater, T. F. (Co-I, U Wyoming), **Bailey, J. M. (Collaborator)**, and others. (2008). *Advancing mentor and novice teachers in space science (AMANTISS)*. Proposal submitted to NASA Research Opportunities in Space and Earth Science – Opportunities for SMD Education and Public Outreach on 07/15/2008; **funded** 11/2008; \$150,000; March 2009 to February 2013.

Bailey, J. M. (PI), Keppelmann, E. C. (Co-I, U Nevada, Reno), Hardy, C. (Co-I, Lincoln County School District), Lombardi, D. (Co-I, Southern Nevada Regional Professional Development Program), Hepworth, D. (Co-I, SNRPDP), & Hopkins, J. (Co-I, Nevada State Science Teachers Association). (2007). *The Nevada mathematics and science leadership cadre*. Proposal submitted to Nevada Department of Education Mathematics and Science Partnership Program (NCLB Title II) on 11/20/2007; **funded** on 02/07/2008; \$461,929 total; \$40,232 to UNLV through subcontract; March 1, 2008 to May 31, 2011.

Shipp, S. (PI, Lunar and Planetary Institute), Shupla, C. (Co-PI, LPI), Pomeroy, J. R. (Co-PI, U California-Davis), Slater, T. F. (Co-PI, U Arizona), Smith D. (Co-PI, Space Telescope Science Institute), & **Bailey, J. M. (external evaluator)**. (2007). *Science and education faculty collaborations to improve Earth and space science teacher preparation*. Proposal submitted to NASA Research Opportunities in Space and Earth Science – Opportunities for SMD Education and Public Outreach 2006 Amendment 25 on 04/04/2007; **funded** on 11/15/2007; \$456,516 total; \$28,000 for external evaluation; November 2007 to November 2010.

Bailey, J. M. (PI), & Nagamine, K. (Co-PI, UNLV). (2006). *Implementing learner-centered strategies in introductory astronomy courses: A case study of a new professor*. Proposal submitted to University of Nevada, Las Vegas Office of Research and Graduate Studies, New Investigator Award on 11/3/2006; **funded** on 2/20/2007; \$14,324; April 1, 2007 to June 30, 2009.

Additional Grant Considerations

Recipient of competitive fellowship, scholarship, and travel awards totaling more than \$83k.

PI (8), Co-PI (22), senior personnel/consultant (6), or external evaluator (4) on grant proposals not awarded totaling more than \$41M.

CURRICULUM DEVELOPMENT

Lombardi, D., **Bailey, J. M.**, ^DBurrell, S., ^DDobaria, A. S., Governor, D., Holzer, M., ^DKlavon, T. G., Roemmele, C., Sowers, S., & Strickland, K. (2018-2020). *Build-a-MEL activities and materials for Earth and space science*. Available online at https://serc.carleton.edu/mel/teaching_resources/index.html

Lopez, R., Ambrose, B. S., **Bailey, J. M.**, Cid, X., Vieyra, R., Willoughby, S., & Donelan, D. (2017–present). *NASA Space Science Education Consortium: Resources for teaching*. Available online at <http://aapt.org/resources/SSEC/>

Lombardi, D., **Bailey, J. M.**, Holzer, M. A., Hopkins, J. D., Girtain, C., Crones, P., & ^DBurrell, S. (2015). *Model-evidence link diagrams and materials for Earth and space science*. Available online at https://serc.carleton.edu/mel/teaching_resources/index.html

Slater, S. J., **Bailey, J. M.**, & Gibbs, M. G. (Eds.) (2015). *Galileo's classroom: Astronomy learning activities*. Hilo, HI: Pono Publishing. (ISBN-10 1515163652 / ISBN-13 978-1515163657)

Slater, S. J., **Bailey, J. M.**, & Gibbs, M. G. (Eds.) (2009). *Galileo's classroom: A teacher workshop in celebration of the International Year of Astronomy 2009*.

Bailey, J. M. (2007). The evolution of terrestrial atmospheres [from Chapter 11, Mercury, Venus, and Mars: Earth-like yet Unique]. Interactive module to accompany *Universe* (8th ed.), by R. W. Freedman. Modules edited by B. Hufnagel and G. Deming.

Additional modules:

Volcanoes on Venus and Mars [from Chapter 11, Mercury, Venus, and Mars: Earth-like yet Unique].

Saturn's dramatic rings [from Chapter 12, Jupiter and Saturn: Lords of the Planets].

Atmospheric motions in Jupiter and Saturn [from Chapter 12, Jupiter and Saturn: Lords of the Planets].

Pompea, S. M., Walker, C. E., **Bailey, J. M.**, & Sparks, R. (2005). *Hands-on optics: Making an impact with light. Module 6: Communicating on a beam of light*. Tucson, AZ: National Optical Astronomy Observatory.

Pompea, S. M., Walker, C. E., **Bailey, J. M.**, & Sparks, R. (2005). *Hands-on optics: Making an impact with light. Module 5: Ultraviolet and infrared light*. Tucson, AZ: National Optical Astronomy Observatory.

Pompea, S. M., Walker, C. E., Peruta, C., Kinder, B., Cardell, K., **Bailey, J. M.**, & Sparks, R. (2005). *Hands-on optics: Making an impact with light. Module 4: Peculiar polarizations*. Tucson, AZ: National Optical Astronomy Observatory.

Pompea, S. M., Walker, C. E., Peruta, C., Kinder, B., Cardell, K., **Bailey, J. M.**, & Sparks, R. (2005). *Hands-on optics: Making an impact with light. Module 3: Magnificent magnifications*. Tucson, AZ: National Optical Astronomy Observatory.

Pompea, S. M., Walker, C. E., Peruta, C., Kinder, B., Cardell, K., **Bailey, J. M.**, & Sparks, R. (2005). *Hands-on optics: Making an impact with light. Module 2: Kaleidoscope adventures*. Tucson, AZ: National Optical Astronomy Observatory.

Pompea, S. M., Walker, C. E., Peruta, C., Kinder, B., **Bailey, J. M.**, & Sparks, R. (2005). *Hands-on optics: Making an impact with light. Module 1: Laser challenges*. Tucson, AZ: National Optical Astronomy Observatory.

Bailey, J. M. (2004). Contributions to *Lecture-Tutorials for Introductory Astronomy* (1st ed.), by J. P. Adams, E. E. Prather, T. F. Slater, & J. A. Dostal, Upper Saddle River, NJ: Prentice Hall (ISBN 0131479970).

Bailey, J. M. (2002). Created end-of-module exams and reviewed module material for *Astronomy Online* multimedia program, by T. F. Slater, New York, NY: W.H. Freeman Publishers (ISBN 0176796694).

Adams, J. P., **Bailey, J. M.**, Brown, T., Crowder, J. C., Francis, G., Georing, K. B., Slater, T. F., & Wells, M. (2000). *Active astronomy: Classroom activities for learning about infrared light*, NASA SOFIA Mission. Available online at <https://www.sofia.usra.edu/multimedia/sofia-outreach/outreach-and-public-engagement-support-materials/active-astronomy>

OTHER PUBLICATIONS (EDITOR REVIEWED OR NON-REFEREED)

Wallace, C., Coble, K., & **Bailey, J. M.** (2021, June 16). What do we expect undergraduate astronomy majors to learn? [Web log]. <https://aas.org/posts/news/2021/06/what-do-we-expect-undergraduate-astronomy-majors-learn>

Bailey, J. M., & Buxner, S. (2021, March 1). New from the IAU: Astronomy Education Journal [Web log]. <https://aas.org/posts/news/2021/03/new-iau-astronomy-education-journal>

Bailey, J. M. (2020). Editor's corner [guest author]. *The Earth Scientist*, 36(3), 3. Available online at <https://www.nestanet.org/cms/sites/default/files/journal/Fall20.pdf>

Bailey, J. M., & Plummer, J. D. (2018). Editorial: Focused collection: Astronomy education research. *Physical Review Physics Education Research* [Focused Collection on Astronomy Education Research], 14(1), 010004. doi: 10.1103/PhysRevPhysEducRes.14.010004. <https://journals.aps.org/prper/abstract/10.1103/PhysRevPhysEducRes.14.010004>

Bailey, J. M. (2018). 2018 AAPT award citations at the Winter Meeting, San Diego, CA. *American Journal of Physics*, 86(3), 165–168. <https://doi.org/10.1119/1.5023385>

Bailey, J. M. (2017). 2017 AAPT award citations at the Summer Meeting, Cincinnati, Ohio. *American Journal of Physics*, 85(12), 892–895. <https://doi.org/10.1119/1.5012738>

Bailey, J. M., & Mader, J. (2017, November 3). STEM certificate: The view from AAPT [Web log]. <http://nstacomunities.org/blog/2017/11/03/stem-certificate-the-view-from-aapt/>

Lopez, R. E., Ambrose, B. S., **Bailey, J. M.**, Cid, X., Vieyra, R., & Willoughby, S. (2017). Connecting undergraduate instruction to the 2017 solar eclipse [AstroNotes column]. *The Physics Teacher*, 55(4), 250–251. <https://doi.org/10.1119/1.4978732>

Bailey, J. M. (2014). *A Single Sky: How an International Community Forged the Science of Radio Astronomy*, by David P. D. Munns. The MIT Press, Cambridge, MA, USA, 2013. xi + 247 pp. ISBN 978-0-262-01833-3 [Book Review]. *Science Education*, 98(1), 185–187. <https://doi.org/10.1002/sce.21082>

Bailey, J. M. (2012). Editor's corner [guest author]. *The Earth Scientist*, 28(1), 5–6.

Bailey, J. M., Pomeroy, J. R., Shipp, S., Shupla, C., Slater, S. J., Slater, T. F., & Stork, D. (2011). Three methods of using online space data to support inquiry. *The Classroom Astronomer*, 2(3), 20–23.

Bailey, J. M. (Ed.) (2009). International Year of Astronomy trading card set. Supplement to *The Physics Teacher*, 47 (September and November issues).

Bailey, J. M. (2008). Practice Criterion Reference Test (CRT) questions for performance benchmark N.8.B.2., Students know scientific knowledge is revised through a process of incorporating new evidence gained through on-going investigation and collaborative discussion. *TIPS: Targeted Interventions for Proficiency in Science*. Available online at http://www.rpd.net/sciencetips_v3/N8B2.htm#sample [link broken as of 05/04/2020]

Additional practice CRT and High School Proficiency Exam (HSPE) questions:

P.8.C.5., Students know heat energy flows from warmer materials or regions to cooler ones through conduction, convections, and radiation. Available online at http://www.rpd.net/sciencetips_v3/P8C5.htm#sample [link broken as of 05/04/2020]

E.12.B.1., Students know common characteristics of stars. Available online at http://www.rpd.net/sciencetips_v2/E12B1.htm#sample [link broken as of 01/13/2020]

E.12.B.2., Students know stars are powered by nuclear fusion of lighter elements into heavier elements, which results in the release of large amounts of energy. Available online at http://www.rpd.net/sciencetips_v2/E12B2.htm#sample [link broken as of 01/13/2020]

E.12.B.3., Students know ways in which technology has increased understanding of the universe. Available online at http://www.rpd.net/sciencetips_v2/E12B3.htm#sample [link broken as of 01/13/2020]

E.12.B.4., Students know ongoing processes involved in star formation and destruction. Available online at http://www.rpd.net/sciencetips_v2/E12B4.htm#sample [link broken as of 01/13/2020]

E.12.B.5., Students know scientific evidence suggest that the universe is expanding. Available online at http://www.rpd.net/sciencetips_v2/E12B5.htm#sample [link broken as of 01/13/2020]

Bailey, J. M. (2008). Performance benchmark N.8.B.2., Students know scientific knowledge is revised through a process of incorporating new evidence gained through on-going investigation and collaborative discussion. *TIPS: Targeted Interventions for Proficiency in Science*. Available online at http://www.rpd.net/sciencetips_v3/N8B2.htm [link broken as of 05/04/2020]

Bailey, J. M., & Lombardi, D. (2007). Performance benchmark E.12.B.1., Students know common characteristics of stars. *TIPS: Targeted Interventions for Proficiency in Science*. Available online at http://rpd.net/sciencetips_v2/E12B1.htm [link broken as of 01/13/2020]

Additional TIPS by Bailey & Lombardi (2007):

E.12.B.2., Students know stars are powered by nuclear fusion of lighter elements into heavier elements, which results in the release of large amounts of energy. Available online at http://rpd.net/sciencetips_v2/E12B2.htm [link broken as of 01/13/2020]

Lombardi, D., & **Bailey, J. M.** (2007). Performance benchmark E.12.B.3., Students know ways in which technology has increased understanding of the universe. *TIPS: Targeted Interventions for Proficiency in Science*. Available online at http://rpd.net/sciencetips_v2/E12B3.htm [link broken as of 01/13/2020]

Additional TIPS by Lombardi & Bailey (2007):

E.12.B.4., Students know ongoing processes involved in star formation and destruction. Available online at http://rpd.net/sciencetips_v2/E12B4.htm [link broken as of 01/13/2020]

E.12.B.5., Students know scientific evidence suggest that the universe is expanding. Available online at http://rpd.net/sciencetips_v2/E12B5.htm [link broken as of 01/13/2020]

E.8.B.7., Students know regular and predictable motions of Earth around the Sun and the Moon around the Earth explain such phenomena as the day, the year, phases of the Moon, and eclipses. Available online at http://rpd.net/sciencetips_v3/E8B7.htm [link broken as of 05/04/2020]

P.12.B.6., Students know electricity is transferred from generating sources for consumption and practical uses. Available online at http://rpd.net/sciencetips_v2/P12C6.htm [link broken as of 01/13/2020]

Secondary Science RPDP, Nevada Department of Education, & **Bailey, J. M.** (2007). Science high school proficiency exam: Basic exam design information. *ShopTALK – The Professional Development Magazine of the Regional Professional Development Program*, 2(3), 16–17. Available online at <http://rpd.net/pdfs/ShopTalk%20PDF/Shop%20TALK%20Summer%202007.pdf> [link broken as of 05/04/2020]

Bailey, J. M. (2007). AAPT's Space Science and Astronomy Committee. *Spark, the AAS Education Newsletter*, 3, 5.

Bailey, J. M. (2006). Astronomy from the AAPT. *Spark, the AAS Education Newsletter*, 2, 8–9.

Filippenko, A., Matheson, T., Odewahn, S. C., Woodward, C. E., **Bailey, J.**, Hanzl, D., Kato, T., Okyudo, M., Ishida, T., Mikolajewski, M., Ruminski, K., Mutel, R., Sauerbrei, P., & Prugniel, P. (1993). Supernova 1993J in NGC 3031, *International Astronomical Union Circular*, No. 5760, 13 April.

REFEREED CONFERENCE PRESENTATIONS

International and National Conferences

Buxner, S., ^DCabrera, L., Matewos, A., & **Bailey, J. M.** (2022-in review). *The intersection of socioscientific issues and classroom diversity: Affordances and successes*. Roundtable paper submitted to the 2022 NARST Annual International Conference.

^DDobaria, A., & **Bailey, J. M.** (2022-in review). *Middle school students' experiences of learning about seasons using a spatial curriculum*. Paper submitted to the 2022 NARST Annual International Conference.

Klavon, T. G., ^DGans, N., Lombardi, D., & **Bailey, J. M.** (2022-in review). *The predictive characteristic of students' evaluations of scientific plausibility judgments*. Paper submitted to the 2022 NARST Annual International Conference.

^DPalmer, R. C., **Bailey, J. M.**, Kaplan, A., & ^DDuffield, C. (2022, April-accepted). *Competing goals in second language education: How teachers build meaningful relationships in the L2 classroom*. Poster paper submitted to the 2022 Annual Meeting of the American Educational Research Association, San Diego, CA.

^DJamani, S., ^MMohan, S., ^DJaffe, J. B., Lombardi, D., & **Bailey, J. M.** (2021-accepted). *Climate crisis learning through scaffolded instructional tools*. Poster accepted for the American Psychological Association 2021 Convention, virtual meeting.

Finalist, APA Division 15 Outstanding Graduate Student Poster Award

^DDobaria, A., **Bailey, J. M.**, ^MMohan, S., Klavon, T. G., ^DMedrano, J. R., ^DJaffe, J. B., & Lombardi, D. (2021-accepted). *Students' scientific evaluations of astronomy concepts*. Paper accepted for EARLI 2021—the 19th Biennial EARLI Conference, virtual meeting.

Bailey, J. M., Matewos, A., & Buxner, S. (2021, April). *Teaching controversial socioscientific issues: Challenges and affordances*. Paper presented at the 2021 NARST Annual International Conference, virtual meeting.

^DDobaria, A., **Bailey, J. M.**, & Coble, K. (2020, June). *Impacts of a course-based undergraduate research experience in introductory astronomy using robotic telescopes*. Paper accepted for the International Conference of the Learning Sciences 2020, Nashville, TN. [Note: This conference was cancelled due to the COVID-19 outbreak.]

Scallon, A., **Bailey, J. M.**, & Fukawa-Connelly, T. (2020, May). *Tools, and how student teachers use them, for goal setting and reflection*. Paper accepted for the 2020 National Student Teaching and Supervision Conference, West Chester, PA. [Note: This conference was cancelled due to the COVID-19 outbreak.]

Lombardi, D., & **Bailey, J. M.** (2020, April). “Science strategy interventions.” In D. Dinsmore & L. Fyer (Chairs), *Investigating strategies and strategy use: Where do we go from here?* Symposium accepted for the 2020 Annual Meeting of the American Education Research Association, San Francisco, CA. [Note: This conference was cancelled due to the COVID-19 outbreak.]

<https://sciencelearning.umd.edu/2020/03/25/spring-2020-presentations/>

^DLuccioni, N. A., Lombardi, D., & **Bailey, J. M.** (2020, April). *Predicting elementary student self-efficacy, interest, and enjoyment of science*. Poster paper accepted for the 2020 Annual Meeting of the American Education Research Association, San Francisco, CA. [Note: This conference was cancelled due to the COVID-19 outbreak.] <http://tinyurl.com/wl4yq6s>

Matewos, A. M., Lombardi, D., **Bailey, J. M.**, & ^DHerrick, I. (2020, April). *From science student to conceptual agent: Examining the individual shifts in engagement during scaffolded instruction*. Paper accepted for the 2020 Annual Meeting of the American Education Research Association, San Francisco, CA. [Note: This conference was cancelled due to the COVID-19 outbreak.] <https://sciencelearning.umd.edu/2020/03/25/spring-2020-presentations/> or <http://tinyurl.com/wd2o5ax>

^DGann, A. F., & **Bailey, J. M.** (2020, March). *Development of resident teachers' noticing skills prior to student teaching*. Paper accepted for the NARST 2020 Annual International Conference, Portland, OR. [Note: This conference was cancelled due to the COVID-19 outbreak.]

^DKlavon, T. G., Lombardi, D., **Bailey, J. M.**, & ^DDobaria, A. S. (2020, March). *Students' plausibility shifts and knowledge gains when evaluating competing explanatory models about freshwater resource availability*. Paper accepted for the NARST 2020 Annual International Conference, Portland, OR. [Note: This conference was cancelled due to the COVID-19 outbreak.] <https://sciencelearning.umd.edu/2020/03/25/spring-2020-presentations/>

Vieyra, R. E., **Bailey, J. M.**, Lopez, R. E., & McAuliffe, C., (2019, July). *A survey of teachers' integration of Earth and space science contexts for teaching physics*. Poster presented at the 2019 Physics Education Research Conference, Provo, UT.

^DDobaria, A., Coble, K., & **Bailey, J. M.** (2019, April). *Impacts of a course-based undergraduate research experience in introductory astronomy using robotic telescopes*. Paper presented at the 2019 National Consortium for Instruction and Cognition Annual Conference, Toronto, ON, Canada.

^DKlavon, T. G., **Bailey, J. M.**, ^UKendall, R., Holzer, M. A., & Lombardi, D. (2019, April). *The impact of evidence choices on students' plausibility shifts toward scientific explanations*. Paper presented at the 2019 National Consortium for Instruction and Cognition Annual Conference, Toronto, ON, Canada.

^DLuccioni, N. A., Lombardi, D., & **Bailey, J. M.** (2019, April). *Measuring elementary students' perceptions of teacher self-efficacy, interest, and enjoyment of science and science teaching*. Paper presented at the 2019 National Consortium for Instruction and Cognition Annual Conference, Toronto, ON, Canada.

^DGann, A. F., ^DSiegel, R. A., & **Bailey, J. M.** (2019, January). *An examination of preservice K-8 teachers' autobiographies for attitudes and outlooks toward teaching science*. Paper presented at the 2019 International Conference of the Association for Science Teacher Educators, Savannah, GA.

^DKlavon, T. G., **Bailey, J. M.**, & Willoughby, S. D. (2018, April). *College students' understanding of eclipses in advance of the 2017 US total solar eclipse*. Modified poster presented at the 2018 National Consortium for Instruction and Cognition Annual Conference, New York, NY.

Honorable Mention, 2018 Richard C. Anderson Graduate Student Research Award

^UKendall, R., Lombardi, D., ^DBurrell, S., ^DKlavon, T. G., ^DUslu, B., & **Bailey, J. M.** (2018, April). *Crafting knowledge instruments to measure effectiveness of science instruction*. Modified poster presented at the 2018 National Consortium for Instruction and Cognition Annual Meeting, New York, NY.

^DBurrell, S., Lombardi, D., ^UBickel, E. S., & **Bailey, J. M.** (2018, March). *Development of a model describing scientific thinking in Earth science students*. Poster presented at the 2018 NARST Annual International Conference, Atlanta, GA.

^MHalpern, M., Lombardi, D., & **Bailey, J. M.** (2017, April). *Students' informal reasoning, evaluations, and plausibility perceptions about climate change*. Poster presented at the 2017 American Educational Research Association Annual Meeting, San Antonio, TX.

Bailey, J. M., Lombardi, D., ^UBickel, E. S., & ^DBurrell, S. (2017, April). *Deepening high school students' knowledge about Earth science topics through scientific evaluation and plausibility reappraisal*. Poster presented at the 2017 National Association for Research in Science Teaching Annual International Conference, San Antonio, TX.

Bailey, J. M., & ^DLuccioni, N. A. (2017, April). *Self-efficacy of secondary science and mathematics student teachers*. Paper presented at the 2017 National Association for Research in Science Teaching Annual International Conference, San Antonio, TX.

^DGann, A., **Bailey, J. M.**, & ^UCooper, B. T. (2017, April). *Preservice teacher attitudes toward science and science teaching based on autobiographies*. Paper presented at the 2017 National Association for Research in Science Teaching Annual International Conference, San Antonio, TX.

Lombardi, D., ^UBickel, E. S., ^DBurrell, S., & **Bailey, J. M.** (2016, July). *Students' evaluations of pro and con arguments*. Poster presented at the 26th Annual Meeting of the Society for Text & Discourse, Kassel, Germany.

^DBurrell, S., Lombardi, D., & **Bailey, J. M.** (2016, April). *MEL diagrams: An instructional strategy that promotes scientific thinking and practice in Earth science students*. Poster presented at the 2016 National Association for Research in Science Teaching Annual International Conference, Baltimore, MD.

^MYoung, T. K., Lombardi, D., & **Bailey, J. M.** (2016, April). *Understanding epistemological value judgments of plausibility through the introduction of falsifiability*. Poster presented at the 2016 American Educational Research Association Annual Meeting, Washington, DC.

^UBickel, E. S., Lombardi, D., **Bailey, J. M.**, & ^DBurrell, S. (2016, April). *Students' evaluations of opposing arguments*. Modified poster presented at the 2016 National Consortium for Instruction and Cognition Annual Meeting, Washington, DC.

Honorable Mention, 2016 Richard C. Anderson Graduate Student Research Award

^DGann, A., **Bailey, J. M.**, & ^UCooper, B. T. (2016, April). *Attitudes toward science found in preservice teachers' autobiographies*. Modified poster presented at the 2016 National Consortium for Instruction and Cognition Annual Meeting, Washington, DC.

^MHalpern, M., Lombardi, D., & **Bailey, J. M.** (2016, April). *How do students co-construct knowledge when evaluating alternative models of climate change?* Modified poster presented at the 2016 National Consortium for Instruction and Cognition Annual Meeting, Washington, DC.

^DLuccioni, N. A., & **Bailey, J. M.** (2016, April). *Self-efficacy of secondary science and mathematics student teachers*. Modified poster presented at the 2016 National Consortium for Instruction and Cognition Annual Meeting, Washington, DC.

^DRehmat, A. P., ^DOwens, M. C., & **Bailey, J. M.** (2015, April). *Guiding behavior and changing beliefs: Creating a design, engineering, and technology focused professional development* [part of the Graduate Student In-Progress Research Roundtable]. Paper presented at the 2015 American Educational Research Association Annual Meeting, Chicago, IL.

^DBurrell, S., Lombardi, D., & **Bailey, J. M.** (2015, April). *The impact of implementation of model-evidence link (MEL) diagrams in high school science classrooms on critical evaluation and knowledge gains: A comparative study*. Modified poster presented at the 2015 National Consortium for Instruction and Cognition Annual Meeting, Chicago, IL.

^MYoung, T. K., Lombardi, D., & **Bailey, J. M.** (2015, April). *Understanding the roles of epistemic cognition and plausibility reappraisal in model-evidence link diagrams of Moon formation theories*. Modified poster presented at the 2015 National Consortium for Instruction and Cognition Annual Meeting, Chicago, IL.

Honorable Mention, 2015 Richard C. Anderson Graduate Student Research Award

Bailey, J. M., & Lombardi, D. (2015, April). *Relating preservice teachers' knowledge of scientific practices, epistemic aims and values, and self-efficacy*. Paper presented at the 2015 National Association for Research in Science Teaching Annual International Conference, Chicago, IL.

^DRehmat, A. P., ^DOwens, M. C., & **Bailey, J. M.** (2015, January). *The earlier the better: Teacher beliefs about design, engineering, and technology instruction*. Poster presented at the Association for Science Teacher Education 2015 International Conference, Portland, OR.

^DMaher, P. A., **Bailey, J. M.**, & Tucka, A. M. (2014, April). *Latency toward public speaking in pre-engineering and physics students at a two-year college*. Paper presented at the 2014 National Association for Research in Science Teaching Annual International Conference, Pittsburgh, PA.

^DRehmat, A. P., & **Bailey, J. M.** (2014, March). *Engineering awareness among high school science, mathematics and technology teachers*. Paper presented at the 2014 National Association for Research in Science Teaching Annual International Conference, Pittsburgh, PA.

Stork, D. J., **Bailey, J. M.**, & Pomeroy, J. R. (2014, January). *The impact of a professional development experience on science education faculty*. Paper presented at the Association for Science Teacher Education 2014 International Conference, San Antonio, TX.

Bailey, J. M., Lombardi, D., Sinatra, G. M., & ^DCordova, J. R. (2013, August). *The impact of self-efficacy on conceptual change: A study in astronomy*. Paper presented at the European Association for Research on Learning and Instruction Annual Meeting, Munich, Germany.

^DFulton, L. A., **Bailey, J. M.**, Crowther, D. T., & Wang, J. (2013, April). *The development of insightful implementation of science notebooks*. Paper presented at the 86th International Conference of the National Association for Research in Science Teaching, Rio Grande, Puerto Rico.

^DFulton, L. A., Crowther, D. T., & **Bailey, J. M.** (2013, January). *Science notebooks: Moving from mechanical to insightful implementation*. Paper presented at the Association for Science Teacher Education 2013 International Conference, Charleston, SC.

^DMaher, P. A., & **Bailey, J. M.** (2013, January). *What influence can working with content faculty mentors have on changing preservice teachers' beliefs toward STEM fields?* Paper presented at the Association for Science Teacher Education 2013 International Conference, Charleston, SC.

^DRehmat, A. P., & **Bailey, J. M.** (2013, January). *Technology integration into a science classroom: Preservice teachers' perceptions*. Paper presented at the Association for Science Teacher Education 2013 International Conference, Charleston, SC.

Bailey, J. M., ^DRehmat, A. P., Lombardi, D., & Keppelmann, E. (2012, March). *Developing science teacher leaders through long-term professional development: A cross-case analysis of four teachers*. Paper presented at the 85th International Conference of the National Association of Research in Science Teaching, Indianapolis, IN.

Bailey, J. M. (2012, January). "Impact of the FINESSE Institutes on its participants." In S. S. Shipp, **J. M. Bailey**, D. Stork, C. B. Shupla, J. R. Pomeroy, T. F. Slater, & S. J. Slater (Chairs), *Improving preservice teacher preparation through NASA Institutes*. Symposium conducted at the Association for Science Teacher Education 2012 International Conference, Clearwater Beach, FL.

^DGrimes, M. K., & **Bailey, J. M.** (2012, January). *Multicultural science and preservice teachers: An action research study*. Paper presented at the Association for Science Teacher Education 2012 International Conference, Clearwater Beach, FL.

Bailey, J. M., Lombardi, D., & Sinatra, G. M. (2011, April). *Investigating college students' self-efficacy, interest, and conceptual change about stars*. Paper presented at the 84th International Conference of the National Association of Research in Science Teaching, Orlando, FL.

Bailey, J. M., & Nagamine, K. (2009, August). *Results from a case study investigation on the adoption of learner-centered strategies in introductory astronomy*. Poster presented at the European Association for Research on Learning and Instruction Annual Meeting, Amsterdam, The Netherlands.

^DSanguenza, C., & **Bailey, J. M.** (2008, January). "Science classroom practices: A look at participants in a large-scale professional development project over time." In **J. M. Bailey**, K. J. Crippen, K. J., ^{DC}Sanguenza, ^{DC}Colin, & ^{DE}K. Ebert, *Project PASS: Researching outcomes of a long-term model for science teacher professional development*. Symposium conducted at the Association for Science Teacher Education 2008 International Conference, St. Louis, MO.

Bailey, J. M., Prather, E. E., Johnson, B., & Slater, T. F. (2006, April). *Development and validation of the Star Properties Concept Inventory*. Interactive poster presented at the 79th International Conference of the National Association for Research in Science Teaching, San Francisco, CA.

Bailey, J. M., Johnson, B., Prather, E. E., & Slater, T. F. (2005, April). *Students' beliefs about stars and star formation*. Paper presented at the 78th International Conference of the National Association for Research in Science Teaching, Dallas, TX.

Slater, T. F., **Bailey, J. M.**, Hancock, E., Austin, B. A., & Roehrig, G. (2004, April). *Assessing summer undergraduate research students' levels of engagement in the scientific enterprise*. Paper presented at the 77th International Conference of the National Association for Research in Science Teaching, Vancouver, BC, Canada.

Slater, T. F., Prather, E. E., **Bailey, J. M.**, & Adams, J. P. (2003, March). *Effectiveness of a lecture-tutorial-approach to large enrollment introductory astronomy*. Paper presented at the 76th International Conference of the National Association for Research in Science Teaching, Philadelphia, PA.

Regional and State Conferences

^DMaher, P. A., Etheridge, D. A., Warby, D. B., & **Bailey, J. M.** (2013, November). *An exploratory study of preservice teachers' beliefs and confidence after working with STEM faculty mentors*. Paper presented at the Nevada Educational Research Symposium, Reno, NV.

INVITED PRESENTATIONS

International and National Conferences

Bailey, J. M. (2021, October). *Quantitative research methods in astronomy education research*. Paper presented at the 3rd Shaw-IAU Workshop on Astronomy for Education, virtual.

Bailey, J. M., Champion, J., & Portsmore, M. (2021, June). *Creativity, critical thinking, and problem solving across STEM*. Panel discussion at the NSF DRK-12 PI Meeting, virtual.

Klavon, T. G., **Bailey, J. M.**, ^DDobaria, A. S., & Lombardi, D. (2021, January). *The Origins build-a-MEL: A scaffold to explore the Universe's origins*. Paper presented at the 2021 Virtual Winter Meeting of the American Association of Physics Teachers.

Bailey, J. M., Lombardi, D., ^DKlavon, T. G., & ^DDobaria, A. (2020, July). *Scaffolds to support student learning: Judging astronomical explanations*. Paper presented at the 2020 Virtual Summer Meeting of the American Association of Physics Teachers.

Coble, K., **Bailey, J. M.**, Wallace, C. S., French, R., Prather, E. E., & Masters, K. (2020, July). *Undergraduate astronomy majors: Curriculum topics, approaches, and needs*. Paper presented at the 2020 Virtual Summer Meeting of the American Association of Physics Teachers.

Lopez, R. E., Ambrose, B. S., **Bailey, J. M.**, Cid, X., Donelan, D., Vieyra, R. E., & Willoughby, S. D. (2020, July). *Space science, physics education, and the NASA-AAPT collaboration*. Paper presented at the 2020 Virtual Summer Meeting of the American Association of Physics Teachers.

Bailey, J. M. (2019, September). *AER pathways: Recent research and future directions*. Keynote paper presented at the International Astronomical Union Commission C1 Conference on Astronomy Education: Bridging Research and Practice, Garching, Germany.

Bailey, J. M. (2019, March). *Learner-centered strategies and self-efficacy for learning astronomy*. Paper presented at the PittCon 2019 Conference and Expo, Philadelphia, PA.

Coble, K., ^MConlon, M., **Bailey, J. M.**, & Cominsky, L. R. (2017, February). *Investigating students' ideas about the fate and curvature of the Universe*. Paper presented at the 2017 Winter Meeting of the American Association of Physics Teachers, Atlanta, GA.

Bailey, J. M., Cunningham, B. A., & Mogge, M. (2017, February). *Developing a Code of Conduct for AAPT*. Panel discussion presented at the 2017 Winter Meeting of the American Association of Physics Teachers, Atlanta, GA.

Bailey, J. M. (2016, September). *An overview of physics education and physics teacher preparation in the US*. Paper presented at the 2016 International Symposium on Physics Higher Education, Peking University, Beijing, China.

Bailey, J. M. (2013, January). *Teaching astronomy under the influence of education research*. Paper presented at the 2013 Winter Meeting of the American Association of Physics Teachers, New Orleans, LA.

Bailey, J. M. (2012, March). *Exploring students' ideas about cosmological concepts*. Paper presented at the American Physical Society April Meeting 2012, Atlanta, GA.

Wallace, C. S., **Bailey, J. M.**, & Schlingman, W. M. (2012, February). *Item response theory in astronomy education research*. Paper presented at the 2012 Winter Meeting of the American Association of Physics Teachers, Ontario, CA.

Invited attendee at the 2nd National Meeting on STEM Concept Inventories (sponsored by the National Science Foundation through a grant to Purdue University), Alexandria, VA, 8-9 August 2011.

Bailey, J. M., Coble, K., ^MCochran, G., ^MSanchez, R., ^MLarrieu, D., ^UHayes, V. L., ^UNickerson, M. D., McLin, K. M., & Cominsky, L. R. (2011, January). *Dark energy is "dying," and other student ideas about cosmology*. Paper presented at the 2011 Winter Meeting of the American Association of Physics Teachers, Jacksonville, FL.

Coble, K., McLin, K. M., Metevier, A. J., **Bailey, J. M.**, & Cominsky, L. R. (2011, January). *The big ideas in cosmology: A curriculum for college students*. Paper presented at the 2011 Winter Meeting of the American Association of Physics Teachers, Jacksonville, FL.

Bailey, J. M. (2010, October). *Astronomy education research: Developmental history of the field and summary of the literature*. Paper presented at the National Research Council Board on Science Education's Committee on the Status, Contributions, and Future Directions of Discipline Based Education Research, Washington, DC.

Invited attendee at the National Meeting on STEM Concept Inventories (sponsored by the National Science Foundation through a grant to Purdue University), Alexandria, VA, 10-11 May 2010.

Bailey, J. M. (2007, August). *Using concept inventories to gauge student understanding in astronomy*. Workshop presented at the Cosmos in the Classroom 2007, Claremont, CA.

Bailey, J. M., Prather, E. E., Johnson, B., & Slater, T. F. (2007, January). *Fusion confusion: Assessing what students know (and don't know) about stars*. Paper presented at the joint convention of the 209th Meeting of the American Astronomical Society and the 2007 Winter Meeting of the American Association of Physics Teachers, Seattle, WA.

Bailey, J. M., Prather, E. E., Johnson, B., & Slater, T. F. (2006, January). *Star Properties Concept Inventory: Design, development, and first results*. Paper presented at the 2006 Winter Meeting of the American Association of Physics Teachers, Anchorage, AK.

Bailey, J. M., Prather, E. E., Johnson, B., Slater, T. F., & Ward, R. A. (2004, August). *Results on research into students' ideas about stars and star formation*. Paper presented at the 129th National Meeting of the American Association of Physics Teachers, Sacramento, CA.

Bailey, J. M., & Slater, T. F. (2003, July). *A contemporary review of K-16 astronomy education research*. Paper presented at the 25th General Assembly of the International Astronomical Union Sydney, Australia.

Bailey, J. M., Prather, E. E., & Slater, T. F. (2002, October). *Reflecting on the history of astronomy education research to plan for the future*. Paper presented at the 34th COSPAR Scientific Assembly - The Second World Space Congress, Houston, TX.

Regional, State, or Local Presentations

Bailey, J. M. (2021, April). *Teaching critical evaluation in science*. “Firehose”-style presentation as part of the Celebration of Research and Innovation—Spotlight on Connected Research on Learning with Comments from President Englert, Temple University, Philadelphia, PA. Video available at https://www.youtube.com/watch?v=YrQU1ax_Z1w [presentation begins at approximately 26:45].

Bailey, J. M. (2021, March). *Teaching controversial socioscientific issues: Challenges and affordances*. Paper presented for the Faculty Research and Development brown bag series, College of Education and Human Development, Temple University, Philadelphia, PA.

Bailey, J. M. (2019, October). *Pathways in astronomy education research: Recent developments and future directions*. Paper presented at the Department of Earth & Space Sciences Colloquium, West Chester University, West Chester, PA.

Bailey, J. M. (2019, April). *From ASC to AER: Exploring student ideas in astronomy*. Paper presented at the Department of Physics and Astronomy Colloquium, Agnes Scott College, Decatur, GA.

Bailey, J. M. (2019, January). *Essential strategies and practices in training next-generation K-12 teachers in the United States*. Paper presented for visiting Ningxia K-12 School Leaders delegation, Temple University, Philadelphia, PA.

Bailey, J. M. (2017, October). *Learning about instruction from research on self-efficacy in astronomy*. Paper presented for visiting Indonesia Engineering Education delegation, Temple University, Philadelphia, PA.

Bailey, J. M., Cordes, E., & Postigo, H. (2016, October). *Open access and the future of scholarly publishing*. Panel discussion presented at the Paley Library, Temple University, Philadelphia, PA.

Bailey, J. M. (2013, November). *Meeting students halfway: Increasing self-efficacy and promoting knowledge change in astronomy*. Paper presented at the Department of Physics Colloquium, Montana State University, Bozeman, MT.

Bailey, J. M. (2013, March). *Women inspiring innovation through imagination and mathematics (STEM): A personal journey*. Paper presented at Department of Homeland Security (DHS)/USCIS, Las Vegas Field Office, Las Vegas, NV.

Bailey, J. M. (2012, May). *Fusion confusion and stellar misconceptions*. Paper presented at the NASA Planetary Sciences and Heliophysics E/PO Community Retreat, Santa Fe, NM.

Bailey, J. M. (2012, April). *Using the results from research on undergraduate learning in cosmology to create an immersive web-based curriculum*. Paper presented at the Department of Physics Colloquium, Utah State University, Logan, UT.

Bailey, J. M. (2011, February). *Understanding the universe: Topics and trends in astronomy education research*. Paper presented at the Department of Physics Colloquium, Idaho State University, Pocatello, ID.

Invited attendee at the University of Wyoming Astronomy Education Research Symposium, Laramie, WY, 15-17 November 2008.

Lombardi, D., **Bailey, J. M.**, & Ebert, E. (2007, May). *StarLab training*. Workshop (6-hr) presented at Clark County School District, Las Vegas, NV.

Bailey, J. M. (2006, February). *Blank slates or clever minds? Dealing with science misconceptions*. Paper presented for Secondary/Middle Grades Science Methods and Elementary Science Methods courses, Western Kentucky University, Bowling Green, KY.

Bailey, J. M. (2006, February). *Are you really teaching if no one is learning?* Paper presented at the Department of Physics and Astronomy Colloquium, Western Kentucky University, Bowling Green, KY.

Bailey, J. M. (2005, October). *Insights into learning astronomy*. Paper presented at the Project ASTRO Fall 2005 Workshop, Tucson, AZ. Also presented to Project ASTRO workshops in June 2005 and September 2004.

CONTRIBUTED ORAL, WORKSHOP, AND POSTER PRESENTATIONS

National and International Conferences

Buxner, S., Masters, K., Anderson, T., **Bailey, J. M.**, Crone-Odekon, M., Ferkinhoff, C., Follette, K. B., Johnson, C. H., Just, D. W., Lee, H., Meredith, K., & Rebull, L. M. (2022, January). AAS Education Committee updates. Poster *submitted to* the 239th American Astronomical Society Meeting, Salt Lake City, UT.

^MAssadi Samie, B., Willoughby, S., & **Bailey, J. M.** (2022, January). Students' understanding of factors relating to space exploration. Poster *accepted for* the 2022 Virtual Winter Meeting of the American Association of Physics Teachers.

Bailey, J. M., & Coble, K. (2022, January). Investigating the impacts of a cultural cosmology project. Paper *accepted for* the 2022 Virtual Winter Meeting of the American Association of Physics Teachers.

Vieyra, R., Ambrose, B. A., **Bailey, J. M.**, Cid, X., Donelan, D., Johnson-Glenberg, M., Lopez, R. E., Megowan Romanowicz, C., Vieyra, C., & Willoughby, S. (2021, August). Energy in magnetic fields: A hands-on activity and preliminary assessment. Poster presented at the 2021 Virtual Summer Meeting of the American Association of Physics Teachers.

Bailey, J. M., Klavon, T. G., ^DDobaria, A., & Lombardi, D. (2021, August). Comparing two scaffolds for evaluating scientific explanations. Poster presented at the 2021 Virtual Summer Meeting of the American Association of Physics Teachers.

Vieyra, R., Lopez, R. E., Ambrose, B. A., **Bailey, J. M.**, Cid, X., Donelan, D., & Willoughby, S. (2021, January). *Physics in an astronomy context: Resources from the NASA SSEC*. Poster presented at the 2021 Virtual Winter Meeting of the American Association of Physics Teachers.

Willoughby, S., Lopez, R. E., **Bailey, J. M.**, Cid, X., Ambrose, B. A., & Vieyra, R. E. (2021, January). *Teaching introductory physics in an Earth and space science context*. Workshop presented at the 2021 Virtual Winter Meeting of the American Association of Physics Teachers.

Also presented at:

2020 Winter Meeting of the American Association of Physics Teachers, Orlando, FL.

Bailey, J. M., Lombardi, D., & Klavon, T. G. (2020, November). *NESTA Session: MEL2—Thinking scientifically in a changing world*. Paper presented at the NSTA Engage: Fall20 virtual conference.

Bailey, J. M., ^DDobaria, A., & ^DKlavon, T. G. (2020, January). *Judging astronomical explanations: Scaffolds to support student learning*. iPoster presented at the 235th Meeting of the American Astronomical Society, Honolulu, HI. Available online at: <http://aas235-aas.ipostersessions.com/Default.aspx?s=E3-CF-59-B9-44-BD-43-DE-4F-1C-77-97-D7-FF-25-E6>

Vieyra, R. E., Bailey, J. M., Lopez, R. E., & McAuliffe, C. (2019, July). *A survey of teachers' integration of Earth and space science contexts for teaching physics*. Poster presented at the 2019 Physics Education Research Conference, Provo, UT.

Vieyra, R. E., Lopez, R. E., Ambrose, B., **Bailey, J. M.**, & Willoughby, S. (2019, July). *Integrated space science resources for undergraduate instruction*. Poster presented at the 2019 Summer Meeting of the American Association of Physics Teachers, Provo, UT.

Willoughby, S., Ambrose, B. A., **Bailey, J. M.**, Cid, X., Lopez, R. E., & Vieyra, R. E. (2018, August). *Space sciences as a context for college physics*. Poster presented at the 2018 Physics Education Research Conference, Washington, DC.

Maher, P. A., **Bailey, J. M.**, & Schrader, P. G. (2018, July). *Using motion sensor devices and VR headsets in the planetarium*. Paper presented at the 2018 Summer Meeting of the American Association of Physics Teachers, Washington, DC.

Bailey, J. M., ^DKlavon, T. G., & Willoughby, S. D. (2018, January). *College students' understanding of eclipses*. Poster presented at the 2018 Winter Meeting of the American Association of Physics Teachers, San Diego, CA.

Lopez, R., Ambrose, B. S., **Bailey, J. M.**, Cid, X. C., Vieyra, R., & Willoughby, S. D. (2018, January). *New resources from AAPT/Temple NASA Heliophysics Education Consortium*. Poster presented at the 2018 Winter Meeting of the American Association of Physics Teachers, San Diego, CA.

^DMaher, P. A., & **Bailey, J. M.** (2017, July). *Using two simulation tools to teach concepts in introductory astronomy*. Poster presented at the 2017 Summer Meeting of the American Association of Physics Teachers, Cincinnati, OH.

Coble, K. A., ^MConlon, M., & **Bailey, J. M.** (2017, June). *Understanding students' ideas about the geometry of the Universe*. Paper presented at the 230th Meeting of the American Astronomical Society, Austin, TX.

Lopez, R. E., **Bailey, J. M.**, Vieyra, R., Willoughby, S., Cid, X., & Ambrose, B. (2017, February). *AER and PER resources from the NASA Heliophysics Education Consortium*. Poster presented at the 2017 Winter Meeting of the American Association of Physics Teachers, Atlanta, GA.

Vieyra, R., Lopez, R. E., Ambrose, B., **Bailey, J. M.**, Cid, X., & Willoughby, S. (2017, February). *Bring the 2017 Solar Eclipse into your class!* Topical discussion presented at the 2017 Winter Meeting of the American Association of Physics Teachers, Atlanta, GA.

Coble, K., ^UMartin, D., ^UHayes, P., Targett, T., Cominsky, L. R., & **Bailey, J. M.** (2016, July). *Preliminary evaluation of a new cosmology curriculum*. Poster presented at the 2016 Summer Meeting of the American Association of Physics Teachers, Sacramento, CA.

Lombardi, D., & **Bailey, J. M.**, (2016, June). *Developing critical evaluation as a scientific habit of mind: Instructional scaffolds for secondary Earth and space sciences*. Poster presented at the 2016 DRK-12 PI Meeting, Washington, DC.

^DBurrell, S., Lombardi, D., **Bailey, J. M.**, & ^UBickel, E. S. (2015, November). *Implementation of the Model-Evidence Link (MEL) Diagram in high school Earth science classrooms: An educational strategy that promotes critical evaluation and evidence-based reasoning*. Poster presented at the Geological Society of America 2015 Annual Meeting, Baltimore, MD.

^DBurrell, S., Lombardi, D., & **Bailey, J. M.** (2015, November). *The effect of a student-centered academic intervention on teacher practice in high school Earth science classrooms: A mixed methods study*. Paper presented at the Geological Society of America 2015 Annual Meeting, Baltimore, MD.

Cominsky, L. Coble, K. McLin, K., **Bailey, J. M.**, Metevier, A., & Peruta, C. (2015, August). *Big ideas in cosmology: A digital first curriculum for college students*. Paper presented at the International Astronomical Union General Assembly, Honolulu, HI.

Lombardi, D., & **Bailey, J. M.** (2015, July). *Promoting critical evaluation in the science classroom*. Poster presented at the 2015 Summer Meeting of the American Association of Physics Teachers, College Park, MD.

^MConlon, M., Coble, K. A., **Bailey, J. M.**, & Cominsky, L. R. (2015, January). *Investigating student ideas about the fate of the universe*. Poster presented at the 225th Meeting of the American Astronomical Society, Seattle, WA.

Coble, K. A., ^UMartin, D., ^UHayes, P., Targett, T., **Bailey, J. M.**, & Cominsky, L. R. (2015, January). *Preliminary evaluation of a new cosmology curriculum*. Paper presented at the 225th Meeting of the American Astronomical Society, Seattle, WA.

Lombardi, D., ^UBickel, E. S., ^MYoung, T. K., & **Bailey, J. M.** (2015, January). *Learning about the Moon: Results from a first-year pilot study*. Poster presented at the 2015 Winter Meeting of the American Association of Physics Teachers, San Diego, CA.

Also presented at:

Temple Undergraduate Research Forum and Creative Works Symposium 2015, Philadelphia, PA, April 2015.

^DMaher, P. A., **Bailey, J. M.**, & Schrader, P. G. (2015, January). *Two simulation tools used to promote learning in science*. Poster presented at the 2015 Winter Meeting of the American Association of Physics Teachers, San Diego, CA.

^UGuynn, N. A., & **Bailey, J. M.** (2014, May). *Implementation of PBI*. Poster presented at the 8th Annual UTeach Conference, Austin, TX.

Also presented at:

Temple Undergraduate Research Forum and Creative Works Symposium 2014, Philadelphia, PA, April 2015.

Lombardi, D., & **Bailey, J. M.** (2014, January). *How did the Moon form? Evaluating alternative explanations*. Poster presented at the 2014 Winter Meeting of the American Association of Physics Teachers, Orlando, FL.

Oakley, D. J., & **Bailey, J. M.** (2013, November). *Research into student learning experiences in architectural structures classes: A multi-year systematic study*. Paper (virtual) presented at the 6th International Conference of Education, Research, and Innovation, Seville, Spain.

^DMaher, P. A., **Bailey, J. M.**, & Tucka, A. (2013, July). *Using da Vinci's machines to demonstrate physics at a planetarium*. Paper presented at the 2013 Summer Meeting of the American Association of Physics Teachers, Portland, OR.

Bailey, J. M., & Foster, T. (2013, July). *Measuring of learning in the astronomy classroom*. Workshop (4-hr) presented at the 2013 Summer Meeting of the American Association of Physics Teachers, Portland, OR.

Coble, K. A., **Bailey, J. M.**, Trouille, L. E., ^MCochran, G. L., ^UCamarillo, C. T., ^UNickerson, M D., ^MLarrieu, D., ^HBell, K., Metevier, A. J., McLin, K. M., & Cominsky, L. R. (2013, July). *The big ideas in cosmology*. Poster presented at the 2013 Winter Meeting of the American Association of Physics Teachers, New Orleans, LA.

Also presented at:

Physics Education Research Conference 2012, Philadelphia, PA, August 2012.

Oakley, D. J., & **Bailey, J. M.** (2013, January). *Research into student understanding of architectural structures principles*. Poster presented at the 2013 Winter Meeting of the American Association of Physics Teachers, New Orleans, LA.

McLin, K. M., Coble, K. A., **Bailey, J. M.**, Metevier, A. J., & Cominsky, L. R. (2012, August). *A web-based cosmology curriculum developed through research into student understanding of basic cosmological concepts*. Workshop (1-hr) presented at the Annual Meeting of the Astronomical Society of the Pacific, Tucson, AZ.

^UCamarillo, C., Coble, K. A., Trouille, L., **Bailey, J. M.**, ^UNickerson, M., ^MCochran, G., ^UHayes, V., McLin, K. M., & Cominsky, L. R. (2012, June). *Student ideas about cosmological concepts: Structure and distances*. Paper presented at the 220th American Astronomical Society Meeting, Anchorage, AK.

Coble, K. A., Trouille, L., **Bailey, J. M.**, ^UCamarillo, C. T., ^UNickerson, M. D., ^MCochran, G. L., ^UHayes, V. L., McLin, K. M., & Cominsky, L. R. (2012, June). *Investigating undergraduate student ideas about cosmological concepts*. Paper presented at the 220th American Astronomical Society Meeting, Anchorage, AK.

Trouille, L., Coble, K. A., ^UCamarillo, C., **Bailey, J. M.**, ^UNickerson, M., ^MCochran, G., ^UHayes, V., McLin, K. M., & Cominsky, L. R. (2012, June). *Student ideas about cosmological concepts: Age, expansion, and the Big Bang*. Paper presented at the 220th American Astronomical Society Meeting, Anchorage, AK.

^PMaher, P. A., Tucka, A. M., & **Bailey, J. M.** (2012, February). *Understanding physics through the machines of Leonardo Da Vinci*. Poster presented at the 2012 Winter Meeting of the American Association of Physics Teachers, Ontario, CA.

Cominsky, L. R., Coble, K., McLin, K. M., **Bailey, J. M.**, & Metevier, A. (2011, August). *Using the big ideas in cosmology to teach college students*. Workshop (1-hr) presented at the Annual Meeting of the Astronomical Society of the Pacific, Baltimore, MD.

Bailey, J. M., Coble, K., ^MCochran, G. L., ^MSanchez, R., ^MLarrieu, D., ^UHayes, V. L., ^UNickerson, M. D., Cominsky, L. R., & McLin, K. M. (2011, May). *Dark energy is “dying” and other student ideas about cosmology*. Poster presented at the Joint Convention of the 218th American Astronomical Society Meeting and the American Association of Variable Star Observers Annual Meeting, Boston, MA.

^UCamarillo, C. T., Coble, K., ^UHayes, V. L., ^UNickerson, M. D., ^MCochran, G. L., **Bailey, J. M.**, McLin, K. M., & Cominsky, L. R. (2011, May). *Investigating student understanding of the universe: Perceptions of astronomical sizes and distances*. Poster presented at the Joint Convention of the 218th American Astronomical Society Meeting and the American Association of Variable Star Observers Annual Meeting, Boston, MA.

Coble, K., ^MCochran, G. L., ^UHayes, V. L., ^UNickerson, M. D., ^UCamarillo, C. T., **Bailey, J. M.**, McLin, K. M., & Cominsky, L. R. (2011, May). *Investigating student understanding of the universe: Age and expansion*. Poster presented at the Joint Convention of the 218th American Astronomical Society Meeting and the American Association of Variable Star Observers Annual Meeting, Boston, MA.

Coble, K., McLin, K. M., Metevier, A. J., **Bailey, J. M.**, & Cominsky, L. R. (2011, May). *The big ideas in cosmology: A curriculum for college students*. Paper presented at the Joint Convention of the 218th American Astronomical Society Meeting and the American Association of Variable Star Observers Annual Meeting, Boston, MA.

^UHayes, V. L., Coble, K., ^UNickerson, M. D., ^MCochran, G. L., ^UCamarillo, C. T., **Bailey, J. M.**, McLin, K. M., & Cominsky, L. R. (2011, May). *Investigating student understanding of the universe: Structure*. Poster presented at the Joint Convention of the 218th American Astronomical Society Meeting and the American Association of Variable Star Observers Annual Meeting, Boston, MA.

^UNickerson, M. D., Coble, K., ^MCochran, G. L., ^UHayes, V. L., ^UCamarillo, C. T., **Bailey, J. M.**, McLin, K. M., & Cominsky, L. R. (2011, May). *Investigating student understanding of the universe: Dark matter*. Poster presented at the Joint Convention of the 218th American Astronomical Society Meeting and the American Association of Variable Star Observers Annual Meeting, Boston, MA.

Cominsky, L. R., McLin, K. M., Coble, K., **Bailey, J. M.**, & Metevier, A. J. (2011, May). *Using the big ideas in cosmology to teach college students*. Paper presented at the American Physical Society April Meeting 2011, Anaheim, CA.

Coble, K., **Bailey, J. M.**, ^MCochran, G. L., ^UHayes, V. L., ^UNickerson, M. D., ^MLarrieu, D., ^MSanchez, R., Metevier, A. J., McLin, K. M., & Cominsky, L. R. (2011, April). *Investigating student understanding of cosmology*. Poster presented at the 4th IUPAP International Conference on Women in Physics, Stellenbosch, Western Cape, South Africa.

^MCochran, G. L., Coble, K., ^UHayes, V. L., ^UNickerson, M. D., **Bailey, J. M.**, McLin, K. M., & Cominsky, L. R. (2011, January). *Investigating student understanding of the universe: Age and expansion*. Poster presented at the 2011 Winter Meeting of the American Association of Physics Teachers, Jacksonville, FL.

^UHayes, V. L., Coble, K., ^UNickerson, M. D., ^MCochran, G. L., **Bailey, J. M.**, McLin, K. M., & Cominsky, L. R. (2011, January). *Investigating student understanding of the universe: Structure*. Poster presented at the 2011 Winter Meeting of the American Association of Physics Teachers, Jacksonville, FL.

^UNickerson, M. D., Coble, K., ^MCochran, G. L., ^UHayes, V. L., **Bailey, J. M.**, McLin, K. M., & Cominsky, L. R. (2011, January). *Investigating student understanding of the universe: Dark matter*. Poster presented at the 2011 Winter Meeting of the American Association of Physics Teachers, Jacksonville, FL.

Bailey, J. M., & Reinfeld, E. (2011, January). *Observing with NASA: Expanding the universe in the classroom*. Workshop (4-hr) presented at the 2011 Winter Meeting of the American Association of Physics Teachers, Jacksonville, FL.

Bailey, J. M., Coble, K., ^MCochran, G., ^UHayes, V., ^MLarrieu, D., ^MSanchez, R., McLin, K. M., & Cominsky, L. R. (2010, August). *Using the big ideas in cosmology to teach college students*. Poster presented at Cosmos in the Classroom 2010, Boulder, CO.

Also presented at:

American Association of Physics Teachers Chicago Section, Chicago, IL, November 2010.

Summer Meeting of the American Association of Physics Teachers, Portland, OR, July 2010.

Great Lakes Cosmology Conference [regional meeting], Chicago, IL, June 2010.

216th Meeting of the American Astronomical Society, Miami, FL, May 2010.

Bailey, J. M., & Keller, J. M. (2010, August). *Using concept inventories to gauge student understanding in astronomy*. Workshop (1-hr) presented at Cosmos in the Classroom 2010, Boulder, CO.

^MCochran, G. L., Coble, K., ^UHayes, V. L., ^UNickerson, M. D., **Bailey, J. M.**, McLin, K. M., & Cominsky, L. R. (2010, July). *Addressing student needs in instruction on the expansion and age of the universe*. Poster presented at the Physics Education Research Conference 2010, Portland, OR.

Shupla, C. B., Shipp, S., Asti, P., **Bailey, J. M.**, Chambers, L., Pomeroy, J. R., Schultz, G., Slater, T. F., Slater, S. J., Smith, D., Stork, D., & Waller, W. H. (2010, March). *Institutes for faculty instructing future teachers*. Poster presented at the Lunar and Planetary Science Conference, Houston, TX.

Schultz, G., Slater, T. F., Slater, S. J., Shipp, S., Shupla, C. B., Pomeroy, J. R., & **Bailey, J. M.**, (2010, January). *Targeting pre-service teacher education with FINESSE: Faculty institutes in NASA Earth & space science education*. Poster presented at the 215th Meeting of the American Astronomical Society, Washington, DC.

Coble, K., ^MCochran, G. L., ^MLarrieu, D., **Bailey, J. M.**, ^MSanchez, R., Cominsky, L. R., & McLin, K. M. (2010, January). *Probing student understanding of cosmology*. Poster presented at the 215th Meeting of the American Astronomical Society, Washington, DC.

Also presented at:

Physics Education Research Conference 2009, Ann Arbor, MI, July 2009.

Keppelmann, E., **Bailey, J. M.**, & Lombardi, D. (2009, October). *The Nevada Math and Science Leadership Cadre: Bridging great distances with a small group of teachers*. Poster presented at the School Science and Mathematics Association Annual Convention, Reno, NV.

Shipp, S., Schultz, G., Shupla, C., & **Bailey, J.** (2009, September). *Building a community of faculty for teacher preparation in Earth and space science education*. Paper presented at the Astronomical Society of the Pacific Annual Meeting, San Francisco, CA.

Slater, T. F., Slater, S. J., & **Bailey, J. M.** (2009, June). *Getting started in astronomy education research*. Workshop (3-hr) presented at the 214th Meeting of the American Astronomical Society, Pasadena, CA.

Also presented at:

Joint Convention of the 2009 Winter Meeting of the American Association of Physics Teachers and the American Association for the Advancement of Science, Chicago, IL, February 2009.

Bailey, J. M., & Nagamine, K. (2009, February). *Using learner-centered strategies to improve student understanding about stars*. Poster presented at the Joint Convention of the 2009 Winter Meeting of the American Association of Physics Teachers and the American Association for the Advancement of Science, Chicago, IL.

Also presented at:

213th Meeting of the American Astronomical Society, Long Beach, CA, January 2009.

Bailey, J. M., Bartolone, L. M., Greyer, P., Harman, P., & Reinfeld, E. (2009, February). *Exploring Beyond the Solar System*. Workshop (4-hr) presented at the Joint Convention of the 2009 Winter Meeting of the American Association of Physics Teachers and the American Association for the Advancement of Science, Chicago, IL.

Nagamine, K. & **Bailey, J. M.** (2009, January). *What changes when shifting to learner-centered strategies in introductory astronomy?* Poster presented at the 213th Meeting of the American Astronomical Society, Long Beach, CA.

Also presented at:

2008 Summer Meeting of the American Association of Physics Teachers, Edmonton, Alberta, Canada, July 2008.

Bailey, J. M., & Nagamine, K. (2008, July). *"Focusing on learning": One astronomy professor's adoption of learner-centered strategies*. Paper presented at the 2008 Summer Meeting of the American Association of Physics Teachers, Edmonton, Alberta, Canada.

Bailey, J. M., & Nagamine, K. (2008, June). *Results from a case study investigation on the adoption of learner-centered strategies in introductory astronomy*. Paper presented at the Joint Convention of the 212th Meeting of the American Astronomical Society and the 2008 Meeting of the Astronomical Society of the Pacific, St. Louis, MO.

Reinfeld, E., Harman, P., Lee, M., & **Bailey, J. M.** (2008, June). *Professional development in the International Year of Astronomy: Expanding the Universe in the classroom*. Workshop (1.5-hr) presented at the Joint Convention of the 212th Meeting of the American Astronomical Society and the 2008 Meeting of the Astronomical Society of the Pacific, St. Louis, MO.

Ebert, E. K., Asay, L. D., Crippen, K. J., **Bailey, J. M.**, Kern, C., Holt, S., Reichenbach, R., Waldman, C. A., & Messina, F. (2008, March). *Project PASS* [part of Teacher Researcher Day]. Poster set presented at the National Science Teachers Association 2008 National Conference on Science Education, Boston, MA.

Ebert, E. K., Asay, L. D., Crippen, K. J., Litster, M., **Bailey, J. M.**, Orgill, M., Kern, C., Mayes, G., Reichenbach, R., Holt, S., O'Neil, L., Waldman, C. A., & Messina, F. (2008, March). *Project PASS: Inquiry, conceptual change, and self-regulated learning* [part of Teacher Researcher Day]. Paper presented at the National Science Teachers Association 2008 National Conference on Science Education, Boston, MA.

Ebert, E. K., Asay, L. D., Crippen, K. J., **Bailey, J. M.**, Orgill, M., Kern, C., Mayes, G., Reichenbach, R., Holt, S., Messina, F., & Waldman, C. A., (2008, March). *Using action research data to inform instruction: A tale of data sense making* [part of Teacher Researcher Day]. Paper presented at the National Science Teachers Association 2008 National Conference on Science Education, Boston, MA.

Harman, P., **Bailey, J. M.**, Greyer, P., Howard, J. T., & Mattson, B. (2008, January). *Exploring beyond the solar system*. Workshop (4-hr) presented at the 2008 Winter Meeting of the American Association of Physics Teachers, Baltimore, MD.

Slater, T. F., Slater, S. J., **Bailey, J. M.**, & Williams, J. P. (2008, January). *Transforming an REU program from good to great: Lessons learned from external evaluation*. Paper presented at the 211th Meeting of the American Astronomical Society, Austin, TX.

Bailey, J. M., Brissenden, G., & Bruning, D. (2007, August). *SABER: The searchable annotated bibliography of education research in astronomy*. Poster presented at Cosmos in the Classroom 2007, Claremont, CA.

Crippen, K. J., Orgill, M., Thomas, M., **Bailey, J. M.**, Asay, L. D., Ebert, E. K., & Wagner, C. (2007, March). *Project PASS action research poster session* [part of Teacher Researcher Day]. Poster set presented at the National Science Teachers Association National Conference 2007, St. Louis, MO.

Bruning, D., **Bailey, J. M.**, & Brissenden, G. (2007, January). *SABER: The searchable annotated bibliography of education research in astronomy*. Poster presented at the Joint Convention of the 209th Meeting of the American Astronomical Society and the 2007 Winter Meeting of the American Association of Physics Teachers, Seattle, WA.

Slater, T. F., Prather, E. E., **Bailey, J. M.**, Bardar, E., Brissenden, G., Dokter, E. F., Hudgins, D., & Keller, J. (2007, January). *CAPER Team innovations in teaching and learning in ASTRO 101*. Poster presented at the Joint Convention of the 209th Meeting of the American Astronomical Society and the 2007 Winter Meeting of the American Association of Physics Teachers, Seattle, WA.

Pompea, S. M., **Bailey, J. M.**, Walker, C. E., & Sparks, R. T. (2006, January). *Development of kits and modules at NOAO for optics explorations*. Paper presented at the 2006 Winter Meeting of the American Association of Physics Teachers, Anchorage, AK.

Bailey, J. M., Shaner, A. J., & Lombardi, D. (2005, September). *Project evaluation plans that really work*. Workshop (2-hr) presented at Astronomical Society of the Pacific's 117th Annual Meeting (Building Community: The Emerging EPO Profession), Tucson, AZ.

Prather, E. E., Adams, J. P., **Bailey, J. M.**, Hudgins, D., Jones, L. V., & Slater, T. F. (2004, May). *Creating interactive teaching methods for ASTRO 101 that really work*. Paper presented at the 204th Meeting of the American Astronomical Society, Denver, CO.

Bailey, J. M., & Slater, T. F. (2003, August). *Initial investigation of students' conceptions of star formation*. Paper presented at the 127th National Meeting of the American Association of Physics Teachers, Madison, WI.

Slater, T. F., Prather, E. E., & **Bailey, J. M.** (2003, August). *Probing the effectiveness of the conventional introductory astronomy lecture*. Paper presented at the 127th National Meeting of the American Association of Physics Teachers, Madison, WI.

Adams, J. P., **Bailey, J. M.**, Prather, E. E., & Slater, T. F. (2003, July). *Teaching introductory astronomy using Lecture-Tutorials*. Poster presented at the 25th General Assembly of the International Astronomical Union, Sydney, Australia.

Bailey, J. M., Kadooka, M. A., Mattei, J., Meech, K. J., & Slater, T. F. (2003, July). *An innovative astrobiology K-12 teacher enhancement program*. Poster presented at the 25th General Assembly of the International Astronomical Union, Sydney, Australia.

Slater, T. F., **Bailey, J. M.**, Jones, L. V., Jaeggli, S. A., & Lee, A. C. (2003, July). *An online astronomy course vs. an interactive classroom*. Poster presented at the 25th General Assembly of the International Astronomical Union, Sydney, Australia.

Jones, L. V., Slater, T. F., **Bailey, J. M.**, Jaeggli, S. A., & Lee, A. C. (2003, January). *Astronomy Online: An internet delivered course versus an interactive classroom*. Paper presented at the 126th National Meeting of the American Association of Physics Teachers, Austin, TX.

Bailey, J. M., Jones, L. V., & Slater, T. F. (2003, January). *How astronomers view their role as instructors*. Paper presented at the 126th National Meeting of the American Association of Physics Teachers, Austin, TX.

Slater, T. F., Jones, L. V., **Bailey, J. M.**, Jaeggli, S. A., & Lee, A. C. (2003, January). *An online interactive astronomy course for nonscience majors*. Poster presented at the 201st Meeting of the American Astronomical Society, Seattle, WA.

Bailey, J. M. (2002, August). *Astronomy education research: A review of the field*. Paper presented at the 125th National Meeting of the American Association of Physics Teachers, Boise, ID.

Governor, D., Richwine, P. L., Johnson, C., **Bailey, J. M.**, & Rogan, B. (2002, July). *Variable stars*. Paper presented at the 91st Spring Meeting of the American Association of Variable Star Observers and the 2nd High-Energy Astrophysics Workshop for Amateur Astronomers, Waikoloa Beach, HI.

Bailey, J. M. (2002, June). *Astronomy education research: A review of the field*. Poster presented at the 200th Meeting of the American Astronomical Society, Albuquerque, NM.

Bailey, J. M., & Slater, T. F. (2002, June). *Reflecting on the history of astronomy education research to plan for the future*. Paper presented at the 200th Meeting of the American Astronomical Society, Albuquerque, NM.

Bailey, J. M. (2002, January). *Astronomy Online*. Paper presented at the 199th Meeting of the American Astronomical Society, Washington, DC. Special presentation sponsored by W.H. Freeman Publishers.

Bailey, J. M., Phinney, R. A., Slater, T. F., & Steinberg, D. J. (2002, January). *Implementing a formative evaluation plan for the Princeton Earth Physics Project* [final results]. Poster presented at the 199th Meeting of the American Astronomical Society, Washington, DC.

Also presented at:

University of Arizona Graduate and Professional Student Council's Student Showcase, November 2001.

Bailey, J. M., Phinney, R. A., Slater, T. F., & Steinberg, D. J. (2001, January). *Characteristics of secondary schools that successfully maintain Princeton Earth Physics Project (PEPP) seismology stations*. Poster presented at the Joint Convention of the 122nd National Meeting of the American Association of Physics Teachers and the 197th Meeting of the American Astronomical Society, San Diego, CA.

Bailey, J. M., Phinney, R. A., Slater, T. F., & Steinberg, D. J. (2000, December). *Implementing a formative evaluation plan for the Princeton Earth Physics Project* [preliminary results]. Poster presented at the Fall Meeting of the American Geophysical Union, San Francisco, CA.

Bailey, J. M., Canterna, R. W., Bianchini, A., Skidmore, W., & Howell, S. (2000, January). *Spectroscopic observations of the dwarf nova BV Puppis*. Poster presented at the 195th Meeting of the American Astronomical Society, Atlanta, GA.

Bailey, J. M., Odewahn, S. C., & Woodward, C. E. (1993, January). *Tidal interactions and the formation of Magellanic spiral galaxies: NGC 4618*. Poster presented at the 181st Meeting of the American Astronomical Society, Phoenix/Tempe, AZ.

Odewahn, S. C., Woodward, C. E., & **Bailey, J. M.** (1992, July). *Tidal interactions and the formation of Magellanic spiral galaxies*. Poster presented at the Third Tetons Summer School on Astrophysics, Grand Teton, WY.

Regional, State, or Local Presentations

Holzer, M., Girtain, C., Lombardi, D., & **Bailey, J. M.** (2015, November). *Critical thinking in Earth science: Using the model-evidence link diagram*. Workshop (1-hr) presented at the 2015 Area Conference of the National Science Teachers Association, Philadelphia, PA.

Also presented as:

Hopkins, J., Crones, P., & **Bailey, J. M.** (2015, October). 2015 Area Conference of the National Science Teachers Association, Reno, NV.

Lombardi, D., **Bailey, J. M.**, & Burrell, S. (2014, December). 2014 Pennsylvania Science Teachers Association Conference, State College, PA.

Holzer, M., Girtain, C., Lombardi, D., & **Bailey, J. M.** (2014, October). 2014 New Jersey Science Convention, Princeton, NJ.

^UWang, C., **Bailey, J. M.**, Baird, D., ^UDunn, N. A., Dziembowski, Z., Noel, J., & Weaver, C. (2014, March). *Temple University saves physics brainforest*. Poster presented at the Noyce Northeast Conference, Philadelphia, PA.

Bailey, J. M., & Hopkins, J. (2012, April). *Galileoscopes*. Workshop (3-hr) presented at the Clark County School District, Las Vegas, NV. Also presented in April 2010.

Bailey, J. M., Bittel, K., & Hughes, R. J. (2005, February). *Beyond the drawing: Assessing concept maps*. Paper presented at the 15th Annual Science and Mathematics Education Conference, Benson, AZ.

Hughes, R. J., Bittel, K., & **Bailey, J. M.** (2004, October). *My concept map sure is pretty, but now what?* Paper presented at the Arizona Science Teachers Association Conference, Mesa, AZ.

Richwine, P. L., **Bailey, J. M.**, & Slater, T. F. (2004, October). *Inquiry science in early elementary grades using GEMS*. Paper presented at the Arizona Science Teachers Association Conference, Mesa, AZ.

Richwine, P. L., **Bailey, J. M.**, & Slater, T. F. (2004, October). *Scientific inquiry in middle grades using GEMS*. Paper presented at the Arizona Science Teachers Association Conference, Mesa, AZ.

Bailey, J. M., & Slater, T. F. (2002, October). *Size and scale of the universe activities*. Paper presented at the Arizona Science Teachers Association Conference, Mesa, AZ.

Bailey, J. M. (2001, October). *The astronomer's sky calendar*. Paper presented at the Arizona Science Teachers Association Conference, Phoenix, AZ.

~~ TEACHING ~~

COURSES TAUGHT

Undergraduate Courses

TU EDUC 2802: Undergraduate Independent Study
 TU EDUC 4388/4802: Apprentice Teaching / Apprentice Teaching Seminar
 TU MAES/SCES 2189: Classroom Interactions
 TU MAES/SCES 4189: Project-Based Instruction
 TU MGRE 4108: Teaching and Learning Science in the Middle Grades
 TU SCTC 1189: Step 1: Introduction to Teaching with Inquiry
 TU SCTC 1289: Step 2: Inquiry-Based Lesson Design with Strategies for English Learners
 UNLV EDEL 443: Teaching Elementary School Science
 UNLV AST 104: Stars and Galaxies [team-taught w/Dr. Ken Nagamine, Dept. Physics & Astronomy]
 UA NATS 102: The Physical Universe [as Teaching Assistant]
 UA AST 203: Stars [as Teaching Assistant]
 UM ASTR 1032: Introductory Astronomy [as Instructor and as Teaching Assistant]
 ASC AST 120/121: Introductory Astronomy [as Teaching Assistant]

Masters Courses

TU EDUC 9282: Graduate Independent Study in Curriculum, Instruction, and Technology
 TU EPSY 9995: Master's Capstone in Educational Psychology
 TU MGRE 5405: Teaching Science in the Middle Grades
 TU SCES 5415: Teaching Science for Secondary School Teachers
 TU SCES 5713: Learning & Teaching High School Biology/Chemistry/Physics
 UNLV CIE 635: Instruction in Elementary School Science
 UNLV CIG 600: Curriculum & Instruction: Middle School Science Methods
 UNLV CIG 600: Curriculum & Instruction: Independent Study
 UNLV CIG 639: Science Education Seminar
 UNLV CIG 697: Curriculum & Instruction: Culminating Experience
 UNLV CIG 707: Topics in the Teaching of Elementary / Secondary Subjects: Nature of Science
 UNLV CIG 717: Seminar in Curriculum & Instruction: Science Education Journal Club
 UNLV CIS 708: Instructional Methods in the Secondary School (*specialties: space science, physical science*)
 UNLV RPDP 571a: Math and Science Workshop
 UA TTE 510: Advanced Scientific Methods [as Instructor and as Teaching Assistant]
 UA TTE 594: Practicum
 MSU PHYS 511: Astronomy for Teachers [as Teaching Assistant]

Doctoral Courses

TU EDUC 9255: Research Seminar in Mathematics & Science Education
 TU EDUC 9282: Graduate Independent Study in Curriculum, Instruction, and Technology
 TU EDUC 9991: Research Apprenticeship
 TU EDUC 9994: Preliminary Exam Preparation
 TU EDUC 9998: Dissertation Proposal Design
 TU EDUC 9999: Doctor of Education Dissertation
 TU EPSY 8627: Introduction to Research Design and Methods
 TU EPSY 8825: Advanced Data Analysis: Mixed Methods
 UNLV CIG 775: Theoretical Frameworks for Science Education Research (*original developer*)
 UNLV CIG 777: Principles of Learning Science
 UNLV CIG 784: Theory and Research in School Science
 UNLV CIG 786: Individual Instruction in Education
 UNLV CIG 788: Individual Instruction in Science Education
 UNLV CIG 791: Internship in Curriculum & Instruction
 UNLV CIG 799: Dissertation

ADVISING AND SUPERVISION

Doctoral Advising—Completed (indicates dissertation chair)*

Büşra Uslu, Ph.D. in Education (mathematics and science education concentration), Temple University, December 2021. Committee Member. Dissertation: *The examination of female students' experiences in socioscientific issue-based science classrooms*. Defense passed 10/27/2021.

*Timothy G. Klavon, Ph.D. in Education (mathematics and science education concentration), Temple University, December 2020. Chair/Advisor. Dissertation: *Impact of students' scaffolded small-group discussions on their written scientific explanations*. Defense passed on 11/12/2020.

Dana Christensen, Ph.D. in Education (mathematics and science education concentration), Temple University, August 2020. Committee Member. Dissertation: *Learning biological evolution through computational thinking*. Defense passed on 06/19/2020.

Suzanne Kelley, Ph.D. in Education (mathematics and science education concentration), Temple University, May 2020. Committee Member. Dissertation: *Developing a student heuristic for the use and selection of mathematics instructional videos using the didactic contract and responsibilities*. Defense passed on 04/10/2020.

*Amity Gann, Ph.D. in Education (mathematics and science education concentration), Temple University, August 2019. Chair/Advisor. Dissertation: *Development of professional noticing skills in preservice teacher residents: A cross case analysis*. Defense passed on 06/05/2019.

Shondricka Burrell, Ph.D. in Education (mathematics and science education concentration), Temple University, December 2018. External Reader. Dissertation: *Towards a geoscience pedagogy: A socio-cognitive model*. Defense passed on 12/07/2018.

Noelle A. Luccioni, Ph.D. in Education (mathematics and science education concentration), Temple University, December 2018. Committee Member. Dissertation: *Elementary student perceptions of their teachers' self-efficacy, interest, and enjoyment of science and science teaching*. Defense passed on 12/03/2018.

*Pamela Maher, Ph.D. in Curriculum & Instruction (science education concentration), University of Nevada, Las Vegas, December 2017. Co-Chair (with Dr. Hasan Deniz, UNLV). Dissertation: *Using two simulation tools to teach concepts in introductory astronomy: A design-based research approach*. Defense passed on 08/08/2017.

Annette Ponnock, Ph.D. in Education (educational psychology concentration), Temple University, August 2017. Committee Member. Dissertation: *Science teachers' epistemic cognition in instructional decision making*. Defense passed on 05/11/2017.

Raquel F. Chung-Parsons, Ed.D. in Educational Leadership and Policy, University of Utah, August 2016. Committee Member. Capstone: *The development of pre-service secondary science teachers' understanding of their science teacher identities*. Defense passed on 08/04/2016.

Jeremy Tomaszewski, Ph.D. in Education (mathematics and science education concentration), Temple University, August 2016. Committee Member. Dissertation: *Understanding the role of confidence when targeting naïve conceptions of force and motion using demonstrations*. Defense passed on 06/10/2016.

Kathryn Williamson, Ph.D. in Physics, Montana State University, December 2013. Committee Member. Dissertation: *Development of a concept inventory for gravity*. Defense passed on 11/15/2013.

Eric Rapp, Ph.D. in Learning & Technology, University of Nevada, Las Vegas, August 2013. Committee Member / Graduate College Representative. Dissertation: *Effective use of multimedia presentations to maximize learning within high school science classrooms*. Defense passed 05/06/2013.

*M. Kathryn Grimes, Ph.D. in Curriculum & Instruction (science education concentration), University of Nevada, Las Vegas, August 2012. Co-Chair (with Dr. Jane McCarthy). Dissertation: *Transformative multicultural science education: A case study in robotics*. Defense passed on 07/11/2012.

Antonio Gutierrez, Ph.D. in Educational Psychology, University of Nevada, Las Vegas, May 2012. Committee Member / Graduate College Representative. Dissertation: *Enhancing the calibration accuracy of adult learners: A multifaceted intervention*. Defense passed on 04/09/2012.

Lori Fulton, Ph.D. in Teacher Education, University of Nevada, Las Vegas, May 2012. Committee Member. Dissertation: *Writing in science: Influences of professional development on beliefs, practice, and student achievement*. Defense passed on 03/22/2012.

Cheryl R. Sanguenza, Ph.D. in Teacher Education, University of Nevada, Las Vegas, August 2010. Committee Member. Dissertation: *Pre-service elementary science teaching self-efficacy and teaching practices: A mixed-methods, dual-phase, embedded case study*. Defense passed on 05/19/2010.

Doctoral Advising—In Progress

*Archana Dobarra, Ph.D. student in Education (science, mathematics, and educational technology concentration), Temple University. Chair/Advisor. Comprehensive exam passed 08/2020; dissertation proposal in development.

Alexis Bennett, Ed.D. student in Higher Education, Temple University. Committee member. Dissertation proposal defense passed 10/12/2021.

Other

UNLV: Initial advisor to 5 additional doctoral students in Curriculum & Instruction, Science Education or Mathematics Education emphases.

Masters Advising

Jessica A. McLaughlin, M.Ed. in Educational Psychology, Temple University, August 2020.

Advisor/capstone supervisor. Capstone: *Review of geoscience spatial literature*.

TU: Advisor to 6 M.S.Ed. in Accomplished Teaching (science education concentration) and 41 M.Ed. (graduate certification in secondary science or science+special education) students, 2014-present.

Mehmet Dulger, M.S. in Curriculum & Instruction (elementary science education emphasis), University of Nevada, Las Vegas, May 2011. Committee member. Thesis: *Using graphs to represent physical phenomena in a fourth grade classroom*.

UNLV: Advisor to 40 (completed) M.Ed. students 2006-2013. Second reader of culminating projects for 28 additional M.Ed. students, 2006-2013. Initial advisor to 42 additional M.Ed. students in science education, or Graduate Licensure Program or Teach for America students in secondary science.

Undergraduate Research Supervision

Reed Kendall, Middle Grades Education, Temple University, 2018. Research activities on *Engaging Students in the Scientific Practices: Evaluating Evidence and Explanation in Secondary Earth and Space Science*, with D. Lombardi.

Brian Cooper, Biology with Teaching, Temple University, 2015. Independent study project: *An analysis of preservice teachers' perspectives on science in their own words*.

Elliot S. Bickel, Mathematics with Teaching, Temple University, 2014-2017. Research activities on *Developing Critical Evaluation as a Scientific Habit of Mind: Instructional Scaffolds for Secondary Earth Science*, with D. Lombardi.

Nicole Guynn, Biology with Teaching, Temple University, 2013-2014. Honors Scholar's project: *Introducing inquiry to a direct instruction classroom: Project-based instruction with a focus on differentiation*.

Apprentice/Student Teaching Coaching

Sean Burns, Biology (under the direction of Mr. Robert Goodman, Philadelphia Performing Arts Charter School, Philadelphia, PA), Temple Teacher Residency Program, Temple University, 2020-2021.

Mark Leeper, Middle Grades Science (under the direction of Mr. James Fitzpatrick/Mr. Andrew Juliani, Philadelphia Performing Arts Charter School, Philadelphia, PA), Temple Teacher Residency Program, Temple University, 2020-2021.

Meghan McMahon, Environmental Science (under the direction of Ms. Victoria Bagosy, Philadelphia Performing Arts Charter School, Philadelphia, PA), Temple Teacher Residency Program, Temple University, 2020-2021.

Amber Dolison, Chemistry (under the direction of Mrs. Michelle Thornton, Central High School, Philadelphia, PA), Temple University, Spring 2019.

Dana Lavin, Physics (under the direction of Mr. A. Giacomini, Central High School, Philadelphia, PA), Temple University, Spring 2019.

Daniel Miller, Mathematics (under the direction of Mrs. Laura Carragher, Franklin Towne Charter High School, Philadelphia, PA), Temple University, Fall 2018.

Taylor Neel, Biology (under the direction of Mr. Robert Goodman, Philadelphia Performing Arts: A String Theory Charter School, Philadelphia, PA), Temple University, Fall 2018.

Samantha Pregizer, Biology (under the direction of Ms. Allison McClain, Franklin Towne Charter High School, Philadelphia, PA), Temple University, Fall 2018.

London Smith, Biology (under the direction of Dr. Lisa Franchetti, George Washington Carver High School for Engineering and Science, Philadelphia, PA), Temple University, Fall 2017.

Gaelan Tracy, 7th and 8th Grade Science (under the direction of Mrs. Diane O'Fee-Powers, Cook-Wissahickon K-8 School, Philadelphia, PA), Temple University, Fall 2017.

Joseph Campbell, Genetics and Biology (under the direction of Ms. Darcel Bonner and Mrs. Michelle Thornton, respectively, Central High School, Philadelphia, PA), Temple University, Spring 2017.

Laure Seraphin, Biology (under the direction of Mr. Brian Howland, Central High School, Philadelphia, PA), Temple University, Spring 2017.

Alexandria Hartey, 7th Grade Life Science (under the direction of Ms. Kathleen Tait, Julia R. Masterman Laboratory and Demonstration School, Philadelphia, PA), Temple University, Fall 2016.

Collin McCann, Algebra 2 and Algebra 2/Precalculus (under the direction of Ms. Stephanie Beqiri and Ms. Maeve Siu, respectively, Julia R. Masterman Laboratory and Demonstration School, Philadelphia, PA), Temple University, Fall 2016

Catherine Bergeron, Physics (under the direction of Ms. Rosalind Echols, Science Leadership Academy, Philadelphia, PA), Temple University, Spring 2015.

Julia Matesich, Chemistry (under the direction of Mr. Tim Best, Science Leadership Academy, Philadelphia, PA), Temple University, Spring 2015.

Tara Romanyshyn, Chemistry (under the direction of Ms. Genille Parham, Julia R. Masterman Laboratory and Demonstration School, Philadelphia, PA), Temple University, Spring 2015.

Kimberly Davis, 7th Grade Life Science (under the direction of Ms. Nabeehah Parker, Julia R. Masterman Laboratory and Demonstration School, Philadelphia, PA), Temple University, Fall 2014.

Jera Delibashi, Biology (under the direction of Ms. Emily McGady-Greenleaf, Philadelphia High School for Girls, Philadelphia, PA), Temple University, Fall 2014.

Lauren McTiernan, Biology (under the direction of Ms. Christeena Mathews, Philadelphia High School for Girls, Philadelphia, PA), Temple University, Fall 2014.

Nicole Dunn, Chemistry (under the direction of Mr. Michael Ames, Philadelphia High School for Girls, Philadelphia, PA), Temple University, Spring 2014.

Linsa Sunny, Chemistry (under the direction of Mr. Troy Trotter, Central High School, Philadelphia, PA), Temple University, Spring 2014.

Calvin Wang, Physics (under the direction of Mr. Nathan Fahrenbach, George Washington Carver High School of Engineering and Science, Philadelphia, PA), Temple University, Spring 2014.

Nicole Cozadd, 7th Grade Science (under the direction of Ms. Deanna Fife, Cross Middle School, Tucson, AZ), University of Arizona, Fall 2005.

Deborah Gerbo, Math Standards/Algebra I and Algebra II/Advanced Algebra II-Trigonometry (under the direction of Mr. Sean Watkins and Mr. Shawn Volk, respectively, Canyon del Oro High School, Tucson, AZ), University of Arizona, Spring 2005.

~~ SERVICE ~~

COMMITTEE AND OTHER ACTIVITIES

Professional Community

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|--------------|--|
| 2021 | Grant Proposal Reviewer, European Science Foundation—Science Connect |
| 2021–present | Co-Column Editor, “AstroNotes,” <i>The Physics Teacher</i> |
| 2021 | Ad hoc Reviewer, <i>American Journal of Physics</i> , <i>International Journal of Science Education Part B</i> , <i>Journal of Science Education and Technology</i> , <i>Physical Review Physics Education Research</i> , <i>Research in Science Education</i> , <i>School Science & Mathematics</i> , <i>Science Education</i> , <i>The Educational and Developmental Psychologist</i> , <i>The Physics Teacher</i> |
| 2021, 2019 | Grant Proposal Reviewer, National Science Foundation |
| 2020–present | Editorial Board, <i>Astronomy Education Journal</i> |
| 2020–2021 | Vice Chair, Committee on Space Science and Astronomy, American Association of Physics Teachers. Chair 2022–2023. |
| 2020–2021 | Guest Column Editor, “AstroNotes,” <i>The Physics Teacher</i> |
| 2020 | Member, Task Force to Develop the Virtual SM20 Program, American Association of Physics Teachers |
| 2020 | Ad hoc Reviewer, <i>Contemporary Educational Psychology</i> , <i>International Journal of Science Education</i> , <i>Journal of Science Education and Technology</i> , <i>Journal of STEM Education Research</i> , <i>Physical Review Physics Education Research</i> , <i>Science & Education</i> , <i>The Science Teacher</i> |
| 2019–2022 | Member, Finance Committee, American Association of Physics Teachers |
| 2019 | Member, Scientific Organizing Committee, International Astronomical Union Commission C1 Conference on Astronomy Education: Bridging Research and Practice |
| 2019 | Ad hoc Reviewer, <i>American Journal of Physics</i> , <i>CBE-Life Sciences Education</i> , <i>International Journal of Science Education</i> , <i>Journal of College Science Teaching</i> , <i>Journal of Experimental Education</i> , <i>Research in Science Education</i> , <i>Science & Education</i> , <i>The Physics Teacher</i> , <i>The Science Teacher</i> |
| 2018 | Ad hoc Reviewer, <i>American Journal of Physics</i> , <i>International Journal of Engineering Pedagogy</i> , <i>International Journal of Science Education</i> , <i>Journal of Experimental Education</i> , <i>Physical Review Physics Education Research</i> , <i>Research in Science Education</i> , <i>School Science & Mathematics</i> , <i>The Physics Teacher</i> , <i>The Science Teacher</i> |

2018–2022	Member, Education Committee, American Astronomical Society
2007–present	Presider, multiple National Meetings, American Association of Physics Teachers
2017–2018	Chair, Ad hoc Committee on Code of Conduct (implementation improvement), American Association of Physics Teachers
2017	Past President, American Association of Physics Teachers. Also served as member, Board of Directors; Chair, Awards Committee; Chair, Committee on Governance Structure; Chair, Review Board; member, Finance Committee; member, Publications Committee.
2017	Ad hoc Reviewer, <i>International Journal of Science Education</i> , <i>Journal of Geoscience Education</i> , <i>Journal of Science Teacher Education</i> , <i>The Earth Scientist</i> , <i>The Physics Teacher</i> , <i>The Science Teacher</i> , and <i>Robotic Telescopes</i> , <i>Student Research and Education (RTSRE) Conference Proceedings</i>
2017	Reviewer, Division C - Learning and Instruction - Section 1d: Science, 2018 Annual Meeting of the American Educational Research Association
2017	Reviewer, Bloomsbury Academic
2016–2018	Guest Editor, Focused Collection on Astronomy Education Research, <i>Physical Review Physics Education Research</i>
2016	President, American Association of Physics Teachers. Also served as Chair, Board of Directors; Chair, Meeting of the Members; Chair, Executive Officer Review Committee; member, Awards Committee; member, Committee on Governance Structure; member, Review Board.
2016	Ad hoc Reviewer, <i>American Journal of Physics</i> , <i>International Journal of Science Education</i> , <i>Journal of Educational Research</i> , <i>Journal of Research in Science Teaching</i> , <i>Research in Science Education</i>
2016	Reviewer, Ford Foundation Dissertation Fellowship Program
2015–2021	AAPT Representative, Education Liaison Committee, American Institute of Physics. Chair, 2015–2017.
2015	President-Elect, American Association of Physics Teachers. Also served as member, Board of Directors; Chair, Programs Committee (first half of term); Chair, Executive Programs Committee; member, Meetings Committee; member, Review Board; member, Executive Officer Review Committee.
2015	Ad hoc Reviewer, <i>American Journal of Physics</i> , <i>International Journal of Science Education</i> , <i>Journal of Research in Science Teaching</i> , <i>Research in Science Education</i> , <i>Science & Education</i> , <i>The Physics Teacher</i>
2014	Vice President, American Association of Physics Teachers. Also served as member, Executive Board; member (first half of term) and Chair (second half), Programs Committee; member, Meetings Committee.
2014	Ad hoc Reviewer, <i>International Journal of Science Education</i> , <i>Journal of Research in Astronomy Education and Outreach</i> , <i>Journal of Research in Science Teaching</i> , <i>Journal of Science Teacher Education</i> , <i>Physical Review Special Topics—Physics Education Research</i> , <i>Research in Science Education</i> , <i>The Physics Teacher</i>

2013	Ad hoc Reviewer, <i>American Journal of Physics</i> , <i>International Journal of Science Education</i> , <i>Journal of Science and Technology Education</i>
2012, 2011, 2009	Presider, National Association of Research in Science Teaching Annual Meetings
2012–2013	Director, Far West Region, Association of Science Teacher Education
2012	Ad hoc Reviewer, <i>International Journal of Science Education</i> , <i>Research in Science Education</i>
2011	Ad hoc Reviewer, <i>American Journal of Physics</i> , <i>International Journal of Science Education</i>
2010–2014	Advisory Board Member, <i>The Classroom Astronomer</i> .
2010–2013	Editorial Board Member, <i>The Physics Teacher</i>
2010	Grant Proposal Reviewer, NASA
2010	Ad hoc Reviewer, <i>International Journal of Science Education</i> , <i>Journal of Science and Technology Education</i>
2009–2013	Editorial Review Board Member, <i>Journal of Science Teacher Education</i>
2009–2012, 2004–2007	Member, Area Committee on Space Science and Astronomy, American Association of Physics Teachers. Also Chair, 2006–2007; Vice-chair 2010–2011; Chair 2011–2012
2009	Ad hoc Reviewer, <i>International Journal of Science Education</i>
2008–2021	Editorial Board Member, <i>Journal of College Science Teaching</i>
2008–2016	Editorial Board Member, <i>The Science Teacher</i>
2008	Proposal Reviewer, Strand 5 College Science Teaching and Learning, 2009 Annual Meeting of the National Association for Research in Science Teaching
2007–2013	Ad hoc Reviewer, <i>Astronomy Education Review</i>
2007–2010	Organizer/Presider, National Meetings of the American Association of Physics Teachers
2004–2005	Ad hoc Reviewer, <i>The Physics Teacher</i>
<i>Regional, State, and Local Community</i>	
2011–2012	Member, Nevada Implementation Team for Next Generation Science Standards
2011–2012	Member, Nevada STEM Stakeholders Committee
2011–2012	Secretary, Southern Nevada Science Teachers Association
2011	Member, Clark County School District Science Sequence Revision Focus Group
2008–2013	Section Representative, Southern Nevada Section, American Association of Physics Teachers. Also President (2008–2010); Co-Founder, with Doug Lombardi and John Farley

- 2008–2011 University Liaison, Southern Nevada Science Teachers Association. Also Secretary, 2011–2012
- 2008 Member, Nevada Selection Committee, Presidential Award for Excellence in Mathematics and Science Teaching. Also invited for 2009 selection committee.
- 2007–2010 Higher Education Representative for Southern Nevada, Nevada State Science Teachers Association
- 2006–2009 Member, Nevada State Science Committee
- 2006 Reviewer, Clark County School District, Elementary Science Materials Adoption. Also invited for 2007 High School Science Materials Adoption committee.

University-Level

- 2019–2022 Member, Bargaining Units Liaison Committee, Faculty Senate, TU
- 2018–2021 College of Education and Human Development Representative, Faculty Senate, TU
- 2012–2013 Chair, Search Committee for STEM Grant Proposal Writer and Coordinator, Center for Mathematics, Science, and Engineering Education, University of Nevada, Las Vegas (UNLV) [two searches]
- 2011–2012 Member, General Education Advisory Committee, UNLV
- 2009, 2008 Faculty Marshal, Spring Commencement, UNLV

College-Level

- 2017, 2015 Member, College of Education Merit Review Committee, TU
- 2015–2016 Liaison, STEM Learning Special Interest Group, College of Education, TU
- 2014–2015 Member, College of Education Faculty Recognition and Resources Committee, TU
- 2012 Member, COE Task Force on General Education Reform, UNLV

Department-Level

- 2013–present Member, Middle Grades and Secondary Education Program Committee (2019-present), Department of Teaching & Learning, TU. Formerly Secondary Education Program Committee (2013-2019)
- 2011–2013 Coordinator, Science Content Interest Group, Department of Teaching & Learning, UNLV
- 2011–2013, 2006–2008 Member, Doctoral Studies Committee, Department of Curriculum & Instruction, UNLV
- 2010 Assistant Professor Representative, Department Chair Nomination Committee, Department of Curriculum & Instruction, UNLV

2010–2011	Pretenure Faculty Representative, Chair’s Advisory Board, Department of Curriculum & Instruction, UNLV
2010–2013	Member, Sunshine Committee, Department of Curriculum & Instruction, UNLV
2010, 2006–2007	Member, Search Committee for Science Education Faculty, Department of Curriculum & Instruction, UNLV
2008–2013	Member, Masters Studies Committee, Department of Curriculum & Instruction, UNLV
2006–2011	Member, Science Content Interest Group, Department of Curriculum & Instruction, UNLV
2004–2006	Graduate Student Representative, Graduate Committee, Department of Teaching & Teacher Education, UA
2004–2005	Graduate Student Representative, Search Committee for Mathematics Education Faculty, Department of Teaching & Teacher Education, UA

EVALUATION AND RESEARCH REPORTS

Bailey, J. M. (2021). *S-STEM Scholars Program: Evaluation Report, Year 4*, submitted to Dr. Deepika Khilnaney, Lehigh Carbon Community College, submitted 30 September 2021. Evaluation of the S-STEM Scholars Program.

Related reports:

S-STEM Scholars Program: Evaluation Report, Year 3, submitted 14 December 2020.

S-STEM Scholars Program: Evaluation Report, Year 2, submitted 18 December 2019.

S-STEM Scholars Program: Evaluation Report, Year 1, submitted 10 December 2018.

Bailey, J. M. (2012). *FINESSE evaluation report, part 16: Supplemental report*, submitted to Dr. Stephanie Shipp and Ms. Christine Shupla, Lunar and Planetary Institute, 16 September 2012. Evaluation of the Faculty Institutes in NASA Earth and Space Science Education (FINESSE) program.

Related reports:

FINESSE evaluation report, part 15: Final program report, submitted 16 September 2012.

FINESSE evaluation report, part 14: Year three, submitted 6 September 2012.

FINESSE evaluation report, part 13: Association for Science Teacher Education institute 2012, submitted 6 September 2012.

FINESSE evaluation report, part 12: National Association of Community College Teacher Education Programs institute 2012, submitted 2 February 2012.

FINESSE evaluation report, part 11: Association for Science Teacher Education institute 2011, submitted 30 January 2012.

FINESSE evaluation report, part 10: American Geophysical Union institute 2010, submitted 30 January 2012.

FINESSE evaluation report, part 9: Year two, submitted 29 December 2010.

FINESSE evaluation report, part 8: Telephone Interviews, submitted 20 December 2010.

FINESSE evaluation report, part 7: National Association of Community College Teacher Education Programs institute 2010, submitted 20 September 2010.

FINESSE evaluation report, part 6: Association for Science Teacher Education institute 2010, submitted 14 February 2010.

FINESSE evaluation report, part 5: Year one, submitted 17 August 2009.

FINESSE evaluation report, part 4: National Association of Community College Teacher Education Programs institute, submitted 10 August 2009.

FINESSE evaluation report, part 3: Association for Science Teacher Education institute, submitted 21 February 2009.

FINESSE evaluation report, part 2: American Astronomical Society institute, submitted 2 February 2009.

FINESSE evaluation report, part 1: Initial workshop design and planning, submitted 2 January 2009.

Bailey, J. M., & Nagamine, K. (2009). *Final report: Implementing learner-centered strategies in introductory astronomy courses: A case study of a new professor*, submitted to the UNLV Office of Research and Graduate Studies, 31 August.

Bailey, J. M. (2007). *Understanding galaxies through their electromagnetic radiation: A Hubble Space Telescope Cycle 14 E/PO grant project*, submitted to Dr. Catherine Garmany and Dr. Arjun Dey, National Optical Astronomy Observatory, and Mr. Chris Martin, Howenstine Magnet School, 19 December. Evaluation of the initial testing of a suite of inquiry-oriented astronomy projects for high school students.

Bailey, J. M. (2006). *ASP E/PO conference evaluation report*, submitted to Mr. Michael Bennett, Astronomical Society of the Pacific, and Dr. Catherine Garmany, National Optical Astronomy Observatory, 17 January. Evaluation of the Astronomical Society of the Pacific's 117th Annual Meeting (Building Community: The Emerging EPO Profession), Tucson, AZ, 14-16 September 2005.

Bailey, J. M. (2004). *"It All Adds Up: Making Math the Language of Science" program evaluation report*, submitted to Ms. Rachel J. Hughes, University of Arizona, 11 October. Evaluation of an 18-day professional development experience for K-8 teachers to increase the use of inquiry methods and the integration of math and science.

Bailey, J. M., & Slater, T. F. (2003). *Project evaluation report summer five: 2003 Toward Other Planetary Systems (TOPS) Teacher Enhancement Project*, submitted to Dr. Karen Meech, University of Hawai'i, August. Evaluation of a 20-day professional development experience for K-12 teachers on astronomy, astrobiology, and archaeoastronomy content and its integration into the classrooms.

Related reports:

Bailey, J. M., & Slater, T. F. (2002). *Project evaluation report summer four: 2002 Toward Other Planetary Systems (TOPS) Teacher Enhancement Project*, submitted November.

Bailey, J. M., Skala, C., & Slater, T. F. (2001). *Project evaluation report summer three: 2001 Toward Other Planetary Systems (TOPS) Teacher Enhancement Project*, submitted December.

Bailey, J. M. (2002). *2002: A Montana Space Odyssey project evaluation*, submitted to Dr. Kim Obbink and Dr. William Hiscock, Montana State University, 2 August. Evaluation of a 12-day summer camp for rising 8th and 9th grade students on space science and astronomy.

Related report:

Bailey, J. M. (2001). *2001: A Montana Space Odyssey project evaluation*, submitted 25 July.

Bailey, J. M. (2001). *Final project evaluation report: Princeton Earth Physics Project*, submitted to Dr. Robert Phinney and Dr. Daniel Steinberg, Princeton University, 20 August. Evaluation of a program to create a national network of seismometers that has grades 6-12 students and teachers involved in the collection and analysis of seismology data.

Related reports:

Project evaluation report, part IV: Princeton Earth Physics Project, submitted 1 August 2001.

Project evaluation report, part III: Princeton Earth Physics Project, submitted 2 May 2001.

Project evaluation report, part II: Princeton Earth Physics Project, submitted 15 November 2000.

Project evaluation report, part I: Princeton Earth Physics Project, submitted 12 October 2000.

PROFESSIONAL MEMBERSHIPS

American Association of Physics Teachers (AAPT)

American Astronomical Society (AAS)

American Educational Research Association (AERA)

American Physical Society (APS)

Association for Science Teacher Education (ASTE)

NARST, A Worldwide Organization for Improving Science Teaching and Learning Through Research

National Association of Geoscience Teachers (NAGT)

National Earth Science Teachers Association (NESTA)

National Science Teaching Association (NSTA)

~~ PROFESSIONAL REFERENCES ~~

Contact information for references will be provided upon request.