DOUG LOMBARDI

Associate Professor

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EDUCATION

Ph.D., Educational Psychology, University of Nevada, Las Vegas, May 2012.

Dissertation: *Students' conceptions about climate change: Using critical evaluation to influence plausibility reappraisals and knowledge reconstruction*, Committee co-chairs, Dr. Gale M. Sinatra & Dr. E. Michael Nussbaum.

M.S., Education, University of Tennessee, Knoxville, December 2000.

M.S., Environmental Engineering, University of Tennessee, Knoxville, May 1996.

Thesis: *A protocol for modeling atmospheric transport and deposition of acidic species in East Tennessee using MESOPUFF II*, Committee co-chairs, Dr. Terry Miller & Dr. Wayne Davis.

B.S., Mechanical Engineering, University of Colorado, Boulder, May 1987.

PROFESSIONAL EXPERIENCE

Associate Professor, Department of Human Development and Quantitative Methodology, University of Maryland, College Park, 2019-present.

Associate Professor, Department of Teaching and Learning, Temple University, 2018-2019.

Assistant Professor, Department of Teaching and Learning, Temple University, 2012-2018.

Adjunct Faculty, University of Nevada, Las Vegas, 2007-2012.

Project Facilitator, Program Evaluator, & Regional Science Education Trainer, Southern Nevada Regional Professional Development Program, 2006-2012.

Education & Public Outreach Manager, NASA Phoenix Mars Mission, University of Arizona, 2004-2006.

Astronomy/High School Program Coordinator, NASA Science, Engineering, Mathematics, & Aerospace Academy, Central Arizona College, 2003-2004.

High School Science Teacher, Oak Ridge High School, Oak Ridge, Tennessee & Canyon del Oro High School, Tucson, Arizona, 1999-2003.

Engineer/Research Associate, Oak Ridge National Laboratory, Oak Ridge, TN & American Bureau of Shipping, Knoxville, Tennessee, 1991-1999.

Staff Weather Officer, United States Air Force. 1988-1991.

PROFESSIONAL CERTIFICATIONS

Tennessee Professional Teaching Licenses: Physics & Mathematics, 2002-2022.

Nevada License for Educational Personnel: Secondary Physical Science, 2006-2015.

Arizona Department of Education Certificate: Secondary Physics & Mathematics, 2003-2005.

AWARDS AND HONORS

Richard E. Snow Award for Early Contributions, American Psychological Association, Division 15 (Educational Psychology), 2019.

Outstanding Early Career Scholar Award, Division C (Learning & Instruction), American Educational Research Association, 2018.

Early Career Research Award, NARST: A Worldwide Organization for Improving Science Teaching and Learning through Research, 2018.

Outstanding Reviewer, *Review of Educational Research*, American Educational Research Association, 2018.

Learning and Instruction, Certificate for Highly Cited Research for the article "Plausibility reappraisals and shifts in middle school students' climate change conceptions," awarded December 2016.

Routledge Behavioral Science Journals #3 most highly cited article in 2015 for the paper "The challenges of defining and measuring student engagement in science."

Temple University College of Education Undergraduate Teaching Award for Tenure-Track Faculty, 2014-2015.

The International Journal of Climate Change: Impacts and Responses International Award for Excellence for the article "Leveraging higher-education instructors in the climate literacy effort: Factors related to university faculty's propensity to teach climate change," awarded July 2013.

Certificate of Appreciation, Office of the Governor, State of Nevada, and "Keys to the City" & status of Honorary Citizen of Carson City, NV, proclamation by Robert L. Cromwell, Mayor, for service rendered in writing Nevada's Race to the Top grant application, 2011.

SCHOLARSHIP

AWARDED RESEARCH GRANTS

INFEWS/T3 RCN: Cultivating a National Collaborative for Research on Food, Energy, and Water Education, C. Forbes (PI) and others; **D. Lombardi (senior personnel),** funded by the National Science Foundation, EHR Core Research (ECR) Program, $374,982 total, funded September 1, 2019 to August 31, 2025.

Engaging Students in Scientific Practices: Evaluating Evidence and Explanation in Secondary Earth and Space Science, **D. Lombardi (PI)**, J. M. Bailey (Co-PI), D. Governor (Co-PI), C. McAuliffe (Co-PI), S. A. Buxner (Co-PI), funded by the National Science Foundation, Discovery Research in K-12 Program, $2,326,662 total, funded September 1, 2017 to August 31, 2021. Project website at https://serc.carleton.edu/mel/index.html

Towards an Urban Geoscience Pedagogy that Promotes Student Interest, Critical Thinking, Academic Achievement, and Value Of Science Content—supplemental funding for a graduate student (S. Burrell) research project to the larger project titled, Developing Critical Evaluation as a Scientific Habit of Mind: Instructional Scaffolds for Secondary Earth Science, **D. Lombardi (PI)**, J. M. Bailey (Co-PI), funded by the National Science Foundation, Discovery Research in K-12 Program, $34,999 supplemental, funded September 1, 2017 to June 30, 2018.

Understanding and Promoting Spatial Learning Processes in the Geosciences, T. Shipley (PI), A. Devatzes, (Co-PI), **D. Lombardi (Co-PI)**, N. LaDue (Co-PI), $749,711 total, National Science Foundation, Science of Learning: Collaborative Networks (SL-CN) Program, funded September 1, 2016 to August 31, 2019. Project website at http://serc.carleton.edu/getspatial/index.html.

Temple Teacher Residency Program, W. Brooks, (PI), J. Boyle (Co-PI), **D. Lombardi (Co-PI)**, K. Newton (Co-PI), funded by the Teacher Quality Partnership Grant Program, U.S. Department of Education, Office of Innovation and Improvement, $2,241,597 total, funded October 1, 2014 to September 30, 2019. Project website at https://sites.temple.edu/templeteacherresidency/teachphiladelphiastem/team/.

Developing Critical Evaluation as a Scientific Habit of Mind: Instructional Scaffolds for Secondary Earth Science, **D. Lombardi (PI)**, J. M. Bailey (Co-PI), funded by the National Science Foundation, Discovery Research in K-12 Program, $449,567 total, funded September 1, 2013 to June 30, 2017. Project website at http://sites.temple.edu/meldiagrams/.

The Nevada Mathematics and Science Leadership Cadre, J. M. Bailey (PI), E. C. Keppelmann (Co-I), C. Hardy (Co-I), **D. Lombardi (Co-I)**, D. Hepworth (Co-I), & J. Hopkins (Co-I), Nevada Mathematics & Science Partnership Program, $461,929 total, funded March 1, 2008 to May 31, 2011.

REFEREED JOURNAL ARTICLES

Saribaş, D., *Ceyhan, G., & **Lombardi, D.** (2019). Zooming in on scientific practices and evidence-based explanations during teaching NOS: A study in pre-service teacher education program. *Elementary Education Online*, *18*(1), 343-366.

Ponnock, A. R., Torsney, B. M., & **Lombardi, D.** (2018). Motivational differences throughout teachers' preparation and career. *New Waves Educational Research & Development*, *21*(2), 26-45.

Torsney, B. M., **Lombardi, D.**, & Ponnock, A. R. (2018). The role of values in pre-service teachers' intentions for professional engagement. *Educational Psychology*. doi: 10.1080/01443410.2018.1504892 [online first version available at https://www.tandfonline.com/doi/full/10.1080/01443410.2018.1504892]

*McLaughlin, J. A., **Lombardi, D.**, Holzer, M. A., Hopkins, J. D., Davatzes, A., Jaeger, A. J., & Shipley, T. F. (2018). What's hidden beneath? Using spatial sketching and feedback to help deepen students' understanding of Earth's subsurface. *The Science Teacher, 54*(3), 54-60.

Lombardi, D., Bailey, J. M., Bickel, E. S., & *Burrell, S. (2018). Scaffolding scientific thinking: Students' evaluations and judgments during Earth science knowledge construction. *Contemporary Educational Psychology, 54*, 184-198. doi: 10.1016/j.cedpsych.2018.06.008

Lombardi, D., *Bickel, E. S., Bailey, J. M., & *Burrell, S. (2018). High school students' evaluations, plausibility (re) appraisals, and knowledge about topics in Earth science. *Science Education, 102*(1), 153-177. doi: 10.1002/sce.21315

Bailey, J. M., **Lombardi, D.**, Cordova, 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.

Lombardi, D., *Bickel, E. S., Brandt, C. B., & *Burg, C. (2017). Categorising students' evaluations of evidence and explanations about climate change. *International Journal of Global Warming, 12*(3/4), 313-330. doi: 10.1504/IJGW.2017.10005879

*Torsney, B. M., *Ponnock, A., & **Lombardi, D.** (2017). The role of values in pre-service teachers' decision to teach. *The Teacher Educator, 52*(1), 39-56.

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*Asterisks indicate that the co-author was a graduate or undergraduate student during manuscript or presentation development.

Lombardi, D. (2016). Beyond the controversy: Instructional scaffolds to promote critical evaluation and understanding of Earth science. *The Earth Scientist, 32*(2), 5-10.

Bailey, J. M., Girtain, C. M., & **Lombardi, D.** (2016). Understanding the formation of Earth's Moon. *The Earth Scientist, 32*(2), 11-16.

Holzer, M. A., **Lombardi, D.,** & Bailey, J. M. (2016). Wetlands: Good or bad? Evaluating competing models. *The Earth Scientist, 32*(2), 17-21.

Hopkins, J. D., Crones, P., *Burrell, S. Bailey, J. M., & **Lombardi, D.** (2016). Evaluating the connections between fracking and earthquakes. *The Earth Scientist, 32*(2), 23-30.

*Bickel, E. S., & **Lombardi, D.** (2016). Assessing students' evaluations on the model-evidence link diagram. *The Earth Scientist, 32*(2), 31-36.

Lombardi, D., Brandt, C. B., *Bickel, E. S., & *Burg, C. (2016). Students' evaluations about climate change. *International Journal of Science Education*, *38*(8), 1392-1414. doi: 10.1080/09500693.2016.1193912

Lombardi, D., Nussbaum, E. M., & Sinatra, G. M. (2016). Plausibility judgments in conceptual change and epistemic cognition. *Educational Psychologist, 51*(1), 35-56. doi: 10.1080/00461520.2015.1113134

Lombardi, D., *Danielson, R. W., & *Young, N. (2016). A plausible connection: Models examining the relations between evaluation, plausibility, and the refutation text effect. *Learning and Instruction*, *44*, 74-86. doi: 10.1016/j.learninstruc.2016.03.003

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

*Danielson, R. W., & **Lombardi, D.** (2015). More money, less acceptance: The relationship between GDP, science literacy, and acceptance of human-induced climate change. *The International Journal of Climate Change: Impacts and Responses*, *7*(4), 13-23.

Ryu, S., & **Lombardi, D.** (2015). Coding classroom interactions for collective and individual engagement. *Educational Psychologist*, *50*(1), 70-83. doi: 10.1080/00461520.2014.1001891

Sinatra, G. M., Heddy, B. C., & **Lombardi, D.** (2015). The challenges of defining and measuring student engagement in science. *Educational Psychologist*, *50*(1), 1-13. doi: 10.1080/00461520.2014.1002924

*Cordova, J. R., Sinatra, G. M., Broughton, S. H., Taasoobshirazi, G., and **Lombardi, D.** (2014). Self-efficacy, interest, prior knowledge, and confidence in prior knowledge: Influences on conceptual change. *Contemporary Educational Psychology, 39*, 164-174. doi: 10.1016/j.cedpsych.2014.03.006

Lombardi, D., Seyranian, V., & Sinatra, G. M. (2014). Source effects and plausibility judgments when reading about climate change. *Discourse Processes, 51*(1/2), 75-92. doi: 10.1080/0163853X.2013.855049

*Beck, A., Sinatra, G. M., & **Lombardi, D.** (2013). Leveraging higher-education instructors in the climate literacy effort: Factors related to university faculty's propensity to teach climate change. *The International Journal of Climate Change: Impacts and Responses, 4*(4), 1-17.

Lombardi, D., Sibley, B., & Carroll, K. (2013). What's the alternative? Using model-evidence link diagrams to weigh alternative models in argumentation. *The Science Teacher, 80*(5), 36-41. doi: 10.2505/4/tst13_080_05_50

Lombardi, D., Sinatra, G. M., & Nussbaum, E. M. (2013). Plausibility reappraisals and shifts in middle school students' climate change conceptions. *Learning and Instruction*, *27*, 50-62. doi: 10.1016/j.learninstruc.2013.03.001

Lombardi, D., & Sinatra, G. M. (2013). Emotions about teaching about human-induced climate change. *International Journal of Science Education, 35*, 167-191. doi: 10.1080/09500693.2012.738372

Lombardi, D., & Sinatra, G. M. (2012). College students' perceptions about the plausibility of human-induced climate change. *Research in Science Education*, *42*, 201-217. doi: 10.1007/s11165-010-9196-z

Sinatra, G. M., Kardash, C. M., Taasoobshirazi, G., & **Lombardi, D.** (2012). Promoting attitude change and expressed willingness to take action toward climate change in college students. *Instructional Science, 40*, 1-17. doi: 10.1007/s11251-011-9166-5

BOOK

Van Meter, P., List, A., **Lombardi, D.**, & Kendeou, P. (Eds.) (in press). *Handbook of learning from multiple representations and perspectives*. New York, NY: Routledge.

EDITED BOOK CHAPTERS

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

Lombardi, D. Heddy, B. C., & Matewos, A. M. (in press). Values, attitudes, and beliefs: Cognitive filters shaping integration of multiple representations and multiple perspectives. In Van Meter, P., List, A., **Lombardi, D.**, & Kendeou, P. (Eds.), *Handbook of learning from multiple representations and perspectives*. New York, NY: Routledge.

List, A., Van Meter, P., **Lombardi, D., &** Kendeou, P. (in press). Loggers and conservationists: Navigating the multiple resource forest through the trees. In Van Meter, P., List, A., **Lombardi, D.**, & Kendeou, P. (Eds.), *Handbook of learning from multiple representations and perspectives*. New York, NY: Routledge.

Van Meter, P., List, A., Kendeou, P., & **Lombardi, D.** (in press). The multiple resources learning framework: Learning from multiple representations and multiple perspectives. In Van Meter, P., List, A., **Lombardi, D.**, & Kendeou, P. (Eds.), *Handbook of learning from multiple representations and perspectives*. New York, NY: Routledge.

Lombardi, D., & Sinatra, G. M. (2018). Don't believe everything you think: Reappraising judgments about conceptions. In T. G. Amin, & O. Levrini (Eds.), *Converging perspectives on conceptual change: Mapping a new paradigm in the learning sciences* (pp. 237-244). New York, NY: Routledge.

Sinatra, G. M., Broughton, S. H., & **Lombardi, D.** (2014). Emotions in science education. In R. Pekrun & L. Linnenbrink-Garcia (Eds.), *International handbook of emotions in education* (pp. 415-436). New York, NY: Taylor & Francis. doi: 10.4324/9780203148211.ch21

INVITED EDITED ARTICLES

Lombardi, D. (2019). Thinking scientifically in a changing world. *Science Brief: Psychological Science Agenda, 33*(1). Retrieved from https://www.apa.org/science/about/psa/2019/01/changing-world. [re-posted on *Psych Learning Curve*, March 11, 2019, http://psychlearningcurve.org/thinking-scientifically-in-a-changing-world/]

Sinatra, G. M., & **Lombardi, D.** (2013). The cognitive science of science: Explanation, discovery, and conceptual change [Review of the book *The cognitive science of science: Explanation, discovery, and conceptual change*, by P. Thagard]. *Science Education, 97*, 637-639. doi: 10.1002/sce.21062

MANUSCRIPTS IN REVIEW AND PREPARATION

Sinatra, G. M., & **Lombardi, D.** (2019, in review). Evaluating sources of scientific evidence and claims in the post-truth era may require plausibility judgments. *Educational Psychologist*. Manuscript submitted for publication.

Christensen, D. M, & **Lombardi, D.** (2019, in review). Understanding biological evolution through computational thinking: A K-12 learning progression. Science & Education. Manuscript submitted for publication.

Lombardi, D., Shipley, T. F., LaDue, Nicole D., Bailey, J. M., Ballen, C. J., Cooper, M. M.,...van der Hoeven Kraft (2020, in preparation). The curious construct of active learning. *Psychological Science in the Public Interest*. Manuscript commissioned for publication.

Lombardi, D., & Danielson, R. W. (2020, in preparation). On learning and teaching for conceptual change. In A. M. O'Donnell, J. Reeve, & N. Barnes (Eds.), *Oxford Handbook of Educational Psychology*, Oxford, UK: Oxford University Press.

Lombardi, D. (2020, in preparation). Science learning and teaching. In P. Schutz, & K. R. Muis (Eds.), *Handbook of Educational Psychology*, 4th edition. New York, NY: Routledge, Taylor Francis.

INVITED PRESENTATIONS

Lombardi, D. (2019). *Think again: Shifting epistemic judgments toward the scientific.* Paper presented at the Annual Meeting of the American Educational Research Association. Toronto, ON.

Lombardi, D. (2018). *Cultivating climate change literacy through scaffolded critique and evaluation*. Paper presented at the 2018 Geological Society of America Annual Meeting, Indianapolis, IN, *Geological Society of America abstracts with programs, 50* (6). doi: 10.1130/abs/2018AM-320472

Lombardi, D. (2018). *Developing scaffolds to promote geoscience thinking: The rigor and promise of systemic classroom-based research*. Paper presented at the 2018 Geological Society of America Annual Meeting, Indianapolis, IN, *Geological Society of America abstracts with programs, 50* (6). doi: 10.1130/abs/2018AM-320347

Lombardi, D. (2018). *Scaffolding scientific thinking to facilitate students' knowledge construction about Earth and space science topics*. Paper presented at the Earth and Space Science Department Seminar Series, West Chester University, PA, September.

Lombardi, D. (2018). *Think you know it? Well, think again: Reappraising plausibility judgments to facilitate knowledge reconstruction in science*. Paper presented as part of the invited symposium, "Changing how we think about knowledge: Exploring the relationships between epistemic cognition and conceptual change," 11th International Conference on Conceptual Change, Alpen-Adria-Universität, Klagenfurt, Austria, August.

Lombardi, D. (2018). *Learning and teaching about climate change: An educational psychology perspective*. Invited discussant presentation as part of the collaborative program symposium, "Psychology's role in addressing climate change—state of knowledge and a call for action," 126th Annual American Psychological Association Convention, San Francisco.

Lombardi, D. (2018). *Facilitating students' critique, evaluation, and argument about freshwater resources*. Poster presented at "Toward a national collaborative for food, energy, & water systems education (NC-FEW): Innovating teaching and learning in the food-energy-water-nexus," Arlington, VA, June.

Lombardi, D. (2017). *Understanding climate change: Challenges and opportunities for learning and teaching*. Paper presented at the Earth & Environmental Science Department Seminar, Temple University, Philadelphia, PA, April.

Lombardi, D. (2017). *Evaluation, plausibility, & knowledge: Braided constructs*. Paper presented at the Proof Comprehension Research Group, Rutgers University, March.

Lombardi, D. (2017). *Students' plausibility (re) appraisals, and knowledge about climate change, fracking, wetlands, and Earth's Moon*. Paper presented at the Rutgers University Graduate School of Education Learning Sciences Brown Bag Seminar, March.

Lombardi, D. (2016). *Understanding climate change: Challenges and opportunities for teaching and learning*. Paper presented at the 2016 Winter National Meeting of the American Association of Physics Teachers, New Orleans, LA.

Lombardi, D. (2014). *Promoting critical evaluation about scientific explanations using model-evidence link diagrams*. Paper presented at the 2014 Geological Society of America Annual Meeting, Vancouver, BC.

Lombardi, D. (2014). *Promoting scientific thinking through instruction: Plausibility, critical evaluation and the MEL*. Paper presented at the Temple University Spatial Intelligence and Learning Center Seminar, March.

Lombardi, D. (2014). *Source effects and plausibility judgments when reading about climate change*. Paper presented at the Temple University Department of Teaching & Learning Brown Bag Seminar, February.

Lombardi, D. (2013). *Teaching astronomy as knowledge construction*. Paper presented at the 2013 Winter National Meeting of the American Association of Physics Teachers, New Orleans, LA.

Lombardi, D. (2012). *Reconstructing conceptions of climate change: Plausibility, the MEL, and other tales*. Paper presented at the Rutgers University Graduate School of Education Learning Sciences Brown Bag Seminar, October.

Lombardi, D. (2012). *Conceptions about climate change: Using critical evaluation to influence plausibility reappraisals and knowledge reconstruction*. Paper presented at the University of Wyoming Science Education Online Video Conferencing Colloquium, September.

Lombardi, D. (2012). *Teaching and learning for the environment: Perspectives on understandings, values, and actions*. Session chair at the Annual Meeting of the American Educational Research Association, Vancouver, BC.

Lombardi, D. (2012). *Constructing deep time knowledge*. Participant essay for the 2012 Teaching about Time Workshop, Tempe, AZ , available online at http://serc.carleton.edu/NAGTWorkshops/time/workshop2012/essays/lombardi.html.

Lombardi, D. (2011). *Using critical evaluation to reappraise plausibility judgments: A critical cognitive component of conceptual change*. Paper presented at the Fall Meeting of the American Geophysical Union, San Francisco, CA.

Sinatra, G. M., & **Lombardi, D.** (2010). *It wasn't any colder when I was a kid: Heating up instruction on climate change*. Paper presented at the Nevada Climate Change Seminar Series, Las Vegas, NV.

Lombardi, D. (2010). *Ice core records: From volcanoes to stars*. Paper presented at the Arizona Science Teachers Association Area Conference, Mesa, AZ.

Young, D. L., & **Lombardi, D.** (2010). *Using variable star data in education/Science Olympiad*. Paper presented at the Fall 2010 Citizen Sky Workshop, San Francisco, CA.

Lombardi, D. (2009). *Pushing past Posner: Modern conceptual change theories*. Paper presented at the 2009 Winter National Meeting of the American Association of Physics Teachers, Chicago, IL.

Lombardi, D. (2007). *Decoding starlight*. Workshop conducted at the T^3 Regional Mathematics and Science Conference, Las Vegas, NV.

Lombardi, D. (2006). *Martian water exposed*. Paper presented at the Symposium on Powerful Teaching, Harriman, TN.

Lombardi, D. (2005). *The Phoenix scout mission to Mars*. Paper presented at the American Institute of Aeronautics and Astronautics Passport to the Future Educator Workshop, Tucson, AZ.

Lombardi, D. (2005). *The Phoenix Mars mission's education and public outreach program focus on astrobiology themes*. Paper presented at the NASA Astrobiology Institute's Biennial Meeting. Boulder, CO.

Lombardi, D., Slater, T. F., & Prather, E. E. (2004). *Astronomy as a unifying theme for building a physics curriculum*. Paper presented at the 2004 Summer National Meeting of the American Association of Physics Teachers, Sacramento, CA.

Slater, T. F., **Lombardi, D.**, & Prather, E. E. (2004). *Supplementing the physics curriculum with astronomy examples*. Paper presented at the 2014 Summer National Meeting of the American Association of Physics Teachers, Sacramento, CA.

Lombardi, D. (2003). *Student reactions to using Chandra data in the classroom*. Paper presented at the 2003 Summer National Meeting of the American Association of Physics Teachers, Madison, WI.

REFEREED PRESENTATIONS

Lombardi, D., & Bailey, J. M. (2020). *Science strategy interventions*. Paper submitted for presentation as part of the symposium, "Investigating strategies and strategy use: Where do we go from here?" Annual Meeting of the American Educational Research Association, San Francisco, CA.

Lombardi, D. (2020). *Theoretical viewpoints on the integration of multiple representations and multiple perspectives*. Paper submitted for presentation as part of the symposium, "Learning from multiple representations and multiple perspectives: Points of commonality and pathways for future research" Annual Meeting of the American Educational Research Association, San Francisco, CA.

Matewos, A. A., **Lombardi, D.**, Bailey, J. M., & *Herrick, I. (2020). From science student to conceptual agent: Examining the individual shifts in engagement during scaffolded instruction. Paper submitted for presentation at the Annual Meeting of the American Educational Research Association, San Francisco, CA.

Luccioni, N., **Lombardi, D.**, & Bailey, J. M. (2020). *Predicting elementary student self-efficacy, interest, and enjoyment of science*. Paper submitted for presentation at the Annual Meeting of the American Educational Research Association, San Francisco, CA.

Lombardi, D., *Klavon, T. G., Holzer, M. A., & *Kendall, R. (2019). *Instructional scaffolds to shift students' epistemic evaluations toward the scientific*. Paper presented as part of the symposium, "Identifying literacies protective against misinformation and science skepticism," the 18th Biannual Meeting of the European Association for Research on Learning and Instruction, Aachen, Germany.

Lombardi, D., *Klavon, T. G., Holzer, M. A., & *Kendall, R. (2019). *Evaluating explanations about water resources: Scaffolds to shift students' epistemic judgments and agency toward the scientific*. Paper presented as part of the symposium, "Investigating epistemic cognition in relation to food, water, and energy (FEW) issues," Annual Meeting of the American Educational Research Association, Toronto, ON.

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

*Klavon, T. G., Bailey, J. M., Holzer, M. A., *Kendall, R., & **Lombardi, D.** (2019). *The impact of evidence choices on students' plausibility shifts*. Paper presentated at the 2019 National Consortium for Instruction and Cognition Annual Meeting, Toronto, ON.

*McLaughlin, J. A., **Lombardi, D.**, Jaeger, A. J., & Shipley, T. F. (2018). *High school students' spatial reasoning about earth's subsurface*. Paper presented at the 2018 National Consortium for Instruction and Cognition Annual Meeting, New York, NY.

*Kendall, R., **Lombardi, D.**, *Burrell, S., *Klavon, T. G., *Uslu, B. & Bailey, J. M. (2018). *Crafting knowledge instruments to measure effectiveness of science instruction*. Paper presented at the 2018 National Consortium for Instruction and Cognition Annual Meeting, New York, NY.

*Luccioni, N. A., & **Lombardi, D.** (2018). *Elementary student perception of their teacher's self-efficacy, interest, and enjoyment in science and science teaching*. Poster presented at the National Association for Research in Science Teaching 2018 Annual International Meeting, Atlanta, GA.

*Burrell, S., **Lombardi, D.**, Bickel, E. S., & Bailey, J. M. (2018). *Development of a model describing scientific thinking in Earth science students*. Poster presented at the National Association for Research in Science Teaching 2018 Annual International Meeting, Atlanta, GA.

*Myer, R. A., Jaeger, A. J., *McLaughlin, J. A., **Lombardi, D.**, Shipley, T. F., & Davatzes, A. K. (2017). *Methods for improving students' spatial reasoning about Earth's subsurface*. Poster presented at the 2017 Geological Society of America Annual Meeting, Seattle, WA.

Heddy, B. C., & **Lombardi, D.** (2017). *The morality of climate change: Students' perceptions of the morality and plausibility of climate change*. Poster presented at the 125th Annual American Psychological Association Convention, Washington, D.C.

Lombardi, D., Heddy, B. C., & *Chancey, J. B. (2017). *Evaluations about climate change: Relations between moral convictions, plausibility, attitudes, and knowledge*. Poster presented at the 27th Annual Meeting of the Society for Text & Discourse, Philadelphia, Pennsylvania.

Davatzes, A. K., Shipley, T., LaDue, N., & **Lombardi, D.** (2017). *An interdisciplinary approach to building students' spatial thinking skills from high school through college*. Paper presented at the 2017 Goldschmidt Conference, Paris, France.

*Burrell, S., & **Lombardi, D.** (2017). *Democracy and Earth science education: Instructional scaffolds that promote evidence-based reasoning and critical evaluation*. Paper presented at the 8th New DEEL [Democratic Ethical Educational Leadership] Conference, Philadelphia, PA.

Torsney, B. M., **Lombardi, D.**, & *Ponnock, A. (2017). *Changes in pre-service teachers' motivation throughout a teacher preparation program*. Poster presented at the Annual Meeting of the American Educational Research Association, San Antonio, TX.

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

*Burrell, S., & **Lombardi, D.** (2017). *Understanding the relationship between teacher use of epistemic operations and complexity of students' explanations*. Paper presented at the 2017 National Consortium for Instruction and Cognition Annual Meeting, San Antonio, TX.

*Ceyhan, G. D., Saribaş, D., & **Lombardi, D.** (2017). *Pre-service teachers' thinking about evidence and evaluations of trustworthiness of the claims in socio-scientific issues*. Paper presented at the National Association for Research in Science Teaching 2017 Annual International Meeting, San Antonio, TX.

Saribaş, D., *Ceyhan, G. D., & **Lombardi, D.** (2017). *Pre-service teachers' preference to apply NOS aspects and evidence-based thinking in their teaching*. Paper submitted for presented at the National Association for Research in Science Teaching 2017 Annual International Meeting, San Antonio, TX.

Bailey, J. M., **Lombardi, D.**, *Bickel, E. S., & *Burrell, S. (2017). *Deepening high school students' knowledge about earth science topics through scientific evaluation and plausibility reappraisal.* Paper presented at the National Association for Research in Science Teaching 2017 Annual International Meeting, San Antonio, TX.

*Burrell, S., & **Lombardi, D.** (2016). *The critical evaluation task (CET) as an instructional scaffold to support evidence-based reasoning: Analysis of student learning outcomes.* Paper presented at the 2016 Geological Society of America Annual Meeting, Denver, CO.

*Torsney, B. M., **Lombardi, D.**, & *Ponnock, A. (2016). *The role of and relationships between epistemic, social utility, and personal utility values in pre-service teachers' decision to enter the teaching profession*. Poster presented at the 15th International Conference on Motivation 2016, Thessaloniki, Greece.

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

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

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

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

*Torsney, B. M., **Lombardi, D.**, Litchfield, B., & Hassel, L. (2016). *The motivational values of teachers: The effects of social utility value, personal utility value, and epistemic value on choosing to teach*. Poster presented at the Annual Meeting of the American Educational Research Association, Washington, DC.

*Bickel, E. S., **Lombardi, D.**, Bailey, J. M., & *Burrell, S. (2016). *Students' evaluations of opposing arguments*. Paper presented at the 2016 National Consortium for Instruction and Cognition Annual Meeting, Washington, DC.

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

*Torsney, B. M., **Lombardi, D.**, & Ponnock, A. (2016). *Motivational characteristics of K-12 teachers: Determining the values that influence pre-service teachers' decision to teach*. Poster presented at the 2016 National Consortium for Instruction and Cognition Annual Meeting, Washington, DC.

*Tomaszewski, J., & **Lombardi, D.** (2016). *Increasing student confidence and conceptual change with demonstrations*. Poster presented at the 2016 Winter National Meeting of the American Association of Physics Teachers, New Orleans, LA.

*Young, N., *Danielson, R., & **Lombardi, D.** (2015). *Measuring engagement with the potential consequences of climate change*. Paper presented at the Fall Meeting of the American Geophysical Union, San Francisco, CA.

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

*Ceyhan, G. D., Muğaloğlu, E. Z., **Lombardi, D.**, & Erduran, S. (2015). *Using the Model Evidence Link Diagram in Science Classrooms*. Workshop presentation at the International Conference of Educational Research, Istanbul, Turkey.

*Burrell, S., **Lombardi, D.**, Bailey, J. M., & *Bickel, E. S. (2015). *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 2015 Geological Society of America Annual Meeting, Baltimore, MD.

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

Lombardi, D., *Danielson, R. W., & *Young, N. (2015). *Exploring relationships between plausibility, critical evaluation, the refutation text effect, and students' climate change knowledge*. Round table paper presented at the Annual Meeting of the American Educational Research Association, Chicago, IL.

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

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

*Torsney, B. M., & **Lombardi, D.** (2015). *Relationships among value judgments: Personal utility, social utility, and epistemic aims*. Poster presented at the 2015 National Consortium for Instruction and Cognition Annual Meeting, Chicago, IL.

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

*Danielson, R. W., *Young, N., & **Lombardi, D.** (2015). *A plausible model? Refutation texts foster the connection between critical evaluation, plausibility, and knowledge*. Poster presented at the National Association for Research in Science Teaching 2015 Annual International Meeting, Chicago, IL.

Lombardi, D., Holzer, M., Hopkins, J. D., Bailey, J. M., Girtain, C., & Crones, P. (2015). *Critical thinking in earth science: Using the model-evidence link diagram*. Workshop presented as a National Association for Research in Science Teaching (NARST)-sponsored session at the at the 2015 National Conference of the National Science Teachers Association, Chicago, IL.

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

Seyranian, V., *Hossepian, K., **Lombardi, D.**, & Sinatra, G. M. (2014). *The context comparison model: Examining attitude change and the plausibility of global climate change*. Paper presented at the 122nd American Psychological Association Annual Convention, Washington, D.C. doi: 10.1037/e551322014-001

Lombardi, D., Sinatra, G. M., Seyranian, V., *Danielson, R., *Young, N., Beck, A., Stave, K., & Galvan, C. (2014). *Climate change education: Warm processes in learning about a hot topic*. Symposium presented at the Sixth International Conference on Climate: Impacts and Responses, Reykjavík, Iceland.

Lombardi, D., Seyranian, V., & Sinatra, G. M. (2014). *Source validity and plausibility perceptions about climate change*. Paper presented at the Annual Meeting of the American Educational Research Association, Philadelphia, PA.

Lombardi, D., Brandt, C. B., & *Burg, C. (2014). *The relationship between students' critical evaluation abilities and plausibility reappraisal of climate change*. Poster presented at the National Association for Research in Science Teaching 2014 Annual International Conference, Pittsburgh, PA.

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

*Young, N., *Danielson, R., & **Lombardi, D.** (2013). *Exploring undergraduate engagement with the consequences of climate change*. Poster presented at the Fall Meeting of the American Geophysical Union, San Francisco, CA.

Niepold, F., Sinatra, G. M., & **Lombardi, D.** (2013). *Effective teacher practice on the plausibility of human-induced climate change*. Poster presented at the Fall Meeting of the American Geophysical Union, San Francisco, CA.

Lombardi, D., Sinatra, G. M., & Nussbaum, E. M. (2013). Bridging the plausibility gap in socio-scientific issues. In D. Kienhues (Chair), *Dealing with (socio-) scientific controversies: Epistemic, motivational, and cognitive dimensions*. Symposium paper presented at the 15th Biannual Meeting of the European Association for Research on Learning and Instruction, Munich, Germany.

Bailey, J. M., **Lombardi, D.**, Sinatra, G. M., & *Cordova, J. R. (2013). *The impact of self-efficacy on conceptual change: A study in astronomy*. Paper presented at the 15th Biannual meeting of the European Association for Research on Learning and Instruction, Munich, Germany.

Lombardi, D., Sinatra, G. M., & Nussbaum, E. M. (2013). *Using critical evaluation to change middle school students' plausibility appraisals and conceptions of climate change*. Poster presented at the Annual Meeting of the American Educational Research Association. San Francisco, CA.

Broughton, S. H., Sinatra, G. M., & **Lombardi, D.** (2013). Assessing topic emotions in science. In N. Griffin (Chair), *The intersect of social and emotional learning with academic achievement: Perspectives from research and practice*. Symposium paper presented at the Annual Meeting of the American Educational Research Association, San Francisco, CA.

Lombardi, D. (2013). *Engagement in science learning: How do we know it when we see it?* Symposium session chair at the Annual Meeting of the American Educational Research Association, San Francisco, CA.

*Beck, A., Sinatra, G. M., **Lombardi, D.**, Findlay, J., & Northrup, A. (2012). *Surveying perceptions of climate change in higher education: Professors' perspectives*. Paper presented at the Fourth International Conference on Climate Change, Seattle, WA.

Lombardi, D. & Sinatra, G. M. (2012). *Teachers' perceptions about climate change: Using critical evaluation to influence plausibility reappraisals and knowledge reconstruction*. Poster presented at the Annual Meeting of the American Educational Research Association, Vancouver, BC.

Bailey, J. M., *Rehmat, A. P., **Lombardi, D.**, & Keppelmann, E. (2012). *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.

Carroll, K., **Lombardi, D.**, & Sibley, B. (2012). *MEL! We're not talking about the diner*. Workshop presented at the Southern Nevada Regional Mathematics and Science Conference, Las Vegas, NV.

Lombardi, D., & Sinatra, G. M. (2011). *Teachers' emotions and plausibility perceptions of human-induced climate change*. Poster presented at the Biannual Meeting of the 14th European Association for Research on Learning and Instruction, Exeter, UK.

Lombardi, D., & Sinatra, G. M. (2011). *Emotions when teaching about human-induced climate change*. Poster presented at the Annual Meeting of the American Educational Research Association, New Orleans, LA.

Bailey, J. M., **Lombardi, D.**, & Sinatra, G. M. (2011). *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.

Lombardi, D., & Young, D. L. (2011). *Decoding starlight: From pixels to images*. Workshop most recently presented at the National Science Teachers Association Area Conference, Seattle, WA.

Lombardi, D., & Young, D. L. (2011). *Ice core records: From volcanoes to stars*. Workshop most recently presented at the National Science Teachers Association Area Conference, Seattle, WA.

Lombardi, D., & Young, D. L. (2011). *NASA's high-energy vision: Chandra and the X-ray universe*. Workshop most recently presented at the National Science Teachers Association Area Conference, Seattle, WA.

Lombardi, D. (2011). *Stellar life cycles*. Workshop most recently presented at the National Science Teachers Association Area Conference, New Orleans, LA.

Lombardi, D., Perry, P. B., & Young, D. L. (2011). *Stellar bar codes*. Poster presented at the 2011 Summer National Meeting of the American Association of Physics Teachers, Omaha, NE.

Young, D. L., **Lombardi, D.**, Perry, P. B., & Dreschhoff, G. A. M. (2011). *Evidence of historical supernovae in ice cores*. Poster presented at the 2011 Summer National Meeting of the American Astronomical Society, Boston, MA.

Perry, P., Young, D. L., & **Lombardi, D.** (2011). *The physics of supernovae*. Workshop most recently presented at the National Science Teachers Association National Conference, San Francisco, CA.

Lombardi, D., Young, D. L., & Perry, P. B. (2011). *Drilling for supernovae in ice cores*. Poster presented at the 2011 Winter National Meeting of the American Association of Physics Teachers Winter Meeting, Jacksonville, FL.

Lombardi, D., & Sinatra, G. M. (2010). Students' plausibility perceptions of human-induced climate change. In Gomez, K., Lyons, L., & Radinsky, J. (Eds.), *Learning in the Disciplines: Proceedings of the 9th International Conference of the Learning Sciences (ICLS 2010) - Volume 2, Short Papers, Symposia, and Selected Abstracts*. Chicago, IL: International Society of the Learning Sciences.

Lombardi, D., & Sinatra, G. M. (2010). *Students' understanding of weather and climate distinctions, deep time, and plausibility perceptions of human-induced climate change*. Poster presented at the National Consortium for Instruction and Cognition Annual Meeting, Denver, CO.

Lombardi, D. (2010). *Modeling the spectrum*. Workshop most recently presented at the National Science Teachers Association Area Conference, Nashville, TN.

Lombardi, D., Taasoobshirazi, G., Sinatra, G. M., & Kardash, C. M. (2009). *College students' understanding of and reactions to global warming*. Poster presented at the 13th Biannual Meeting of the European Association for Research on Learning and Instruction, Amsterdam, the Netherlands.

Keppelmann, E., Bailey, J. M., & **Lombardi, D.** (2009). *The Nevada Mathematics 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.

Lombardi, D. (2009). *Student perceptions about the plausibility of human-induced climate change*. Paper presented at the 2nd UNLV Urban Sustainability Initiative Conference-Education for a Global Future: 21st Century Challenges in Sustainability & Climate Change Education, Las Vegas, NV.

Lombardi, D., & Young, D. L. (2007). *Recording the rhythms of stellar heartbeats*. Workshop presented at the National Science Teachers Association Area Conference, Birmingham, AL.

Lombardi, D., & Young, D. L. (2007). *Imaging the invisible*. Workshop most recently presented at the National Science Teachers Association Area Conference. Birmingham, AL.

Lombardi, D. & Young, D. L. (2007). *Electromagnetic pasta*. Workshop most recently presented at the National Science Teachers Association Area Conference, Denver, CO.

Lombardi, D., & Young, D. L. (2007). *Spectroscopy and supernovae remnants*. Workshop presented at the National Science Teachers Association Area Conference, Denver, CO.

Schmidt, L. J., Smith, P. H., & **Lombardi, D.** (2006). *Mars 101: Linking educational content to mission purpose on the Phoenix Mars lander mission website*. Paper presented at the Fall Meeting of the American Geophysical Union, San Francisco, CA.

Keller, J. M., *Buxner, S. R., Douglas, T., **Lombardi, D.**, & Shaner, A. (2006). *Sampling and studying permafrost in Alaska and on Mars: Mars arctic regions science field experience for secondary teachers (MARSFEST)*. Paper presented at the Fall Meeting of the American Geophysical Union, San Francisco, CA.

*Shaner, A., Slater, T. F., & **Lombardi, D.** (2006). *Year 1 evaluation results of the Phoenix Mars mission E/PO program*. Poster presented at the Astronomical Society of the Pacific's Engaging the EPO Community: Best Practices, New Approaches Conference, Baltimore, MD.

*Shaner, A., Lara, M., Wilkins, K., Tidwell, L., & **Lombardi, D.** (2006). *Marsbots: A national robotics education learning module for grades 3 and 4*. Paper presented at the Annual Lunar and Planetary Science Conference, Houston, TX.

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

*Shaner, A., Slater, T. F., & **Lombardi, D.** (2005). *Evaluating a goal-driven E/PO program: The Phoenix Mars scout mission*. Poster presented at the Astronomical Society of the Pacific's Building Community: The Emerging EPO Profession Conference, Tucson, AZ.

Lombardi, D. (2004). *Implementing a goal-driven education and public outreach program*. Poster presented at the Fall Meeting of the American Geophysical Union, San Francisco, CA.

Lombardi, D., Adler, E. L., Young, D. L., Matilsky, T., & Lestition, K. (2003). *Imaging the X-ray universe*. Workshop presented at the 2003 Winter National Meeting of the American Association of Physics Teachers, Austin, TX.

Lombardi, D., & Lombardi, E. A. (2001). *Starting the year with the Big Bang*. Paper presented at the 2001 Winter National Meeting of the American Association of Physics Teachers, San Diego, CA.

DATASETS AND INSTRUCTIONAL AND ASSESSMENT ARTICLES/MATERIALS

Lombardi, D., et al. (2019). *Build-a-MEL instructional scaffolds and materials for Earth and space science*, available online at https://sites.temple.edu/slrg/projects/.

Nez, R. & **Lombardi, D.** (2019). MEL2 Project. *Databrary*. doi: 10.17910/b7.860

*McLaughlin, Jessica A., **Lombardi, D.**, Davatzes, Alexandra, Jaeger, Allison, J., & Shipley, T. F. (2018). Grand Canyon Cross Section Lab. GET spatial learning: Teaching activities, available online at https://serc.carleton.edu/getspatial/activities/grand_canyon_lab.html.

Whitmeyer, S., & **Lombardi, D.** (2017, February 28). Inquiry-focused exercises using digital technologies. *GET spatial learning blog: Postcards from the trading zone*, available online at http://serc.carleton.edu/getspatial/blog/digitaltech.html.

Brudzinski, M., & **Lombardi, D.** (2016, December 1). Teaching geospatially in an online world. *GET spatial learning blog: Postcards from the trading zone*, available online at http://serc.carleton.edu/getspatial/blog/geospatial_online.html.

Lombardi, D., Bailey, J. M., Holzer, M. A., Hopkins, J. D., Girtain, C., Crones, P., & Burrell, S. (2016). *Model-evidence link diagrams and materials for Earth and space science*, available online at https://serc.carleton.edu/mel/teaching_resources/index.html.

Lombardi, D. (2012). Decoding starlight: From pixels to images. *The Earth Scientist, 28,* 7-11. [Published prior to journal instituting peer review]

Lombardi, D. (2012). Investigating supernova remnants. *The Earth Scientist, 28*, 27-31. [Published prior to journal instituting peer review]

Sinatra, G. M., Kardash, C. M., Taasoobshirazi, G., & **Lombardi, D.** (2012). Willingness to take action questionnaire. *PsycTESTS Database Record*. doi: 10.1037/t40008-000

Sinatra, G. M., Kardash, C. M., Taasoobshirazi, G., & **Lombardi, D.** (2012). Attitudes about global warming measure. *PsycTESTS Database Record*. doi: 10.1037/t39544-000

Lombardi, D. (2012). Scientific questions. *Shop TALK, 7*(2), 15-16.

Lombardi, D. (2011). POE: Assessing for conceptual change in the science classroom. *Shop TALK, 6*(3), 6-7.

Lombardi, D., & Noland, T. (2011). New directions in science education standards: To the Common Core and beyond. *Shop TALK, 6*(2), 11-12.

Dees, K., & **Lombardi, D.** (Eds.) (2011). *Workshop facilitator's guides for Common Core State Standards: Elementary mathematics*. Guides developed for counting & cardinality, K-2; fractions, 3-5; measurement, data, & geometry, K-2, 3-5; numbers & operations, K-2, 3-5; and operations & algebraic thinking, K-2, 3-5.

Lombardi, D. (2010). Bridging the chasm. *Shop TALK, 6*(1), 7-8.

Marconi, E., & **Lombardi, D.** (2010). Everyone needs closure. *Shop TALK, 5*(3), 6-7.

Lombardi, D. (2010). The scientists' notebook. *Shop TALK, 5*(2), 12-13.

Lombardi, D. (2009). Science is a process. *Shop TALK, 5*(1), 8-9.

Lombardi, D. (2009). Getting students to think scientifically: Concept mapping and interactive notebooks. *Shop TALK, 4*(3), 21-22.

Marconi, E., Smith, C., & **Lombardi, D.** (2009). Depth of knowledge: An effective tool for educating students. *Shop TALK, 4*(2), 3-4.

Sibley, B., Bostic, J., Ebert, E., **Lombardi, D.**, & Marconi, M. (Eds.) (2009). *Targeted interventions for proficiency in science*, available online at http://rpdp.net/sciencetips_v3/.

Lombardi, D. (2008). The myth about misconceptions. *Shop TALK, 3*(1), 8-9.

Lombardi, D., Bailey, J. M., Bostic, J., & Sibley, B. (2007). Science high school proficiency exam: Basic exam design information. *Shop TALK, 2*(3), 16-17.

Lombardi, D. (2007). Guided practice in inquiry. *Shop TALK, 2*(2), 16-17.

Lombardi, D., Bennett, J., Donahue, M., Schneider, N., & Voit, M. (2007). *Themes of the times on astronomy* (1st & 2nd ed.), a collection of 50 astronomy articles from *The New York Times*, each with an introduction giving a context for that discovery and associated exercises for each chapter in the *Cosmic Perspectives* textbook (3rd ed.). San Francisco, CA: Pearson Addison, Wesley.

Lara, M., Wilkins, K., Shaner, A., Tidwell, L., & **Lombardi, D.** (2006). *Marsbots: An integrated elementary school unit*, available online at http://phoenix.lpl.arizona.edu/edu_robotics.php.

Lombardi, D. (2005). Water and life fact sheet, available online at http://phoenix.lpl.arizona.edu/pdf/water_and_life.pdf.

Lombardi, D. (2003). *Decoding starlight: From pixels to images*, available online at http://chandra.harvard.edu/edu/formal/imaging/index.html.

REPORTS

Lombardi, D., Smith, M. C., & Hanlon, W. R. (2012). *Southern Nevada Regional Professional Development Program 2011-2012 Self-evaluation*. North Las Vegas, NV. Reports prepared annually from 2007-2012.

TEACHING, ADVISING, & SUPERVISION

GRADUATE COURSES TAUGHT

Problem Solving and Reasoning in STEM Education. Department of Teaching and Learning, Temple University, Philadelphia, PA. Spring 2019.

Teaching Science for Secondary School Teachers. Department of Teaching and Learning, Temple University, Philadelphia, PA. Fall 2017.

Teaching Science in the Middle Grades. Department of Teaching and Learning, Temple University, Philadelphia, PA. Fall 2013, Fall 2017.

Child and Adolescent Development. Department of Teaching and Learning, Temple University, Philadelphia, PA. Spring 2017.

Research Seminar in Mathematics and Science Education. Department of Teaching and Learning, Temple University, Philadelphia, PA. Spring 2016.

Social Context in Mathematics and Science Education. Department of Teaching and Learning, Temple University, Philadelphia, PA. Spring 2014.

Instructional Methods in Elementary School Science. Department of Curriculum & Instruction, University of Nevada, Las Vegas. Spring 2010.

Common Core State Standards Mathematics for Grades 3-5. Department of Curriculum & Instruction, University of Nevada, Las Vegas. Summer 2012.

Mathematics & Science Workshop. Department of Curriculum & Instruction, University of Nevada, Las Vegas. Various semesters from Summer 2007 to Summer 2012.

Astronomy for Teachers. Montana State University, National Teacher Education Network (Teaching Assistant). Spring 2005.

Integrating Mathematics & Science for High School Teachers. Department of Curriculum & Instruction, University of Nevada, Las Vegas. Spring 2010.

Force & Motion for K-8 Teachers. Southern Utah University, Cedar City, UT. Spring 2008.

UNDERGRADUATE COURSES TAUGHT

IPOV Team Project Seminar III. Gemstone Honors College, University of Maryland, College Park. Fall 2019.

Cognitive Development in the Content Areas. Department of Teaching and Learning, Temple University, Philadelphia, PA. Fall 2014, Fall 2015, Fall 2016, Fall 2017.

Applications of Learning Theory to Middle Grades Education. Department of Teaching and Learning, Temple University, Philadelphia, PA. Fall 2014, Fall 2015, Fall 2016, Fall 2017.

Teaching and Learning Science in the Middle Grades. Department of Teaching and Learning, Temple University, Philadelphia, PA. Spring 2013, Spring 2015, Spring 2017.

Science for the Early Years. Department of Teaching and Learning, Temple University, Philadelphia, PA. Fall 2012, Fall 2013.

Teaching Elementary School Science. Department of Teaching and Learning, University of Nevada, Las Vegas. Spring 2011, Spring 2012.

DOCTORAL ADVISOR AND COMMITTEE CHAIR

Shondricka Burrell, Ph.D., College of Education, Temple University. Committee Chair. Dissertation: *Towards a geoscience pedagogy: A socio-cognitive model*, defense passed on December 7, 2018.

Noelle Luccioni, Ph.D., College of Education, Temple University. Committee Chair. Dissertation: *Elementary student perceptions of their teachers' self-efficacy, interest, and enjoyment of science and science teaching*, defense passed on December 4, 2018.

Jeremy Tomaszewski, Ph.D., College of Education, Temple University. Committee Chair. Dissertation: *Understanding the role of confidence when targeting naïve conceptions of force and motion using demonstrations*, defense passed on June 10, 2016.

Dana Christensen, Ph.D. student, College of Education, Temple University. Coursework in progress.

POST-DOCTORAL AND DOCTORAL RESEARCH ASSISTANT SUPERVISION

Ananya M. Matewos, Postdoctoral Fellow, College of Education, Temple University. Researcher, 2018.

Shondricka Burrell, Ph.D. student, College of Education, Temple University. Research Assistant, 2014-2018.

Gerardine Jean-Louis, Ph.D. candidate, College of Education, Temple University. Research Assistant, 2012-2013; Spring 2014.

DOCTORAL COMMITTEES

Dana Miller-Cotto, Ph.D. candidate, College of Education, Temple University. Committee Member. Dissertation: *The role of prior knowledge, executive function, and perceived cognitive load on the effectiveness of faded worked examples in geometry*, defense passed on March 29, 2017.

Steven K. Peterson, Ph.D., College of Education, Temple University. Committee Member. Dissertation: *Evaluating an intervention for promoting student identity exploration, motivation, and achievement in high school mathematics classrooms*, defense passed on November 1, 2016.

Ryan Hassler, Ph.D., College of Education, Temple University. Committee Member. Dissertation: *Mathematical comprehension facilitated by situation models: Learning opportunities for inverse relations in elementary school*, defense passed on September 20, 2016.

Kayla Heffernan, Ph.D., College of Education, Temple University. Reader. Dissertation: *Promoting preservice teachers' mathematics identity exploration*, defense passed on March 30, 2016.

Maggie Helene Pedone, Ph.D. College of Education, Temple University. Committee Member. Dissertation: *Persistence of undergraduate women in STEM fields*, defense passed on March 30, 2016.

Benjamin M. Torsney, Ph.D., College of Education, Temple University. Reader. Dissertation: Motivational characteristics of K-12 teachers: Determining the values that influence pre-service teachers' decision to teach, defense passed on March 8, 2016.

Margaret A. Holzer, Ph.D. Graduate School of Education, Rutgers University. Committee Member. Dissertation: *Building bridges to climate literacy through the development of systems and spatial thinking skills*, defense passed on January 29, 2016.

Catherine Willard, Ph.D., College of Education, Temple University. Committee Member. Dissertation: *The effects of collaborative reasoning on students' mathematical reasoning and performance*, defense passed on April 1, 2015.

Gerardine Jean-Louis, Ph.D., College of Education, Temple University. Reader. Dissertation: *Skill, will, and self-regulation: Assessing the learning and study strategies of university summer bridge program students*, defense passed on November 13, 2014.

Ting Dai, Ph.D., College of Education, Temple University. Reader. Dissertation: *Thinking about online sources: Exploring students' epistemic cognition in Internet-based chemistry learning*, defense passed on May 14, 2014.

John D. Yoder, Jr., Ph.D., College of Education, Temple University. Reader. Dissertation: *The impact of a virtual learning environment on student achievement in genetics*, defense passed on April 24, 2014.

Matthew F. Hartwell, Ph.D., College of Education, Temple University. Reader. Dissertation: *Relevance in the science classroom: A multidimensional analysis*, defense passed on April 24, 2014.

Kamala Kandi, Ph.D., College of Education, Temple University. Reader. Dissertation: *The impact of discovery learning on achievement and students' self-efficacy in science*, defense passed on July 25, 2013.

UNDERGRADUATE SUPERVISION

Reed Kendall, College of Education, Temple University. Undergraduate Research Assistant, 2018

Elliot S. Bickel, B.S., College of Science and Technology, Temple University. Undergraduate Research Assistant, 2014-2016.

Colin Burg, B.S., College of Education, Temple University. Undergraduate Research Assistant, 2013-2014.

STUDENT TEACHING COACHING

Anderson Laventure, ED.M., Middle Grades Program, College of Education, Temple University. Spring 2018.

Sedric Bearden, ED.M., Middle Grades Program, College of Education, Temple University. Fall 2016.

Chelsea Steven, ED.M., Middle Grades Program, College of Education, Temple University. Fall 2016.

Shawn Tavernia, ED.M., Middle Grades Program, College of Education, Temple University. Spring 2016.

Michele Davis, B.S., Middle Grades Program, College of Education, Temple University. Fall 2015.

Syretta Thomas, B.S., Middle Grades Program, College of Education, Temple University. Fall 2015.

SERVICE

EDITORIAL POSITIONS

Journal for Research in Science Teaching, Associate Editor, 2019-2025.

Contemporary Educational Psychology, Associate Editor, 2018-present.

Sinatra, G. M., and Lombardi, D. (Eds.) (2015). Engagement in the context of science learning [Special Issue]. *Educational Psychologist*, *50*(1).

EDITORIAL BOARD MEMBERSHIP

Journal of Educational Psychology, Editorial Board, 2020 (upcoming)-present.

Review of Educational Research, Editorial Board, 2018-present.

Contemporary Educational Psychology, Editorial Board, 2014-2018.

The Journal of Experimental Education, Consulting Editor, 2014-2018.

Journal of Astronomy & Earth Sciences Education, Editorial Advisory Board, 2015-2017.

Physical Review-Physics Education Research, Editorial Advisory Board, Focused Collection on Astronomy Education Research, 2016-2017.

AD-HOC REVIEWER

American Educational Research Journal, 2010.

Cognition and Instruction, 2016.

Contemporary Educational Psychology, 2013.

Discourse Processes, 2013, 2015-2017.

Educational Psychologist, 2013-2016.

Educational Psychology Review, 2016-2017.

Educational Researcher, 2017-2018.

Eurasia Journal of Mathematics, Science and Technology Education, 2015.

Global and Planetary Change, 2017.

International Journal of Science Education, 2012-2019.

International Perspectives in Psychology: Research, Practice, Consultation, 2012.

Journal of Research in Reading, 2013.

Journal of Research in Science Teaching, 2013, 2014, 2017.

Learning and Instruction, 2012-2013, 2015-2016, 2018.

Nature Climate Change, 2014.

Physical Review-Physics Education Research, 2017.

Research in Science Education, 2011-2014.

Science and Education, 2018-2019.

Science Education, 2011, 2013, 2015, 2017.

PROJECT BOARDS

Bridging Science Education and Psychology Perspectives to Support Science Literacy Theory and Instruction, J. Dauer (PI), funded by the National Science Foundation, EHR Core Research (ECR): Building Capacity in STEM Education Research Program, $349,836 total, funded January 1, 2020 to December 31, 2021, Advisory Board Member.

The Value of Click-on-Diagram Questions in Geoscience, N. LaDue (PI), T. F. Shipley (Co-PI), funded by the National Science Foundation, Improving Undergraduate STEM Education Program, $300,000 total, funded October 1, 2018 to September 30, 2021, Advisory Board Member.

PROFESSIONAL ORGANIZATION BOARDS AND COMMITTEES

National Earth Science Teachers Association, Director at Large, 2018-2020.

American Educational Research Association, Division C, Graduate Student Research Excellence Award Co-Chair, 2019.

American Educational Research Association, Division C, Section 1d: Science Program Co-Chair, 2017-2019.

National Consortium for Instruction & Cognition; Board Member, 2015-2019; Newsletter Editor, 2011-2013.

Pennsylvania Science Teachers Association, Board of Directors: Recording Secretary, 2015-2017, and Eastern College Representative, 2014-2015.

Pennsylvania Department of Education Committee, Science Education Framework Developer, 2013.

Nevada STEM Education Stakeholders Committee, 2011-2012.

Nevada STEM Education Coalition, 2011-2012.

Southern Nevada Section, American Association of Physics Teachers; Co-Founder with Dr. Janelle Bailey and Dr. John Farley; First Vice President, 2009-2010; President, 2010-2011; Past President, 2011-2012

Losing the Lake Project (funded by Nevada NSF EPSCoR), Advisory Committee Member, 2009-2011.

Southern Nevada Science Teachers Association; Vice President, 2008-2009; President, 2009-2010; Past President, 2010-2012.

Southern Nevada Regional Mathematics & Science Conference Organizing Committee; Conference Co-Chair, 2007-2010; Science Program Chair, 2010-2012.

Committee on Space Science & Astronomy, American Association of Physics Teachers; Chair, 2010-2011; Member, 2008-2010.

Nevada State Science Education Committee, 2006-2012.

Education Committee for the American Association of Variable Star Observers, 2006-2010.

NASA Science Education & Public Outreach Grant Proposals, Review Panel, 2006-2009.

Arizona Section, American Association of Physics Teachers, Section Representative, 2004-2006.

UNIVERSITY AND COLLEGE SERVICE

College of Education Senate, University of Maryland, 2019-2020.

Graduate Board, Temple University, 2016-2019.

Faculty Senate Steering Committee, College of Education Representative, Temple University, 2019

College of Education, Ph.D. Committee, Temple University, 2018-2019.

College of Education Representative, Temple University Faculty Senate, 2015-2018.

College of Education Ph.D. Program Restructuring Working Group, Temple University, Summer 2016.

College of Education Curriculum Committee Member, Temple University, Fall 2016.

College of Education Undergraduate Research Faculty Liaison, Temple University, 2015.

Discussion leader: *Best practices in science education with Nobel Laureate Carl Weiman*. Teaching & Learning Center, Temple University, February 2014.

DEPARTMENTAL SERVICE

Fellowships and Awards Committee, Department of Human Development and Quantitative Methodology, 2019-2020.

Middle Grades Education Program Committee, Department of Teaching and Learning, Temple University, 2014-2019.

Teacher Education Coordinating Committee Member, Department of Teaching and Learning, 2016-present; College of Education, Temple University, 2014-2015.

Mathematics and Science Education Concentration Area Interest Group, Department of Teaching and Learning, Temple University, 2012-2019.

PECT PreK-4 Test Preparation Workshop (Focus on Module 3: Science), leader of a 5-day workshop in May 2014, with two 3-hour workshops Department of Teaching and Learning, Temple University, conducted in Spring 2013 and Spring 2014.

Graduate Certification Committee, Department of Teaching and Learning, Temple University, 2013-2014.

SEARCH COMMITTEES

Member, Urban Education Faculty, Tenure-Track, College of Education, Temple University, 2017.

Member, Instructional Learning and Technology Faculty, Tenure-Track, College of Education, Temple University, 2016.

Member, Mathematics Education Faculty, Tenure-Track, College of Education, Temple University, 2015.

PROFESSIONAL ASSOCIATIONS

American Association of Physics Teachers

American Educational Research Association, Division C-Learning & Instruction

American Psychological Association, Division 15-Educational Psychology

Association for Psychological Science

National Association for Research in Science Teaching

National Consortium for Instruction and Cognition

National Earth Science Teachers Association

Pennsylvania Earth Science Teachers Association