

BROOKE A. WHITWORTH

[HTTP://BROOKEWHITWORTH.COM](http://brookewhitworth.com)

EDUCATION

Ph.D., Science Education, 2011-2014

University of Virginia, Curry School of Education, Charlottesville, VA

Dissertation: Exploring the critical role of a district science coordinator

Advisors: Randy L. Bell, Jennifer L. Chiu

Additional Committee Members: Carol A. Tomlinson, Jennifer L. Maeng

M.A.Ed., Secondary Education, 2002

Wake Forest University, Master Teacher Fellow Program, Winston-Salem, NC

Professional teaching license (Chemistry 9-12, Japanese), State of North Carolina (2002-2022)

B.A., Chemistry, 2001

William Jewell College, Liberty, MO

AWARDS & HONORS

- **College of Education Excellence in Research Award – Junior Faculty**, *Clemson University*, 2021
- **Project Kaleidoscope (PKAL) STEM Leadership Institute Scholar**, *AAC&U*, 2021
- **Research Grant Fellow**, *Clemson University*, 2021
- **Outstanding College Science Teacher of the Year**, *Mississippi Science Teachers Association*, 2019
- **Finalist for Outstanding Researcher of the Year**, *University of Mississippi*, 2019
- **Conference Paper Award V: Implications of Research for Educational Practice**, *Association of Science Teacher Education*, 2018
- **Top 1% of Peer Reviewers – Social Sciences**, *Publons Global Peer Review*, 2018
- **Finalist for College of Engineering Forestry & Natural Sciences Professor of the Year**, *Northern Arizona University*, 2017
- **Curry Trustees Fellowship**, *University of Virginia*, 2013
- **Sandra K. Abell Institute Scholar**, *National Association for Research in Science Teaching*, 2013

PROFESSIONAL EXPERIENCE

Associate Professor of Science Education, 2020-Present

Clemson University, Clemson, SC

- Curriculum and Instruction Doctoral Program Coordinator
- Instruct undergraduate and graduate courses
- Supervise, mentor, and evaluate pre-service and in-service science teachers
- Supervise graduate research assistants

Assistant Professor of Science Education, 2017-2020

The University of Mississippi, Oxford, MS

- Secondary Science Program Coordinator
- Instructed undergraduate and graduate courses
- Supervised, mentored, and evaluated pre-service and in-service science teachers
- Supervised graduate research assistants and led research team

Assistant Professor of Science Education, 2014-2017

Northern Arizona University, Flagstaff, AZ

- Instructed undergraduate and graduate courses
- Supervised, mentored, and evaluated pre-service and in-service science and math teachers
- Advised National and Arizona Science Teacher Association Student Chapter

Research Graduate Assistant, 2011-2014

University of Virginia, Charlottesville, VA

- Researched and evaluated components of the *Virginia Initiative for Science Teaching and Achievement* (VISTA) grant (\$34 million U.S. Department of Education I3 grant)
- Conducted interviews, observations, and surveys and analyzed these data
- Led group training for coaches and beginning researchers on the VISTA grant
- Wrote and edited manuscripts for publication on the VISTA Grant

University Supervisor, 2011-2013

University of Virginia, Charlottesville, VA

- Supervised, mentored, and evaluated pre-service science teachers
- Assisted in instruction of undergraduate and graduate courses

Science & Mathematics Teacher, 2008-2011

Punahou School, Honolulu, HI

- Taught courses including: physics, honors chemistry, chemistry and algebra to a diverse ethnic and academic student population
- Taught summer school courses including: honors chemistry and physics
- Developed and redesigned the physics curriculum
- Awarded Summer Curriculum Fellowship to develop kinesthetic labs for physics
- Supported school community by coaching cheerleading and assisting with YoungLife

Science Teacher, 2002-2008

University North Carolina School of the Arts, Winston-Salem, NC

- Taught various high school courses including: chemistry, physics, physical science and yearbook to young artists pursuing careers in the arts
- Appointed Science Department Chair, Chair of Science Search Committee, and to the Teaching & Learning SACS Reaccreditation Team
- Contributed to the school community by serving on the Wellness Committee, Safety Committee, Faculty Welfare Committee, various Search Committees, and Prom Committee

PEER REVIEWED PUBLICATIONS IN RESEARCH JOURNALS

Whitworth, B. A., Wilson, S.*, & Watson, S.* (2021). Examining teacher leadership as a model for improvement in science education. *Science Educator*, 28(1), 21-29. (60% contribution)

Maeng, J.L., **Whitworth, B. A.**, Bell, R.L., & Sterling, D. (2020). The effect of professional development on elementary science teachers' understanding and classroom implementation of reform-based science instruction. *Science Education*, 104, 326-353. DOI: 10.1002/sce.21562 (40% contribution)

- Moore, V., Prewitt, E., Carpenter-McCullough, A., & **Whitworth, B. A.** (2020, January). Teamwork makes the dream work: Using Team-Based Learning in the science classroom. *Journal of College Science Teaching*, 49(3), 38-46. (15% contribution)
- Whitworth, B. A.**, Rubino-Hare, L., Bloom, N. E., Walker, M. C.*, & Arendt, K.* (2020). Scaling professional development: Preparing professional development providers to lead Power of Data Teacher Workshops. *International Journal of Science Education*, 42, 1-24. DOI: 10.1080/09500693.2019.1699975 (60% contribution)
- Biggers, M., Miller, A. R., Zangori, L., & **Whitworth, B. A.** (2019). (Mis)alignments in mentorship: Exploring challenges to preservice science teacher preparation. *Journal of Science Teacher Education*, 30, 344-356. DOI: 10.1080/1046560X.2018.1562812 (20% contribution)
- Wheeler, L. B., Navy, S. L., Maeng, J.L., & **Whitworth, B. A.** (2019). Development and validation of the Classroom Observation Protocol for Engineering Design (COPED). *Journal of Research in Science Teaching*, 56, 1285-1305. DOI: 10.1002/tea.21557 (20% contribution)
- Luft, J. A., **Whitworth, B. A.**, Berry, A., Kind, V., & Navy, S. L. (2018). Science Education Trajectories: Charting the course for teachers, educators, researchers, and policy makers. *Journal of Science Teacher Education*, 30, 63-79. DOI: 10.1080/1046560X.2018.1535226 (30% contribution)
- Maeng, J. L., Bell, R. L., St. Clair, T., Gonczi, A. L., & **Whitworth, B. A.** (2018). Supporting elementary teachers' understandings and enactment of nature of science instruction: A randomized controlled trial. *International Journal of Science Education*, 40, 2245-2264. DOI:10.1080/09500693.2018.1528643. (15% contribution)
- Whitworth, B. A.**, Maeng, J. L., & Bell, R. L. (2018). Exploring practices of science coordinators participating in targeted professional development. *Science Education*, 102, 474-497. DOI: 10.1002/sce.21337 (70% contribution)
- Maeng, J. L., **Whitworth, B. A.**, Wheeler, L. B., Gonczi, A. L., & Dubois, S. L. (2017). Elementary science teachers' integration of engineering design into science Instruction: Results from a randomized controlled trial. *International Journal of Science Education*, 39, 1529-1548. DOI: 10.1080/09500693.2017.1340688 (30% contribution)
- Wheeler, L. B., Maeng, J. L., & **Whitworth, B. A.** (2017). Characterizing teaching assistants' knowledge and beliefs following professional development activities within an inquiry-based general chemistry context. *The Journal of Chemical Education*, 94(1), 19-28. DOI: 10.1021/acs.jchemed.6b00373 (20% contribution)
- Whitworth, B. A.**, Bell, R. L., Maeng, J. L., & Gonczi, A. L. (2017). Supporting the supporters: Professional development for science coordinators. *Journal of Science Teacher Education*, 28, 699-723. DOI: 10.1080/1046560X.2017.1404814 (70% contribution)
- Whitworth, B. A.**, Maeng, J. L., Wheeler, L. B., & Chiu, J. L. (2017). Investigating the role of a district science coordinator. *Journal of Research in Science Teaching*, 54, 914-936. DOI: 10.1002/tea.21391 (60% contribution)

- Gonczi, A. G., Maeng, J. L., Bell, R. L., & **Whitworth, B. A.** (2016). Situating computer simulation professional development: Does it promote inquiry based simulation use? *Computers in the Schools*, 33, 133-152. DOI: 10.1080/07380569.2016.1205351 (15% contribution)
- Rubino-Hare, L. A., **Whitworth, B. A.**, Bloom, N. E., Claesgens, J. M., Fredrickson, K. M., Henderson-Dahms, C., & Sample, J. C. (2016). Persistent teaching practices after geospatial technology professional development. *Contemporary Issues in Technology and Teacher Education*, 16(3), 208-285. Retrieved from: <http://www.citejournal.org/volume-16/issue-3-16/science/persistent-teaching-practices-after-geospatial-technology-professional-development> (30% contribution)
- Wheeler, L. B., Maeng, J. L., & **Whitworth, B. A.** (2015). Teaching assistants perceptions of a training to support an inquiry-based general chemistry laboratory course. *Chemical Education Research and Practice*, 16, 824-842. DOI: 10.1039/c5rp00104h (25% contribution)
- Whitworth, B. A.** & Chiu, J. L. (2015). Professional development and teacher change: The missing leadership link. *Journal of Science Teacher Education*, 26, 121-137. DOI: 10.1007/s10972-014-9411-2 (80% contribution)
- Wheeler, L. B., Bell, R. L., **Whitworth, B. A.**, & Maeng, J. L. (2014). The science ELF: Assessing the Enquiry Levels Framework as a heuristic for professional development. *International Journal of Science Education*, 37, 55-81. DOI: 10.1080/09500693.2014.961182 (20% contribution)

PEER REVIEWED PUBLICATIONS IN PRACTITIONER JOURNALS

- Mosely, J.J.* & **Whitworth, B. A.** (2021, July/August). The "magic" of density: A unique take on the 5E lesson. *Science Scope*, 44(6), 74-83. (30% contribution)
- Rock, C. A.* & **Whitworth, B. A.** (2021, March/April). Airbags as real-life applications for science. *The Science Teacher*, 88(4), 47-51. (30% contribution)
- Simpson, L. A.* & **Whitworth, B. A.** (2021, May/June). Science portfolios: Embedding the nature of science. *The Science Teacher*, 88(5), 58-63. (25% contribution)
- Todd, L. C.* & **Whitworth, B. A.** (2021, July/August). Going viral: Using technology in the classroom to show the spreading of viruses. *Science Scope*, 44(6), 64-73. (30% contribution)
- Henning, A.*, **Whitworth, B. A.**, & Huff Macpherson, A. (2020, February). Comics in the classroom: What's at the center of the solar system. *The Science Teacher*, 87(6), 37-43. (40% contribution)
- Wilson, S.* & **Whitworth, B. A.** (2020, November/December). Do not disturb the flow: Smoking and the cardiovascular system. *The Science Teacher*, 88(2), 54-59. (30% contribution)
- Hedman, J. O.* & **Whitworth, B. A.** (March, 2019). The science project portfolio: An approach to improve experiences and outcomes for science fair stakeholders. *Science Scope*, 42(7), 46-53. (40% contribution)
- Luft, J. A. & **Whitworth, B. A.** (January, 2019). Reaching for the future: Building a professional trajectory. *The Science Teacher*, 86(5), 34-39. (40% contribution)

- Nolan, E.*, **Whitworth, B. A.**, & Rubino-Hare, L. (November/December, 2019). A lesson in geospatial inquiry. *The Science Teacher*, 87(4), 26-33. (30% contribution)
- Simpson, L.*, & **Whitworth, B. A.** (September, 2019). Modeling for ecological engineering. *The Science Teacher*, 87(2), 31-39. (20% contribution)
- Westman, B.* & **Whitworth, B. A.** (March, 2019). Fraught with friction: Supporting student thinking using a PEOE strategy. *Science & Children*, 56(7), 44-49. (40% contribution)
- Rains, S. L.*, & **Whitworth, B. A.** (2018). A better way of farming: Building an aquaponics system for the classroom. *The Science Teacher*, 86(3), 40-45. (30% contribution)
- Beyea, S. M.* & **Whitworth, B. A.** (2017). Out in the field: Learning about plant diversity. *Science Scope*, 41(3), 50-58. (40% contribution)
- Whitworth, B. A.** & Wheeler, L. B. (2017). Is it engineering or not? *The Science Teacher*, 84(5), 25-29. (80% contribution)
- Whitworth, B. A.**, Beyea, S. M.*, & Purell, M. (2016, Winter). STEM Learning in Your Own Backyard: Designing a place-based middle school summer program. *Green Teacher*, (108), 21-25. Retrieved from: <http://greenteacher.com/stem-learning-in-your-own-backyard/> (80% contribution)
- Wheeler, L. B., **Whitworth, B. A.**, & Gonczi, A. L. (2014). Engineering design challenge. *The Science Teacher*, 81(9), 30-36. DOI: 10.2505/4/tst14_081_09_30 (40% contribution)
- Whitworth, B. A.**, Chiu, J. L., & Bell, R. L. (2014). Kinesthetic investigations in the physics classroom. *The Physics Teacher*, 52, 616-618. DOI: 10.1119/1.4862112 (80% contribution)
- Whitworth, B. A.** & Bell, R. L. (2013). Physics portfolios: A picture of student understanding. *The Science Teacher*, 80(8), 38-43. DOI: 10.2505/4/tst13_080_08_38 (80% contribution)
- Whitworth, B. A.** & Chiu, J. L. (2013). Pre-Service teachers' use of visualizations in the science classroom: A case study. *Journal of Virginia Science Education*, 5(1), 16-33. Retrieved from: http://www.vast.org/docs/Journal9_FullVersion-1.pdf (80% contribution)
- Whitworth, B. A.**, Maeng, J. L., & Bell, R. L. (2013). Differentiating inquiry. *Science Scope*, 37(2), 10-17. DOI: 10.2505/4/ss13_037_02_10 (80% contribution)

NON PEER REVIEWED PUBLICATIONS

- Whitworth, B. A.** (2014). *Exploring the critical role of a district science coordinator*. (Doctoral Dissertation). University of Virginia: Charlottesville, Virginia. (100% contribution)
- Whitworth, B. A.** (2001). Team learning: A pilot study. In Leah P. McCoy (Ed), *Studies in teaching: 2001 research digest* (p. 116-120). Winston-Salem, NC: Wake Forest University. (100% contribution)

Whitworth, B. A. (2001). The world is my home. In Graduating Pryor Leadership Fellows of William Jewell College (Ed), *True North: Insights on Leadership for College Students* (p. 38-40). Liberty, MO: William Jewell College. (100% contribution)

PUBLICATIONS ACCEPTED

Jackson, W., Simpson, L. A.*, **Whitworth, B. A.** (2021, Accepted). Talking is thinking: Supporting student sense-making through discourse and assessment. *The Physics Teacher*. (20% contribution)

Kulkarni, S.* & **Whitworth, B. A.** (2021, Accepted; Slated for Early 2022). Using podcasts in science classrooms: Storytelling for all ears. *The Physics Teacher*. (30% contribution)

Lytal, L. C.*, **Whitworth, B. A.**, & Morton, G. (2020, Accepted). No bones about art. *Science Scope*. (30% contribution)

Whitworth, B. A., & Snead, A. (2019, Accepted). Powerful Practices for the Differentiated Science Classroom: Tools to Support All Learners. Alexandria, VA: NSTA Press. (60% contribution)

Whitworth, B. A., Wenner, J., & Tubin, D. (2020, Accepted). Science teacher leadership: The current landscape and paths forward. In *The handbook of research on science teacher education*. (40% contribution)

PUBLICATIONS IN REVIEW

Miller, A. R., **Whitworth, B. A.**, & Zangori, L. (Revise & Resubmit). Mind the (mentoring) gap: Exploring challenges to preservice and cooperating science teacher alignment with respect to teaching and standards-based reform. (30% contribution)

Rubino-Hare, **Whitworth, B. A.**, & Boateng, F. (Revise & Resubmit). The impact of Geospatial Inquiry lessons on student interest in science and technology careers. (40% contribution)

Watson, S.* & **Whitworth, B. A.** (Revise & Resubmit). Particulate matters: Water filtration and solar disinfection. (30% contribution)

Whitworth, B. A., Maeng, J. L., Gonczi, A. L., & Bell, R. L. (Revise & Resubmit). Supports and barriers encountered by science coordinators. (70% contribution)

Whitworth, B. A., Rubino-Hare, L., Bloom, N. E., & Nolan, E.* (Submitted). Scaling professional development: Measures of implementation. (50% contribution)

Whitworth, B. A., Rubino-Hare, L., Boateng, F., Hamlin, A., Bloom, N., & Nolan, E.* (Revise & Resubmit). Scaling professional learning and development. (50% contribution)

Whitworth, B. A., Rubino-Hare, L., Boateng, F., Nolan, E.*, Bloom, N., & Manone, M. (Revise & Resubmit). Examining professional learning and development designed to support Geospatial Inquiry and Geospatial Technology skills. (50% contribution)

Whitworth, B. A., Simpson, L. A.*, Jackosn, W., James, J. & Steimle, A. (Submitted). Utilizing physical science Educative Curriculum Materials to impact Preservice Elementary Teachers. (70% contribution)

NATIONAL AND INTERNATIONAL PRESENTATIONS

Luft, J.A., Huang, Y., Watson, S.*, Singh, H., Ozen, H., **Whitworth, B.**, Ruiz, Y*, Tran, H., McCann, S., & He, C.-W. (2021, Submitted). *Using video to elicit the professional knowledge of a teacher: A pilot study*. A paper for the annual meeting of the Association for Science Teacher Education, Greenville, SC.

Whitworth, B. A., Huang, Y., Singh, H., Watson, S.*, Ozen-Tasdemir, H., & Luft, J.A. (2021, Submitted). *Designing the differentiation of online professional development*. A paper for the annual meeting of the Association for Science Teacher Education, Greenville, SC.

Whitworth, B. A., Tran, H., McCann, S., He, C.-W., Ruiz, Y.* & Luft, J.A. (2021, Submitted). *Examining the Science and Engineering Practices implemented by teachers through multiple instructional formats*. A poster for the annual meeting of the Association for Science Teacher Education, Greenville, SC.

Luft, J.A., **Whitworth, B. A.**, Ozen-Tasdemir, H., Singh, H., McCann, S. Watson, S.*, Huang, Y., Ruiz, Y.* & Tran, H. (2021, Accepted). *Supporting science teacher leaders through a web-based program: Aligning program and participants*. A paper for the annual meeting of the European Science Education Research Association, Virtual.

Whitworth, B. A., Wenner, J., & Tubin, D. (2021, Accepted). Science teacher leadership: The current landscape and paths forward. A paper for the annual meeting of the European Science Education Research Association, Virtual.

Rubino-Hare, L., **Whitworth, B. A.**, Bloom, N., Nolan, E., & Manone, M. (2021, July). Power of Data: Impact of scale up on teachers and students and next steps. A presentation for the Esri Education Summit, San Diego, CA.

Whitworth, B. A. & Simpson, L. A.* (2021, April). *Utilizing physical science Educative Curriculum Materials and situated learning to impact Preservice Elementary Teachers*. A paper for the annual meeting of the American Educational Research Association, Virtual.

Whitworth, B. A., Simpson, L.*, Jackson, W., James, J. & Steimle, A. (2021, April). *Everything is connected: Building preservice elementary teachers' content knowledge through educative curriculum materials*. A poster for the annual meeting the National Association of Research in Science Teaching, Virtual.

Whitworth, B. A., Luft, J.A., Watson, S.*, Huang, Y., Singh, H., & Worth, E. (2021, April). *A professional development module focused on teaching science equitably*. A presentation for the annual meeting of the National Science Teaching Association, Chicago, IL. (Cancelled)

Huang, Y., Singh, H., Ozen-Tasdemir, H., Watson, S. A.*, **Whitworth, B. A.**, & Luft, J.A. (2021, January). *Supporting district science coordinators: Designing online professional learning modules*. A presentation for the annual meeting of the Association for Science Teacher Education, Virtual.

Singh, H., Huang, Y., Tran, H., Ozen-Tasdemir, H., Worth, E., Watson, S.*, Luft, J., & **Whitworth, B.** (2021, January). *Resilience in the Face of the COVID-19 Pandemic: Knowledge and Practices of School Science Coordinators in the Asian Context*. A paper presentation for the annual meeting of the Association for Science Teacher Education Annual International Conference. Virtual.

Whitworth, B. A., Simpson, L.*, Steimle, A., Jackson, W., & James, J. (2021, January). *Impacting higher education faculty's teaching practices in the physical sciences*. A poster for the annual meeting the Association of Science Teacher Education, Virtual.

Whitworth, B. A., Rubino-Hare, L., Bloom, N., Nolan, E.*, Boateng, F., & Manone, M. (2021, January). *Designing Geospatial Inquiry and Geospatial Technology skill professional learning and development for secondary teachers*. A paper for the annual meeting of the Association of Science Teacher Education, Virtual.

Rubino-Hare, L., **Whitworth, B.**, Bloom, N., & Manone, M. (2020, July). *The Power of Data: Helping teachers enhance lessons with Geospatial Inquiry*. A presentation for the annual Esri Education User Conference, San Diego, CA. (Cancelled)

Whitworth, B. A., Simpson, L.*, & Wilson, S.* (2019, April). *Strategies for Differentiating Science Practices*. A presentation for the National meeting of the National Science Teachers Association, Boston, MA. (Cancelled)

Watson, S.*, Huang, Y., Singh, H., Ozen-Tasdemir, H., Worth, E., McNeil, L., Luft, J.A., & **Whitworth, B. A.** (2020, March). *Practices, attributes, and knowledge of district science coordinators: Building a trajectory*. A paper for the annual meeting of the National Association of Research in Science Teaching, Portland, OR. (Cancelled)

Whitworth, B. A., Simpson, L.*, Jackson, W., James, J. & Steimle, A. (2019, March). *Impacting preservice elementary teachers through physical science educative curriculum materials*. A poster for the annual meeting the National Association of Research in Science Teaching, Portland, OR. (Cancelled)

Whitworth, B. A., Nolan, E.*, Rubino-Hare, L., Manone, M., & Bloom, N. (2019, March). *Examining professional development designed to support geospatial inquiry implementation*. A paper for the annual meeting the National Association of Research in Science Teaching, Portland, OR. (Cancelled)

Wilson, S.*, **Whitworth, B. A.** & Watson, S.* (2019, March). *Examining teacher leadership as a model for improvement in science education*. A round table for the annual meeting the National Association of Research in Science Teaching, Portland, OR. (Cancelled)

Nolan, E.*, **Whitworth, B. A.**, Manone, M., Rubino-Hare, L., & Bloom, N., (2020, January). *Exploring how the design of professional development supports geospatial inquiry implementation in the classroom*. A poster for the Association of Science Teacher Education, San Antonio, TX.

- Whitworth, B. A.**, Simpson, L.*, Jackson, W., James, J. & Steimle, A. (2020, January). *Designing physical science Educative Curriculum Materials for preservice elementary teachers to impact attitudes toward science*. A poster for the Association of Science Teacher Education, San Antonio, TX.
- Rubino-Hare, L., Bloom, N.E., Nolan, E., & **Whitworth, B. A.** (2019, December). *Empowering Secondary Teachers to Enhance Instruction through the Power of Data and Geospatial Inquiry*. A paper for the annual meeting of American Geophysical Union, San Francisco, CA.
- Platt, S. & **Whitworth, B. A.** (2019, June). *Examining pre-service teachers' interest, attitudes, and technology integration with makerspaces*. A paper for the annual National meeting of the International Society for Technology in Education, Philadelphia, PA.
- Lederman, J., **Whitworth, B. A.**, Bartels, S., Miller, A., Holliday, G., & Peel, A. (2019, April). *Professional citizenship: Lifetime commitments and rewards*. A symposium for the annual meeting of National Association of Research in Science Teaching, Baltimore, MD.
- Manone, M., Rubino-Hare, L., **Whitworth, B. A.**, Nolan, E.*, & Bloom, N., (2019, April). Power of Data Project: Improving teaching and learning using data enhanced geospatial inquiry. A poster for the National meeting of the American Association of Geographers, Washington, DC.
- Wheeler, L., Navy, S., Maeng, J.L., & **Whitworth, B. A.** (2019, April). *Classroom Observation Protocol for Engineering Design (COPED): Instrument development, validation, and implications for use*. A paper presented at the annual meeting of National Association of Research in Science Teaching, Baltimore, MD.
- Maeng, J. L., & **Whitworth, B. A.** (2019, April). *Debunking classroom myths: Learning styles edition*. A presentation for the National meeting of the National Science Teachers Association, St. Louis, MO.
- Whitworth, B. A.** & Maeng, J. L. (2019, April). *Is it engineering or not?* A presentation for the National meeting of the National Science Teachers Association, St. Louis, MO.
- Whitworth, B. A.**, Luft, J. A., & Maeng, J. L. (2019, April). *Growing as a teacher: What do I want to be when I grow up?* A presentation for the National meeting of the National Science Teachers Association, St. Louis, MO.
- Whitworth, B. A.**, Miller, A. & Mensah, F.. (2019, April). *Early Career Faculty Forum*. A forum hosted for the annual meeting of the National Association for Research in Science Teaching, Baltimore, MD.
- Rubino-Hare, L., Bloom, N. & **Whitworth, B. A.** (2019). Implications from a Scale Up of Geospatial Technology Professional Development Program for Secondary Teachers. In K. Graziano (Ed.), *Proceedings of Society for Information Technology & Teacher Education International Conference* (pp. 1673-1678). Las Vegas, NV, United States: Association for the Advancement of Computing in Education (AACE). Retrieved June 4, 2019 from <https://www.learntechlib.org/primary/p/207868/>.

- Riley, A. R., **Whitworth, B. A.**, Zangori, L, Biggers, M., & Walsh, M. D.* (2019, January). *Exploring (mis)alignment in inservice and preservice science teacher mentoring relationships with respect to standards-based reform*. A paper for the annual meeting of the Association of Science Teacher Education, Savannah, GA.
- Bloom, N. E., Rubino-Hare, L., & **Whitworth, B. A.** (2018, August). *Findings from a scale-up of geospatial technology-integrated professional development*. A paper for the annual meeting of the National Council for Geographic Education at the International Geographical Union Regional Conference, Quebec City, Canada.
- Miller, A. R., Zangori, L., **Whitworth, B. A.**, & Biggers, M. (2018, March). *Mind the gap: Exploring (mis)alignment in inservice and preservice science teacher mentoring relationships*. A paper for the annual meeting of the National Association for Research in Science Teaching, Atlanta, GA.
- Whitworth, B. A.** & Martin, S. (2018, March). *Early Career Faculty Forum*. A forum hosted for the annual meeting of the National Association for Research in Science Teaching, Atlanta, GA.
- Luft, J. A. & **Whitworth, B. A.** (2018, January). *Supporting teacher development: Science teacher trajectories*. A paper for the annual meeting of the Association of Science Teacher Education, Baltimore, MD.
- Maeng, J., Bell, R.L., St. Clair, T., Gonczi, A.L., & **Whitworth, B. A.** (2018, January). *Elementary Teachers' Classroom Nature of Science Instruction following PD: Results of a RCT*. A paper for the annual meeting of Association for Science Teacher Education, Baltimore, MD.
- Wheeler, L.B., Navy, S., Maeng, J.L., & **Whitworth, B. A.** (2018, January). *Development and Validation of the Classroom Observation Protocol for Engineering Design (COPED)*. A paper for the annual meeting of the Association for Science Teacher Education, Baltimore, MD.
- Whitworth, B. A.**, Bloom, N. E., Walker, M. C.*, & Rubino-Hare, L. (2018, January). *Training the trainers: Designing the Power of Data Facilitation Academies*. A poster for the annual meeting of the Association of Science Teacher Education, Baltimore, MD.
- Rubino-Hare, L., Bloom, N., & **Whitworth, B. A.** (2017, July). *Using the Power of Data to increase student engagement with geospatial technology and careers*. A poster for the annual meeting of the International Cartographic Conference, Washington, D.C.
- Whitworth, B. A.** (2017, April). *Early Career Faculty Forum*. A forum hosted for the annual meeting of the National Association for Research in Science Teaching, San Antonio, TX.
- Whitworth, B. A.**, Bloom, N. E., Walker, M. C.* & Rubino-Hare, L. A. (2017, April). *Power of Data Facilitation Academy: Designing facilitator professional development*. A paper for the annual meeting of the National Association for Research in Science Teaching, San Antonio, TX.
- Whitworth, B. A.**, Meredith, J. & Hutter, A. (2017, April). *Engineering practices in the life sciences*. A presentation for the National meeting of the National Science Teachers Association, Los Angeles, CA.

- Whitworth, B. A.**, Luft, J. A., Kind, V., Berry, A., & Dubois, S. L. (2017, March). *What can I do and how do I get there? Trajectories of science teacher learning*. A presentation for the National meeting of the National Science Teachers Association, Los Angeles, CA.
- Berry, A., Luft, J. A., **Whitworth, B. A.**, Dubois, S. L., & Kind, V. (2016, June). *From carnival to coherence: Conceptualizing trajectories of science teacher learning*. A paper for the annual meeting of the Australasian Science Education Research Association, Canberra, Australia.
- Whitworth, B. A.**, Maeng, J. L., Wheeler, L. B., & Chiu, J. L. (2016, April). *A foundational study of the district science coordinators' role in supporting science instruction*. A paper for the annual meeting of the National Association for Research in Science Teaching, Baltimore, MD.
- Whitworth, B. A.** & Martin, S. (2016, April). *Early Career Faculty Forum*. A forum hosted for the annual meeting of the National Association for Research in Science Teaching, Baltimore, MD.
- Maeng, J. L., Bell, R. L., St. Clair, T., **Whitworth, B. A.**, & Gonczi, A. L. (2016, April). *From professional development to practice: Elementary teachers' understandings and enactment of nature of science instruction*. A paper for the annual meeting of the National Association for Research in Science Teaching, Baltimore, MD.
- Luft, J. A., **Whitworth, B. A.**, Dubois, S. L., Berry, A., & Kind, V. (2016, April). *A trajectory of science teacher learning: Charting the course for policy makers, researchers, educators, and teachers*. A paper for the annual meeting of the National Association for Research in Science Teaching, Baltimore, MD.
- Whitworth, B. A.**, Maeng, J. L., & Chiu, J. L. (2016, April). *Investigating the roles and responsibilities of district science coordinators*. A paper for the annual meeting of the American Education Research Association, Washington, DC.
- Whitworth, B. A.** & Maeng, J. L. (2016, April). *Exploring engineering practices*. A presentation for the annual meeting of the National Science Teachers Association, Nashville, TN.
- Maeng, J. L. & **Whitworth, B. A.** (2016, April). *Differentiating scientific practices through inquiry-based instruction*. A presentation for the annual meeting of the National Science Teachers Association, Nashville, TN.
- Whitworth, B. A.**, Edmondson, E., & Mannarino, A. (2016, March). *Creating instructional programs that engage students: The VISTA way*. A presentation for the annual meeting of the National Science Educational Leaders Association, Nashville, TN.
- Whitworth, B. A.**, Wheeler, L. B., Maeng, J. L. & Bell, R. L. (2016, January). *The relationship between science coordinator professional development and teacher change*. A paper for the annual meeting of the Association for Science Teacher Education, Reno, NV.
- Whitworth, B. A.** (2015, October). *Cooking up a research agenda: What comes next?* A paper for the annual meeting of the Science Education at the Crossroads Conference, Cleveland, OH.

- Bell, R. L., Maeng, J. L., Konold, T., & **Whitworth, B. A.** (2015, April). *Professional development to support elementary teachers' understanding and implementation of reforms-based science: Randomized controlled trial*. A paper for the annual meeting of the American Education Research Association, Chicago, IL.
- Wright, C. & **Whitworth, B. A.** (2015, April). *Early Career Faculty Forum*. A forum hosted for the annual meeting of the National Association for Research in Science Teaching, Chicago, IL.
- Bell, R. L., Maeng, J. L., Konold, T., & **Whitworth, B. A.** (2015, April). *The effect of professional development of elementary teachers' understanding and implementation of reforms-based science instruction*. A paper for the annual meeting of the National Association for Research in Science Teaching, Chicago, IL.
- Wheeler, L. B., Maeng, J. L., & **Whitworth, B. A.** (2015, April). *Assessing a professional development for teaching assistants in a Project-Based Guided Inquiry General Chemistry lab*. A paper for the annual meeting of the National Association for Research in Science Teaching, Chicago, IL.
- Whitworth, B. A.**, Maeng, J. L., & Bell, R. L. (2015, April). *An exploration of science coordinator practices following professional development*. A paper for the annual meeting of the National Association for Research in Science Teaching, Chicago, IL.
- Maeng, J. L., Bell, R. L., & **Whitworth, B. A.** (2015, January). *The effect of professional development on elementary science teachers' understanding and classroom implementation of reforms-based science instruction: A randomized controlled trial*. A paper for the annual meeting of the Association for Science Teacher Education, Portland, OR.
- Whitworth, B. A.**, Maeng, J. L., Wheeler, L. B., & Chiu, J. L. (2015, January). *Critical factors impacting the role of a district science coordinator*. A paper for the annual meeting of the Association for Science Teacher Education, Portland, OR.
- Wheeler, L. B., Maeng, J. L., & **Whitworth, B. A.** (2014, July). *Teaching assistant role and perceptions: Assessment of professional development to support Project-Based, Guided Inquiry approach in General Chemistry labs*. A presentation for the IUPAC International Conference on Chemistry Education, Toronto, Canada.
- Whitworth, B. A.**, Maeng, J. L., Wheeler, L. B., & Chiu, J. L. (2014, April). *Understanding the critical role of a district science coordinator*. A poster for the annual meeting of National Association of Research in Science Teaching, Pittsburg, PA.
- Gonczi, A. L., Bell, R. L., & **Whitworth, B. A.** (2014, January). *Analysis of two computer simulation professional development models*. A paper for the annual meeting of the Association of Science Teacher Educators, San Antonio, TX.
- Whitworth, B. A.**, Maeng, J. L., Bell, R. L., & Gonczi, A. L. (2013, April). *Supporting the supporters: A case study of professional development for science coordinators*. A poster for the annual meeting of the National Association of Research in Science Teaching, San Juan, PR.

Wheeler, L. B., Maeng, J. L., Bell, R. L., & **Whitworth, B. A.** (2013, April). *Understanding and scaffolding inquiry: A tale of three teachers*. A poster for the annual meeting of National Association of Research in Science Teaching, San Juan, PR.

Whitworth, B. A., Maeng, J. L., & Gonczi, A. L. (2013, January). *Science coordinators experiences with VISTA professional development*. A paper for the annual meeting of the Association of Science Teacher Educators, Charleston, SC.

Wheeler, L. B., Bell, R. L., & **Whitworth, B. A.** (2013, January). *Three teachers' implementation of inquiry in the secondary science classroom*. A paper for the annual meeting of the Association of Science Teacher Educators, Charleston, SC.

Maeng, J. L., Bell, R. L., & **Whitworth, B. A.** (2012, March). *Alternatives to dissection in the digital age*. A paper for the annual meeting of the National Science Teachers Association, Indianapolis, IN.

REGIONAL, STATE, AND LOCAL PRESENTATIONS

Watson, S.A.*, Huang, Y., Singh, H., Ozen-Tasdemir, H., Worth, E., McNeil, L., McCann, S., Tran, H. H., Luft, J. A., **Whitworth, B. A.** (2020, October). A model of district science coordinator knowledge. A paper for the annual meeting of the Southeastern Association for Science Teacher Education, Virtual Conference.

Whitworth, B. A., Simpson, L.*, Jackson, W., James, J. & Steimle, A. (2020, October). Impacting the practices of higher education faculty in the physical sciences. A presentation for the annual meeting of the Southeastern Association for Science Teacher Education, Virtual Conference.

Whitworth, B. A., Simpson, L.*, Jackson, W., James, J. & Steimle, A. (2020, April). Utilizing physical science educative curriculum materials to impact preservice elementary teachers. A poster for the annual meeting of the Scholarship of Teaching & Learning Conference, Oxford, Mississippi. (Cancelled)

Simpson, L.*, **Whitworth, B. A.**, Jackson, W., James, J. & Steimle, A. (2020, March). Designing educative curriculum materials for physical science to impact preservice elementary teachers. A poster for the annual meeting of the Graduate Student Council Research Symposium, Oxford, Mississippi. (Cancelled)

Whitworth, B. A. (2020, February). *Science fair portfolios: Assessing students in different ways*. A presentation for the regional meeting of the Mississippi Science Teachers Association, Oxford, MS.

Simpson, L.*, Watson, S.*, & **Whitworth, B. A.** (2019, October). *Differentiation strategies for science practices*. A presentation presented at the annual meeting of the Mississippi Science Teachers Association, Biloxi, MS.

Watson, S.*, Comstock, N.*, & **Whitworth, B. A.** (2019, October). *Backyard Ecology: Student created google tours*. A presentation presented at the annual meeting of the Mississippi Science Teachers Association, Biloxi, MS.

- Whitworth, B. A.**, Wilson, S.* & Simpson, L.* (2019, October). *What do you want to be when you grow up?* A presentation presented at the annual meeting of the Mississippi Science Teachers Association, Biloxi, MS.
- Wilson, S.*, Comstock, N.* & **Whitworth, B. A.** (2019, October). *Patterns and creativity: Exploring the Nature of Science*. A presentation presented at the annual meeting of the Mississippi Science Teachers Association, Biloxi, MS.
- Whitworth, B. A.** & Wilson, S.* (2019, January). *Understanding Nature of Science*. A presentation presented at the annual teachers conference of the NASA/Mississippi Space Grant Consortium, Oxford, MS.
- Whitworth, B. A.**, Simpson, L.* & Wilson, S.* (2018, October). *Engineering practices in the K-12 classroom*. A presentation presented at the annual meeting of the Mississippi Science Teacher Association, Biloxi, MS.
- Whitworth, B. A.** (2018, October). *Myths of learning: What matters in teaching and learning?* A presentation presented at the annual meeting of the Mississippi Science Teacher Association, Biloxi, MS.
- Whitworth, B. A.** & NAU NSTA & ASTA Student Chapter* (2017, October). *Myths of Learning: Dispelling Common Ideas about Learning*. A presentation presented at the annual meeting of the Arizona Science Teacher Association, Phoenix, AZ.
- Whitworth, B. A.** & NAU NSTA & ASTA Student Chapter* (2016, November). *The might of metacognition and mindsets*. A presentation presented at the annual meeting of the Arizona Science Teacher Association, Phoenix, AZ.
- Luft, J. A., **Whitworth, B. A.**, & Dubois, S. L. (2016, October). *A trajectory of science teacher learning: Charting the course path for researchers, educators, and teachers*. A paper for the Regional meeting of the National Science Teachers Association, Minneapolis, MN.
- Rubino-Hare, L. & **Whitworth, B. A.** (2016, January). *The Power of Data: Preparing the Geospatial workforce for tomorrow*. A presentation presented for the annual meeting of the Arizona STEM Collaborative, Phoenix, AZ.
- Whitworth, B. A.** (2015, November). *Engaging with engineering practices*. A presentation presented at the annual meeting of the Arizona Science Teacher Association, Phoenix, AZ.
- Whitworth, B. A.**, & Ross, D. (2014, November). *Inquiry and differentiation*. A presentation presented at the annual meeting of the Arizona Science Teacher Association, Phoenix, AZ.
- Gonczi, A. L., & **Whitworth, B. A.** (2014, February). *Situating computer simulation professional development*. A poster presented at the annual Curry Research Conference, Charlottesville, VA.
- Wheeler, L. B., Maeng, J. L., & **Whitworth, B. A.** (2014, February). *Assessing a professional development for teaching assistants implementing a project-based guided-inquiry approach to general*

chemistry laboratories. A poster presented at the annual Curry Research Conference, Charlottesville, VA.

Whitworth, B. A., Hodges, D.* , Mandzak, M.* , Parks, G.* , & Snell, P.* (2013, November). *Investigating inquiry: Scaffolding inquiry instruction*. A presentation presented at the annual meeting of the Virginia Association of Science Teachers, Norfolk, VA.

Whitworth, B. A., Gonczi, A. L., Bell, R. L., & Maeng, J. L. (2013, February). *A case study of VISTA science coordinators*. A poster presented at the annual Curry Research Conference, Charlottesville, VA.

Wheeler, L. B., Maeng, J. L., Bell, R. L., & **Whitworth, B. A.** (2013, February). *Secondary science teachers' understanding and practices of the levels of inquiry*. A poster presented at the annual Curry Research Conference, Charlottesville, VA.

Whitworth, B. A., Wheeler, L. B., Maeng, J. L., & Bell, R. L. (2012, November). *Differentiating inquiry*. A presentation presented at the annual meeting of the Virginia Association of Science Teachers, Williamsburg, VA.

Maeng, J. L., **Whitworth, B. A.**, Shaikh, I.* , Rock, C.* , Stewart, W.* , & Bell, R. L. (2011, November). *Digital alternatives to hands-on dissection*. A presentation presented at the annual meeting of the Virginia Association of Science Teachers, Roanoke, VA.

INVITED PRESENTATIONS & TALKS

Whitworth, B. A. (2021, April 5). *Early Career Faculty Forum*. Invited Panelist. National Association for Research in Science Teaching.

Whitworth, B. A. (2020, October 6). *Undergraduate Teacher Education*. Invited Presentation. Whine & Cheese: Council of State Science Supervisors.

Whitworth, B. A. (2020, July 23). *Alternative assessments in science classrooms*. Invited Presentation. Twitter Chat: National Science Teacher Association.

Whitworth, B. A. (2020, February 26). *Scholarship of Teaching and Learning: An Introduction*. Invited Presentation. Oxford, MS: University of Mississippi, School of Journalism and New Media.

Whitworth, B. A. (2020, January 6). *Power of Grading and Assessment*. Invited Presentation. Oxford, MS: Lafayette High School.

Whitworth, B. A. (2019, October 31). *Effective Science Teaching Practices*. Invited Presentation. Oxford, MS: University of Mississippi Chemistry Department.

Whitworth, B. A. (2019, January 16). *Developing a Career Trajectory: What do I want to be when I grow up?* Invited Presentation. Oxford, MS: Lafayette High School.

Whitworth, B. A. (2017, September 28). *Considering the Role of the District Science Coordinator*. Invited Talk. Athens, GA: University of Georgia.

Whitworth, B. A. (2016, November 4). *Thesis and Dissertation: Planning, Researching, and Writing*. Graduate College Workshop. Invited Talk. Flagstaff, AZ: Northern Arizona University.

Whitworth, B. A. (2014, November 24). *Job Interviews and the First Year of Teaching*. TIPS Seminar. Invited Talk. Flagstaff, AZ: Northern Arizona University.

Whitworth, B. A. (2003, April 23). *Third Culture Kids and Me*. Faculty Colloquium. Invited Talk. Winston-Salem, NC: University North Carolina School of the Arts.

PROFESSIONAL LEARNING FACILITATION

SCAFFOLD Project, Georgia, Virtual

- Evaluating and Implementing your Strategic Plan, 2 hours, May 24, 2021
- Implementing and Assessing the Crosscutting Concepts, 6 hours, April 19-23, 2021
- Evaluating your Strategic Plan, 2 hours, March 22, 2021
- Developing your Strategic Plan Objectives and Activities, 2 hours, February 22, 2021
- Science & Engineering Practices & Considering Equity for your District, 6 hours, January 25-29, 2021
- Developing your Strategic Plan Vision and Goals, 2 hours, December 14, 2020
- Considering your stakeholders and data, 2 hours, November 9, 2020
- Leading Professional Development: Building Capacity for Collaborative School Communities, 7 hours, October 12-23, 2020
- Leading Professional Development: Building Capacity for Collaborative School Communities, 7 hours, September 14-25, 2020

Building Capacity for Leadership & Professional Learning, Douglas County, GA, Virtual

- Leading Professional Development: Building Capacity for Collaborative School Communities, 6 hours, January 26, February 2, 2021

Making Sense of Science, Oklahoma Department of Education, Virtual

- Leading Professional Development: Building Capacity for Collaborative School Communities, 6 hours, January 22, 2021

Making Sense of Science, New Mexico Department of Education, Virtual

- Leading Professional Development: Building Capacity for Collaborative School Communities, 6 hours per group, 4 groups, October 19-December 8, 2020

Supporting Science Instruction, Oxford, MS

- Considering how to support K-12 teachers in implementing new standards, 8 hour day, November 15, 2019
- Examining Multidimensional Science Instruction and new standards from an administrator perspective, 8 hour day, November 14, 2019

Science Teacher Leader Academy 2, Oxford, MS

- Analyzing Student Data & Dealing with Difficult Parents, 8 hours, March 25-April 8, 2020
- Formative Assessment & the Nature of Science, 8 hours, September 20, 2019
- Science Teacher Leader Academy 2 Course, 8 hour days, June 24-28, 2019

Making Sense of Science, WestEd, Berkeley, CA

- Leading Professional Development: Building Capacity for Collaborative School Communities, 8 hours, February, 28, 2019

Oxford School District, Oxford, MS

- Multidimensional Science Education Making Sense of Science Course, 8 hours, February 18, 2019

Building Capacity for Leadership & Professional Learning, Oxford, MS

- Professional Learning & Developing a Plan for your Context, 8 hours, November 30, 2018
- Leading Professional Development: Building Capacity for Collaborative School Communities, 8 hours, November 29, 2018

Mississippi Region VII Science Fair Teacher Workshop, University of Mississippi, Oxford, MS

- Methods of science and science fairs, 3 hours, October 23, 2018

Mississippi Education Teacher Program Residential Institute, University of Mississippi, Oxford, MS

- Debunking classroom myths and getting the discussion you want, 3 hours, August 7, 2018

Building Capacity for Leadership & Professional Learning, Oxford, MS

- Professional Learning & Developing a Plan for your Context, 8 hours, June 26, 2018
- Leading Professional Development: Building Capacity for Collaborative School Communities, 8 hours, June 25, 2018

Science Teacher Leader Academy, Oxford, MS

- Analyzing Student Data & Dealing with Difficult Parents, 8 hours, March 22, 2019
- Formative Assessment & the Nature of Science, 8 hours, September 7, 2018
- Science Teacher Leader Academy Course, 8 hour days, June 4-8, 2018

Dynamic Earth, Weather and Climate Grant, Peoria, AZ

- Celebrating our Successes, 8 hours, February 23, 2018
- Revisiting Waves, Leadership, & Engineering, 8 hours, January 27, 2018
- Waves Making Sense of Science Course, 8 hours, October 20-21, 2017
- Leading Professional Development: Building Capacity for Collaborative School Communities, 8 hours, September, 16, 2017
- Dynamic Earth, Weather & Climate Making Sense of Science Course, 8 hour days, July 10-21, 2017
- Conceptual Understanding & Effective Science Instruction, 8 hour days, March 17, 2017

Force And Matter Unify Science Grant, Globe, AZ

- Celebrating our Successes, 8 hours, March 3, 2018
- Revisiting Waves, Leadership, & Engineering, 8 hours, February 3, 2018
- Waves Making Sense of Science Course, 8 hours, November 4, 2017
- Leading Professional Development: Building Capacity for Collaborative School Communities, 8 hours, September 9, 2017
- Matter Making Sense of Science Course, 8 hour days, June 12-16, 2017
- Force and Motion Making Sense of Science Course, 8 hour days, June 5-9, 2017

- Conceptual Understanding, Effective Science Instruction & the Nature of Science, 10 hours, February 24-25, 2017

Peoria Unified School District, Peoria, AZ

- Leading Professional Development: Building Capacity for Collaborative School Communities, 8 hours, October 20, 2017

Arizona Science Coordinator Collaborative, Phoenix, AZ

- Celebrating our Successes, 4 hours, October, 27, 2017
- Making the Case for Science Education & Developing Effective Professional Development, 8 hours, September 7, 2017
- Developing a Strategic Plan for Effective Science Instruction, 8 hours, June 1, 2017
- Leading Professional Development: Building Capacity for Collaborative School Communities, 8 hours, February 8, 2017

Alliance for Investigating Motion, Force, and Energy Grant, Dysart, AZ

- Leadership Training Day, 8 hours, February 11, 2017
- Nature of Science & Revisiting AIMFE, 8 hours, February 4, 2017
- Uncovering Student Ideas & the Nature of Science, 8 hours, October 29, 2016
- Scientific Practices & Unit Planning, 8 hours, September 17, 2016
- Energy Making Sense of Science Course, 8 hour days, June 20-24, 2016
- Energy Making Sense of Science Course, 8 hour days, June 13-17, 2016

Northern Arizona University Faculty Professional Development Series, Flagstaff, AZ

- Creating your support network, 2 hours, February 3, 2017
- The power and peril of earning zeroes in your class, 2 hours, March 28, 2016
- It's 10:00, do you know what your students know? Formative assessment of student learning, 2 hours, February 24, 2016
- Getting the discussion you want, 2 hours, February 12, 2016
- How can I use assessment activities to help my students really learn?, 2 hours, February 10, 2016

Gila County Energy and ORGanisms Grant, Payson, AZ and Globe, AZ

- Mindsets, Formative Assessment & Grading, 10 hours, November 13-14, 2015
- Mindsets, Formative Assessment & Grading, 10 hours, October 23-24, 2015
- NGSS Framework, Levels of Inquiry, & Leading Productive Discussions, 10 hours, September 25-26, 2015
- NGSS Framework, Levels of Inquiry, & Leading Productive Discussions, 10 hours, September 11-12, 2015
- Looking at Student Work & Creating High-Level Tasks, 10 hours, August 21-22, 2015
- Looking at Student Work & Creating High-Level Tasks, 10 hours, August 14-15, 2015
- Energy Making Sense of Science Course, 8 hour days, July 7-10, 2015
- Energy Making Sense of Science Course, 8 hour days, June 9-12, 2015
- Energy Making Sense of Science Course, 10 hours, April 24-25, 2015
- Energy Making Sense of Science Course, 10 hours, April 17-18, 2015

Flagstaff Arts and Leadership Academy, Flagstaff, AZ

- Curriculum Mapping, 8 hours, February 27, 2015

Charlottesville City Public Schools, Charlottesville, VA

- Inquiry Instruction, 2 hours, September 21, 2012

Prince William County Public Schools, Fairfax, VA

- Simplifying Inquiry Instruction, 8 hours, August 31, 2011

FUNDED GRANTS

Co-Principal Investigator. Luft, J. A. & **Whitworth, B. A.** (\$1,370,197; August 1, 2019 – July 31, 2023). *Science Coordinators Advancing a Framework For Outstanding Leadership Development (SCAFFOLD)*. National Science Foundation Discovery Research K-12 Competitive Grant Program. Grant number: 1908431.

Co-Principal Investigator. Steimle, A., James, J., Jackson, W. & **Whitworth, B. A.** (\$46,619; March 1, 2019 – April 30, 2020). *CMSE Science Teacher Leaders Academy 2*. Mississippi Space Grant Consortium.

Principal Investigator. **Whitworth, B. A.**, Steimle, A., James, J. & Prewitt, E. (\$299,982; October 1, 2018 – September 30, 2021). *Building Content Knowledge of Elementary Teachers of Science (BUCKETS)*. National Science Foundation IUSE Competitive Grant Program. Grant number: 1833147.

Co-Principal Investigator. Steimle, A., James, J. & **Whitworth, B. A.** (\$53,485; May 1, 2018 – May 31, 2019). *CMSE Science Teacher Leaders Academy*. Mississippi Space Grant Consortium.

Principal Investigator. **Whitworth, B. A.** & Sample, J. (\$304,647; December 5, 2016 – June 18, 2018). *Dynamic Earth, Weather, & Climate (DEWC) in Peoria Unified School District*. Arizona Department of Education Mathematics and Science Partnership Competitive Grant Program.

Principal Investigator. **Whitworth, B. A.**, Fredrickson, K., & Cole, D. (\$412,980; December 5, 2016 – June 18, 2018). *Force And Matter Unify Science (FAMUS) in Gila County*. Arizona Department of Education Mathematics and Science Partnership Competitive Grant Program.

Principal Investigator. **Whitworth, B. A.**, Kirkley, J. A., & Dolle, E. M. (\$560,925; February 22, 2016 – June 15, 2017). *Alliance for Investigating Motion, Force and Energy (AIMFE)*. Arizona Department of Education Mathematics and Science Partnership Competitive Grant Program.

Co-Principal Investigator. Rubino-Hare, L., **Whitworth, B. A.**, Sample, J., Manone, M., Fredrickson, K., & Palmer, A. (\$1,936,773; 2015-2019). *Expanding Geospatial Technology Career Development for High School Students through Teacher Professional Development*. National Science Foundation iTEST Competitive Grant Program. Grant number: 1513287.

Interim Principal Investigator & Co-Principal Investigator. Fredrickson, K., **Whitworth, B. A.**, & Ross, D. (\$626,450; December 8, 2014 – February 26, 2016). *Gila County Energy and ORGANisms (GEORG) for Grades K-8*. Arizona Department of Education Mathematics and Science Partnership Competitive Grant Program.

UNFUNDED GRANTS

- Co-Principal Investigator.** Platt, B., **Whitworth, B. A.**, & Gifford, J. (\$299,960; **Unfunded**, 2020). *Collaborative Research: Earth Science Roadtrip for Undergraduate Pre-service Teachers (ERUPT)*. National Science Foundation iUSE Competitive Grant Program.
- Co-Principal Investigator.** Gonczi, A., **Whitworth, B. A.**, Maeng, J. L. (\$491,074; **Unfunded**, 2020). *Promoting Leadership and Equity to Advance STEM Education (PLEASE)*. Spencer Foundation Large Grant Program.
- Principal Investigator.** **Whitworth, B. A.** (\$529,326; **Unfunded**, 2020). *Science Teaching Initiative for Leadership and Learning (STILL)*. Hearin Foundation.
- Co-Principal Investigator.** Goulet, T., **Whitworth, B. A.**, Balenger, S., Jackson, C., Buchholz, R., Hoeksema, J., Zee, P., & Hom, E. (\$199,992; **Unfunded**, 2020). *Reintegrating Symbiosis: From emergence to senescence*. National Science Foundation Biology Integration Institutes Competitive Grant Program.
- Co-Principal Investigator.** Platt, B., **Whitworth, B. A.**, & Gifford, J. (\$418,057; **Unfunded**, 2020). *GP-UP: Earth Science Roadtrip for Undergraduate Pre-service Teachers (ERUPT)*. National Science Foundation iUSE Competitive Grant Program.
- Co-Principal Investigator.** Goulet, T., **Whitworth, B. A.**, & Balenger, S. (\$299,785; **Unfunded**, 2019). *Backyard science: Crickets as a conduit to comprehension of and engagement with science by Mississippi middle school age girls and their network of family and friends*. National Science Foundation AISL Competitive Grant Program.
- Principal Investigator.** **Whitworth, B. A.**, Steimle, A., James, J. & Jackson, W. (\$4,924,946; **Unfunded**, 2019). *Building Leadership Among Science Teachers (BLAST)*. National Science Foundation Discovery Research K-12 Competitive Grant Program.
- Co-Principal Investigator.** Sumrall, W. J. & **Whitworth, B. A.** (\$500,000; **Unfunded**, 2019). *Resilience to Extreme Weather: Changing Attitude to Behavior (REWCAB)*. National Oceanic and Atmospheric Administration Environmental Literacy Competitive Grant Program.
- Co-Principal Investigator.** Bennett, J., Xiao, B., Meyer, J. & **Whitworth, B. A.** (\$24,983; **Unfunded**, 2019). *Improving production and training of Physics teachers in Mississippi*. Physics Teacher Education Coalition Recruiting Grants Program.
- Principal Investigator.** **Whitworth, B. A.** & Jackson, W. (\$499,826; **Unfunded**, 2019). *Developing productive student teaching mentoring relationships in science education*. Spencer Foundation Research Grants on Education: Large Competition.
- Principal Investigator.** **Whitworth, B. A.**, Steimle, A., James, J. & Jackson, W. (\$3,376,086; **Unfunded**, 2018). *Building Leadership Among Science Teachers (BLAST)*. National Science Foundation Discovery Research K-12 Competitive Grant Program.

Co-Principal Investigator. Platt, B., **Whitworth, B. A.**, & Gifford, J. (\$445,121; **Unfunded**, 2018). *GP-EXTRA: Earth Science Roadtrip for Undergraduate Pre-service Teachers in the South (ERUPTS)*. National Science Foundation iUSE Competitive Grant Program.

Principal Investigator. **Whitworth, B. A.** & Foster, E. (\$299,978; **Unfunded**, 2018). *Mississippi Abroad in Zimbabwe and Iceland*. National Science Foundation iUSE Competitive Grant Program.

Principal Investigator. **Whitworth, B. A.** & Luft, J. (\$1,346,587; **Unfunded**, 2017). *SouthEastern Coordinators (SEC) Leading for Change*. National Science Foundation Discovery Research K-12 Competitive Grant Program.

Principal Investigator. **Whitworth, B. A.** (\$19,991; **Unfunded**, 2017). *Fostering Excellence in Elementary Science Teaching (FEEST): Bridging Research, Practice, and Curricular Supports*. Northern Arizona University, NAU Research Development Grants Program.

Principal Investigator. **Whitworth, B. A.** (\$351,439; **Unfunded**, 2017). *Arizona STEM Coordinator Leadership Academy for K-12*. Toyota Grant Programs.

Principal Investigator. **Whitworth, B. A.** (\$14,999; **Unfunded**, 2016). *The Science Coordinator Role: What leadership practices do coordinators enact?* Northern Arizona University, Faculty Grants Program.

Principal Investigator. **Whitworth, B. A.** (\$5,500; **Unfunded**, 2016). *Improving Student Achievement through Mindset Intervention in a Geology Classroom*. Northern Arizona University, CEFNS Lucking Family Faculty Grant.

Co-Principal Investigator. Luft, J. A., **Whitworth, B. A.**, & Dubois, S. L. (\$30,453; Subcontract; **Unfunded**, 2015). *Science Educator Trajectories*. National Science Foundation Discovery Research K-12 Competitive Grant Program.

Co-Principal Investigator. Gray, R., **Whitworth, B. A.**, & Ross, D. (\$622,999; Subcontract; **Unfunded**, 2014). *Model Development Units (MDUs): A curriculum framework for integrating disciplinary core ideas, crosscutting concepts, scientific practices, and science-specific literacy skills*. National Science Foundation Discovery Research K-12 Competitive Grant Program.

Co-Principal Investigator. Ross, D., & **Whitworth, B. A.** (\$15,000; **Unfunded**, 2014). *Examining the efficacy of an intervention: Using the Five Practices Model as a tool for orchestrating productive science discussions*. Northern Arizona University, Faculty Grants Program.

CONSULTING

Evaluation Consultant, 2020

ESTITCH Project, Utah State University, Logan, UT

Advisory Board Member, 2019-2022

Making Engineering Real (ME Real), National Science Foundation ITEST Grant, University of Virginia, Charlottesville, VA

Evaluation Consultant, 2018-2019
GEMS Project, University of Georgia, Athens, GA

Evaluation Consultant, 2018
Rust College, Holly Springs, MS

Arizona Science Standards Revision Committee, 2017
Department of Education, Phoenix, AZ

Presidential Awards for Excellence in Mathematics and Science Teaching Selection Committee,
2017
Department of Education, Phoenix, AZ

STEM Instead Director, 2015
Waimea Middle School, Waimea, HI

Advisory Board Member, 2015
Project SOSA, University of Connecticut, Storrs, CT

Research Consultant, 2014-2015
VISTA Grant, University of Virginia, Charlottesville, VA

Subject Matter Expert for Discovery TechBooks, 2012
Paladin Media Consulting, Charlottesville, VA

PROFESSIONAL SERVICE AND LEADERSHIP

Board of Directors

- *National Association for Research in Science Teaching*, Board of Directors, Director at Large, 2020-2023

Conference Program Coordinator

- *Association for Science Teacher Education*, 2020-2022

Committee Service & Leadership

- *Association for Science Teacher Education*, Science Teacher Preparation Position Statement Review Panel, Co-Chair, 2021
- *National Science Teachers Association*, Committee on Research in Science Education, 2020-2023
- *Association for Science Teacher Education*, Membership and Participation Committee, Member, 2018-2021
- *National Association for Research in Science Teaching*, Membership Committee, Chair, 2017-2020
- *National Science Teachers Association*, Task Force Member, Student Chapter Program, 2017
- *Association for Science Teacher Education*, Graduate Student Committee, Co-Chair, 2014
- *National Association for Research in Science Teaching*, Membership and Elections Committee, Member, 2014-2017
- *Association for Science Teacher Education*, Long Range Conference Planning Committee, Graduate Student Representative, 2013

Editorial Review Board

- *Contemporary Issues in Technology and Teacher Education*, 2016-2022
- *Journal of Research in Science Teaching*, 2017-2023
- *Journal of Science Teacher Education*, 2015-2021

Manuscript Reviewer

- *Science Educator*, 2021-Present
- *Teaching and Teacher Education*, 2018-Present
- *American Society for Cell Biology*, CBE – Life Sciences Education Journal, 2015-Present
- *National Association for Research in Science Teaching*, *Journal of Research in Science Teaching*, 2015-Present
- *Science Education*, 2015-Present
- *American Association of Physics Teachers*, *The Physics Teacher*, 2011-Present
- *National Science Teachers Association*, *The Science Teacher*, 2011-Present
- *School of Science and Mathematics Association*, *School of Science and Mathematics*, 2011-Present
- *Virginia Association of Science Teachers*, *Journal of Virginia Science Education*, 2011-2014

Proposal Reviewer

- *American Educational Research Association*, Division K – Section 1 & 8, 2015-2018
- *Association for Science Teacher Education*, Annual Meeting, 2012-2016
- *National Association for Research in Science Teaching*, Annual Meeting, 2012-2017

Presider

- *Association for Science Teacher Education*, Annual Meeting, 2012-2016
- *National Association for Research in Science Teaching*, Annual Meeting, 2013-2015, 2018-2019

Strand Coordinator

- *Association for Science Teacher Education*, Pre-service Science Teacher Preparation, 2016-2018

UNIVERSITY SERVICE AND LEADERSHIP

Clemson University

- Tenure and Promotion Committee, 2021-Present
- Curriculum & Instruction Doctoral Program Coordinator, 2020-Present
- Search Committee Chair: Associate Professor of Science Education, 2020-2021
- Undergraduate Academic Integrity Committee, 2020-2021

The University of Mississippi

- Academic Discipline Committee, University Wide, 2018-2020
- Ph.D. Program Redesign Committee Co-Chair, 2019-2020
- Wrote Reaccreditation Report for Science Program, 2019
- Mississippi Teacher Education Program Residential Institute Sessions, 2018
- Masters Students Capstone Reader, 2018, 2020
- Doctoral Program Interviewer, 2018, 2019
- Mississippi Teacher Education Program Committee, 2017-2020
- Secondary Science Program Coordinator, 2017-Present

Northern Arizona University

- Colleague to Colleague Mentor Program, Mentor, 2016-2017
- Productive Beginnings Planning Committee, 2016-2017
- Faculty Council on Learning Committee, 2016-2017
- Faculty Advisor, National & Arizona Science Teacher Association Student Chapter, 2015-2017
- Faculty Rights & Responsibilities Council, 2015-2017
- Faculty Senate, 2015-2017
- Academic Integrity Hearing Board, 2014-2017
- CSTL Writing Group Chair, 2014-2016
- Science Foundation of Arizona, Change the Equation Application Committee, 2014

University of Virginia

- Curry Research Conference Chair, 2013-2014
- Curry Research Conference Program Coordinator, 2012-2013
- Curry Research Conference Presider, 2012-2013
- Curry Research Conference Proposal Reviewer, 2012-2014

COURSES TAUGHT

Clemson University

- EDSC 4270 Teaching Secondary Science: Fall 2020

The University of Mississippi

- EDCI 101 Introduction to STEM Teaching: Fall 2019
- EDCI 352 Education, Society & K-12 Learner: Fall 2017, 2018
- EDCI 353 Planning and Teaching Strategies for Effective Classroom Practice: Spring 2018
- EDCI 419 Classroom Assessment: Spring 2019
- EDSE 400 Principles of Education: Fall 2018, 2019
- EDSE 400 Supervision of Secondary Science Field Placement: Fall 2017, 2018, 2019
- EDSE 446 Special Methods I: Science: Fall 2017, 2018, 2019
- EDSE 456 Special Methods II: Science: Spring 2018, 2019
- EDSE 480 Student Teaching: Secondary Education: Spring 2018, 2019
- EDSE 636 Teaching Secondary School Science: Fall 2018
- EDSE 646 Advanced Methods of Teaching Science: Spring 2018, 2019, 2020
- EDSE 690 Seminar in Secondary Education: Spring 2018
- EDUC 555 History and Nature of Science: Fall 2019

Northern Arizona University

- TSM 300 Knowing and Learning: Spring 2015
- TSM 303 Knowing and Learning in Science: Fall 2015, 2016
- TSM 595 Secondary Science Internship: Fall 2014
- SCI 610 Advanced Science Teaching and Learning: Fall 2014, 2015, 2016
- SCI 612 Using Science Assessments to Facilitate Instructional Change: Spring 2015, 2016, 2017
- SCI 613 History and Nature of Science: Fall 2014
- SCI 630 Survey of Literature in Science Education: Fall 2015, 2016
- SCI 689 MAST Portfolio: Fall 2014, 2015, 2016, Spring 2015, 2016, 2017

University of Virginia

- ASTR 6340 Astronomy Concepts in the Classroom: Summer 2012
- EDIS 4885 Secondary Science Field Placement: Fall 2012
- EDIS 5050 Teaching Secondary Science I: Fall 2012
- EDIS 5051 Teaching Secondary Science II: Spring 2013
- EDIS 5875 Student Teaching Seminar: Fall 2011, Fall 2012, Spring 2013

Punahou School

- High School Physics
- High School Chemistry
- High School Honors Chemistry
- High School Algebra I

University North Carolina School of the Arts

- High School Physics
- High School Chemistry
- High School Physical Chemistry
- Yearbook

PROFESSIONAL AFFILIATIONS

- American Association of Physics Teachers (AAPT), 2011-Present
- American Chemical Society (ACS), 1999-2004, 2011-Present
- American Educational Research Association (AERA), 2011-Present
- Association of Supervisors and Curriculum Developers (ASCD), 2014-Present
- Arizona Science Teacher Association (ASTA), 2014-2017
- Association for Science Teacher Education (ASTE), 2011-Present
- Kappa Delta Phi (KDP), 2018-Present
- Mississippi Science Teacher Association (MSTA), 2018-2020
- National Association for Research in Science Teaching (NARST), 2011-Present
- National Science Education Leadership Association (NSELA), 2014-Present
- National Science Teaching Association (NSTA), 2001-Present
- Professional and Organizational Development (POD) Network in Higher Education, 2016-2017
- School of Science & Mathematics Association (SSMA), 2011-2014
- Virginia Association of Science Teachers (VAST), 2011-2014

DISSERTATION, THESES, NON-THESES, AND GRADUATE STUDENT SUPERVISION

Doctoral Dissertation Committee Member

- Hatice Ozen, University of Georgia, Science Education, 2021-Present
- Alex Carlson, Clemson University, Special Education, 2021-Present
- Yamil Ruiz, Clemson University, Secondary Science Education, 2020-Present
- Jacquelyn Moseley, University of Mississippi, Chemistry, 2020-Present
- Carly Rock, University of Mississippi, Chemistry, 2020-Present
- Savannah Draud, University of Mississippi, Biology, 2019-Present
- Akacia Halliday, University of Mississippi, Biology, 2019-Present
- Jordan Heiman, University of Mississippi, Biology, 2019-Present

Masters Thesis Committee Member

- Timothy Jaynes, Northern Arizona University, Chemistry, 2015-2017
- Peter Holloway, Northern Arizona University, Science Education, 2014-2015

Masters Non-Thesis Committee Chair

- Audrey Baird, Northern Arizona University, Science Education, 2016-2017
- Bailey Mahlum, Northern Arizona University, Science Education, 2016-2017
- Angelica Buenrostro, Northern Arizona University, Science Education, 2015-2017
- Joan Hedman, Northern Arizona University, Science Education, 2015-2017
- Heather Orozco, Northern Arizona University, Science Education, 2015-2016
- Stephanie Beyea, Northern Arizona University, Science Education, 2015

Masters Non-Thesis Committee Member

- Shawn Jones, Northern Arizona University, Science Education, 2016-2017
- Amanda Davis, Northern Arizona University, Science Education, 2016-2017
- Kaitlin Sovinski, Northern Arizona University, Science Education, 2016-2017
- Jeffrey Hines, Northern Arizona University, Science Education, 2015
- Amanda Grimes, Northern Arizona University, Science Education, 2014

Graduate Student Supervision

- Jennifer Bateman, Clemson University, Doctoral Graduate Assistant, 2021-Present
- Yamil Ruiz, Clemson University, Doctoral Graduate Assistant, 2020-Present
- Shelby Watson, University of Mississippi, Doctoral Graduate Assistant, 2019-2020
- Nicole Comstock, University of Mississippi, Masters Graduate Assistant, 2019-2020
- Eric Nolan, Northern Arizona University, Doctoral Graduate Assistant, 2018-2020
- Lauren Simpson, University of Mississippi, Masters Graduate Assistant, 2018-2020
- Sheree Wilson, University of Mississippi, Masters Graduate Assistant, 2018-2020
- Phillip Laney, University of Mississippi, Doctoral Graduate Student, 2017-2019
- Kelsey LeMon, University of Mississippi, Masters Graduate Assistant, 2017-2018
- Tia Raught, Northern Arizona University, Masters Graduate Assistant, 2017-2018
- Megan Walker, Northern Arizona University, Doctoral Graduate Assistant, 2016-2018
- Kayla Arendt, Northern Arizona University, Masters Graduate Assistant, 2016-2018
- Tonya DeBerg, Northern Arizona University, Masters Graduate Assistant, 2015-2016
- Chris Atwood, Northern Arizona University, Masters Graduate Assistant, 2014-2015

PERSONAL PROFESSIONAL LEARNING

- PKAL STEM Institute, 2021
- Camp Making Sense of Science, 2019
- OpEd Program, University of Mississippi, 2019
- Applied Multilevel Models for Longitudinal and Clustered Data, 2019
- Women in Science Writing Retreat, 2019
- Camp Making Sense of Science, 2018
- Women in Science Writing Retreat, 2018
- Camp Making Sense of Science, 2017
- Arizona Science Standards Revision Committee, Arizona Department of Education, 2017
- Matter Facilitation Academy, Making Sense of Science, 2017
- Dynamic Earth Facilitation Academy, Making Sense of Science, 2017
- Women in Science Writing Retreat, 2017

- Force & Motion Facilitation Academy, Northern Arizona University, 2016
- Women in Science Writing Retreat, 2016
- Now what? A workshop for developing your research agenda and identifying funding to support your scholarship, Northern Arizona University, 2015
- Energy Facilitation Academy, Making Sense of Science, 2015
- Argument Driven Inquiry Workshop, Arizona Science Teachers Association, 2014
- Scholarly Writing Workshop, Northern Arizona University, 2014
- NGSS Practices in Action, National Science Teacher Association, 2014
- Presenting Data and Information, Edward Tufte, 2013
- PE4Life Resource Conference, PE4Life, 2009
- Personal Learning Network Seminar, Punahou School, 2009
- Learning Differences Conference, Punahou School, 2009
- LifeTouch Yearbook Workshop, LifeTouch, 2008
- Flinn Chemistry Demonstration Training, Appalachian State University, 2007
- Physics Course for Educators, Montana State University, 2006
- Southern Association of Colleges and Schools Accreditation Training, SACS, 2005
- Physics Modeling Workshop, University of Hawaii, 2004
- Forces and Motion Teaching & Learning Course, JASON Academy, 2004
- Teaching Project-Based Science Teaching & Learning Course, JASON Academy, 2004
- Chemical Safety Seminar, Flinn Scientific, 2003