

Education

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| Doctor of Philosophy, Educational Studies Science Education University of Michigan, Ann Arbor, MI | 2021 |
| Master of Education, Administrative / Supervisory Licensure Southern Utah University, Cedar City, UT | 2011 |
| Bachelor of Science, Degree in Physics Teaching, Math Education Minor Brigham Young University, Provo, UT | 2007 |

Honors & Awards

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| Physics Teacher of the Year2012 <i>Awarded by: Utah Science Teacher Association, nominated by UtSTA board and Utah science teachers</i> | |
| University of Michigan ScholarsFall 2016 – Winter 2020 | |
| School of Education Summer Research GrantSummer 2018, 2019, 2020 | |

Teaching Experience

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| BRIGHAM YOUNG UNIVERSITY, Provo, UTWinter Semester (2021) <i>Primary Instructor for PHY 225 sec2. Introduction to Experimental Physics is a course that engages undergraduate physics majors in scientific experimentation and modeling while also providing opportunities to learn about leadership. Student use circuit design, statistical analysis, and resonant systems to learn more about the practices of science.</i> | |
| BRIGHAM YOUNG UNIVERSITY, Provo, UT ,Fall/Winter (2021-2022) <i>Co-Lead Instructor for SC ED 476R. Working with my colleagues in science education, we mentor and supervise the secondary physical science student teachers and interns. We provide training and feedback for their culminating teaching project (PPAT).</i> | |
| UNIVERSITY OF MICHIGAN, Ann Arbor, MIFall Semester (2020) <i>Graduate Student Instructor for EDUC 793. This was an introductory course to quantitative methods in education research. I worked with small groups during the lecture as well as ran a lab where the students learned to code and analyzed data in Stata as they make progress on the final research paper.</i> | |

UNIVERSITY OF MICHIGAN, Ann Arbor, MIFall/Winter (2016 – 2021)
Graduate Student Instructor for Physics 420 and Earth/Astro 255. These physical science courses were specifically designed for preservice elementary teachers. I designed and ran the weekly labs in the Earth/Astro course and designed and taught all of the content for the physics course. My goal for the courses was to give the preservice teachers authentic experiences with the science practices and content.

UNIVERSITY OF MICHIGAN, Ann Arbor, MI.....Fall Semester (2016, 2019)
Teaching Apprenticeship/Assistant for EDUC 421. I assisted in the design, planning, and instruction of the science teaching methods course for preservice elementary school teachers.

PROVO COLLEGE, Provo, UT.....Feb 2016—May 2021
Adjunct Professor for Physics 210, Physics 250, Math 110, Math 205. These courses are taught in an online environment to students who are seeking associates and bachelor's degrees in the nursing field. I designed the Math 205 (Elementary Statistics) course.

BRIGHAM YOUNG UNIVERSITY, Provo, UT.....Aug 2014—Aug 2016
Clinical Faculty Associate for PHYS 276, PHYS 377, PHSCS 310, PHSCS 311. Co-taught physical science teaching methods and practicum courses. These courses were designed to give secondary science teachers foundational and practical experience teaching science as well as experience with inquiry-based science instruction.

BRIGHAM YOUNG UNIVERSITY, Provo, UT.....Aug 2014—Aug 2016
Clinical Faculty Associate for SC ED 476R. I worked with the faculty to supervise and mentor secondary student teachers and interns in their science teaching placements.

UTAH VALLEY UNIVERSITY, Orem, UT.....Sept 2008—April 2016
Adjunct Professor for PHSC 1010, ASTR1040, PHSC 1000. These were night or summer courses I designed and taught to develop foundational content knowledge for undergraduates.

ALPINE SCHOOL DISTRICT, American Fork, UT.....Aug 2007—Aug 2014
Westlake High School, Lehi High School
AP Physics B & C, Physics, Astronomy, Chemistry, Algebra
I designed and taught these courses to be student centered spaces that allowed students to engage in science with first-hand experiences focused on developing content knowledge.

- Advanced Placement Test, Physics C
Student pass rate over 90% for 2008-2014

UtSTA Science Endorsement Courses, Provo, UT.....Summer 2011-2016

- Co-taught Physics I and II endorsement courses.
- Co-Instructor for Astronomy endorsement course: I designed and ran the night-lab portion of the course

Research Experience

Physics Education Research: Engaging Preservice Teachers in PER

Brigham Young University.....Fall 2021 – Present

Funded by the Department of Physics and Astronomy

Principal Investigator: Dr. Adam Bennion

- Personal Research Objective: To engage preservice secondary science teachers in education research aimed toward developing research skills and expanding their knowledge of the science education field. We are currently developing and implementing modeling labs in undergraduate physics lab courses and measuring educational outcomes.
- My Contributions: I organized and recruited the research group and developed a curriculum to help mentor and train new undergraduate researchers. I lead weekly research meetings and aid the undergraduates in their efforts as they progress toward conference presentations and publications.

Ambitious Teaching: Trajectories of Elementary Science Teachers

University of Michigan.....Fall 2017 – Summer 2020

Funded by the Spencer Foundation

Principal Investigators: Dr. Elizabeth Davis and Dr. Annemarie Palincsar

- Personal Research Objective: To contribute to the literature on novice teachers' knowledge and use of the science practices as defined by the Framework for K-12 Science Education and the Next Generation Science Standards.
- My Contributions: I coded and did analysis on interviews, lesson plans, and video records of teaching. I assisted other team members by going through rounds of interrater reliability in their coding. I was the lead author on two papers submitted for publication.

Centers Research Project in Association with Teaching Works

University of Michigan.....Fall 2016 – Summer 2017

Funded by the Gates Foundation

Principal Investigator: Dr. Deborah Ball of Teaching Works.

Project Lead: Dr. Elizabeth Davis

- Project Objectives: To develop a curriculum guided by a set of high-leverage science teaching practices for elementary science methods educators.
- My Contributions: I developed and edited several modules within the curriculum. Specifically, my work focused on tools related to students' alternative ideas in science and interpreting what students say and do.

Research Experience for Teachers

Brigham Young University.....Summer 2008

Principal Investigator: Dr. Denise Stephens

- Research Objective: Identify binary systems in the Kuiper Belt and add data to the New Horizons Mission by tracking Pluto's moons (Nix and Hyrda).
- My Contribution: I identified several possible binary systems as well as plotted the position of Nix and Hydra for several frames of data.

Publications

*Vongsawad, C. T., Bennion, A., Hollingsworth, S. P., Terry, K. N., Dobbs, C. E., Fronk, G. H., & Neilsen, T. B. (under review). *Mentored student research: A case study evaluation of benefits and best practices*.

Bennion, A., Bismack, A., Davis, E. A., & Palincsar, A. S. (under review). *The resources of instructional contexts: Examples from the development of elementary science teachers*.

Bennion, A., Davis, E. A., & Palincsar, A. (2022). Novice elementary teachers' knowledge of, beliefs about, and planning for the science practices: A longitudinal study. *International Journal of Science Education*.

*Graduate or Undergraduate Co-author(s)

Presentations

Bennion, A., Davis, E. A. (2022). *Connecting the science practices to teaching and learning: Preservice elementary teachers' beliefs and perceptions*. Paper presented at the annual meeting of the Association for Science Teacher Education organization, Greenville, SC.

Bennion, A., Davis, E. A. (2021). *Preservice elementary teachers making sense of scientific modeling: A longitudinal study*. Paper presented at the annual meeting of the NARST organization, virtual conference.

Bennion, A., Davis, E. A. (2021). *Preservice elementary teacher knowledge and use of scientific modeling across a teacher education program*. Poster presented at the annual meeting of the Association for Science Teacher Education organization, virtual conference.

Bennion, A., Bismack, A., Davis, E. A., & Palincsar, A. S. (2020). *The resources of instructional contexts: Examples from the development of elementary science teachers*. Paper accepted at the annual meeting of the NARST organization, Portland, OR; conference canceled due to COVID-19.

Bennion, A., & Davis, E. A. (2020). *Engaging in the science practices: Preservice elementary teachers' experiences and lesson planning in a physics content course*. Paper accepted at the annual meeting of the NARST organization, Portland, OR; conference canceled due to COVID-19.

Bennion, A., Davis, E. A., & Palincsar, A. S. (2019). *Preservice elementary teachers' knowledge, beliefs, and use of the science practices*. Paper presented at the annual meeting of the NARST organization, Baltimore, MD.

Bennion, A., & Davis, E. A. (2019). *Preservice elementary teachers' exposure to the science practices in a physics course*. Poster presented at the annual meeting of the NARST organization, Baltimore, MD.

Practitioner Presentations

Bennion, A. (2021). *Shooting the Gap*. Professional development on introducing ideas from quantum mechanics in high school curriculum, presented at the annual Utah Science Teacher Association conference, Provo, UT.

Merrell, D., & Bennion, A. (2016). *Good vibrations: How to use wave demos in a science classroom*. Professional development presented at the annual Utah Science Teacher Association conference, Provo, UT.

Bennion, A. (2015). *Using video analysis in a science classroom*. Professional development presented at the annual Utah Science Teacher Association conference, Provo, UT.

Bennion, A. (2014). *Budget friendly physics labs*. Professional development presented at the annual Utah Science Teacher Association conference, Provo, UT.

Bennion, A. (2013). *Labs for an AP physics classroom*. Professional development presented at the annual Utah Science Teacher Association conference, Provo, UT.

Professional Memberships

National Association for Research in Science Teaching (NARST) (2017-Present)

Association for Science Teacher Educators (ASTE) (2020-Present)

American Educational Research Association (AERA) (2020-Present)

American Association of Physics Teachers (AAPT) (2021-Present)

Quantum for All (2021-Present)

Utah Science Teachers' Association (2007-Present)

Service

Committee Member: Instructional Improvement Committee.....2021 to present
Brigham Young University – Responsible for updating the learning goals for the physics education and physical science education majors, prepared materials for peer teaching reviews, served as peer teaching reviewer, and attended committee meetings

Committee Member: Undergraduate Committee.....2021 to present
Brigham Young University – Responsible for advising all of the undergraduate education majors, attending undergraduate events (graduate major fair), and attending committee meetings

Moderator for Science Education Poster Session at AAPT Conference.....Winter 2022

- Reviewed Paper submissions for ASTE conference**.....2021 to present
Review 3-5 paper submissions each in year for admittance to the conference
- Reviewed Paper submissions for NARST conference**.....2018 to present
Review 3-5 paper submissions each in year for admittance to the conference
- Graduate student representative for the Campus Visit Day**Winter 2017-18
University of Michigan, School of Education
- Utah Science Teachers' Association Board Member**.....,.....2011 - 2016
I helped organized professional development opportunities for science teachers in Utah.
- CITES Associates Program – BYU and Provo School District Partnership**.....2014 - 2015
I collaborated with teachers, administrators, and university education professors throughout a school year. The group met five times for two-day conferences where different educational topics and classroom interventions were discussed.
- Westlake High School Accreditation**..... 2011
Focus group leader for Quality Assessment Systems during the 2011 Westlake High School accreditation.

Skills

- Experience teaching virtual and online courses (physics, Earth science, statistics)
- Basic knowledge of coding in Python.
- Experience with quantitative methods (e.g., regression, logistic regression, and factor analysis).
- Experience with the statistical software *Stata*.
- Experience with qualitative methods (e.g., interviews, data coding, and video analysis).
- Licensed as a teacher and administrator in the state of Utah.