

KELLI WARBLE

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SUMMARY

- Teacher in Residence with Arizona State University physics department, acting to increase the quality and quantity of physics teachers in the U.S. and shift university teaching culture to focus on student engagement.
- Graduate student in Master of Science and Technology Policy program in the School for Innovation in Society at Arizona State University, focusing on STEM education policy.
- Twenty-five years as a high school and college physics and mathematics teacher utilizing practices inspired by STEM education research.
- Twenty years as a Modeling Workshop Leader facilitating workshops for teachers transforming STEM education through Modeling Instruction pedagogy.

PROFESSIONAL EXPERIENCE

AUGUST 2012– PRESENT

Teacher in Residence, Arizona State University Department of Physics, Tempe, Arizona

- Mentor current and future teachers and recruit STEM undergraduates to participate in teacher preparation initiatives.
- Hire, train, and supervise undergraduate student Learning Assistants to promote student engagement in introductory university physics courses.
- Plan and teach physics pedagogy courses and introductory physical science with embedded active learning and student discourse.

JANUARY 2016 – PRESENT

K-12 Teacher Policy Consultant, American Association of Physics Teachers, College Park, Maryland

- Member of [STEP UP](#) propagation team working to disseminate lessons and everyday actions shown to promote gender equity in physics.
- Co-creator of Master Teacher Policy Fellowship empowering teacher-driven efforts to improve physical science education policies starting at the state level.
- Member of Physics Master Teacher Leader Task Force convened to engage K-12 teachers as agents of change in physical science education.

SUMMER 1998– PRESENT

Modeling Workshop Leader and Curriculum Developer, American Modeling Teachers Association, United States

- Co-designed curriculum for Modeling in Middle School Science in conjunction with expert middle school science teachers and veteran implementers of Modeling pedagogy.
- Led Middle School Science Modeling Workshops for teachers in summer 2014-2018 in Phoenix, New York City, New Orleans, and Michigan respectively.
- Co-led over fifteen summer workshops from 1998 to 2014 training high school and college instructors in the use of model-centered, constructivist pedagogy in introductory physics courses.
- Trained teacher-participants to address local and national education standards and integrate educational technology effectively into the STEM curriculum.

2007– 2012, 2018–PRESENT

Teacher Advisor and Professional Development Leader, Knowles Teaching Initiative, United States

- Worked with selection committee to choose mathematics and science teachers to be awarded fellowship preparing a national network of future master teachers and innovative leaders in U.S. education.
- Designed and co-led teacher professional development emphasizing connections between mathematics and science and models of energy used in chemistry and physics.
- Mentored new physics and mathematics teachers who received a Knowles Fellowship during their first five years of teaching.

AUGUST 2010–JUNE 2012

Ninth Grade Mathematics and Science Teacher, Arizona School for the Arts, Phoenix, Arizona

- Authored and instructed algebra, honors geometry, and biology courses incorporating active learning and embedded student discourse.
- Worked with team of ninth grade academic and arts teachers to ensure every student progressed academically and personally.

AUGUST 2006–JUNE 2010

Physics and Mathematics Teacher, Dysart Unified School District, Surprise, Arizona

- Authored and instructed physics and mathematics courses in Title I district with high percentage of economically disadvantaged students.
- Co-developed courses focusing upon student-centered interactive engagement, hands-on learning, and modeling pedagogy in physics, algebra 2, geometry, pre-calculus, and calculus.

AUGUST 1994–JUNE 2006

Physics and Mathematics Teacher, Buckeye Union High School, Buckeye, Arizona

- Designed and instructed physics and mathematics courses focusing upon real-world applications and student engagement at a semi-rural school with a high percentage of non-English speakers.
- Developed and instructed algebra 1 lab including real-world data collection activities requiring the application of algebra functions and concepts.
- Served as district Technology Advisor, Director of Curriculum and Testing, and Science Department Chair.

SEPTEMBER 1990–MAY 1993

After School Math and Science Enrichment Instructor, Friendly House, Phoenix, Arizona

- Planned and facilitated mathematics, engineering, and science activities for at-risk youth as part of after-school and weekend enrichment program.
- Implemented 2nd to 9th grade lessons inspired by *GEMS (Great Explorations in Math and Science)*, *AIMS (Activities to Integrate Mathematics and Science)* and *TOPS (Task-Oriented Physical Science)*.

TALKS, PUBLICATIONS, and AWARDS

Talk: [“STEP UP \(Supporting Teachers to Encourage the Pursuit of Undergraduate Physics\) Introduction,”](#) joint meeting between STEMteachersPHX and the Arizona Section of the American Association of Physics Teachers, September 28, 2019.

Invited Article: [“Should We Prepare Future Teachers to Advocate for Effective School Policies?”](#) American Physical Society Forum on Education Newsletter, Spring 2019

Presentation: [“Equity for Arizona Science Education: Save Physics.”](#) originally for Arizona School Superintendent on December 14, 2018, continuously updated since.

Workshop Leader: [“STEP UP 4 Women: Support gender equity in physics education through active strategies and discussions.”](#) American Association of Physics Teachers summer meeting, Washington, DC, July 29, 2018.

Outstanding Teacher Award, Arizona State University of Department of Physics, 2016-2017

Talk: [“Aspiring to Lead: Developing Teacher Leadership and Advocacy.”](#) Arizona Section of the American Association of Physics Teachers fall meeting, September 30, 2017.

Solicited Editorial: [“Stories from the field: It seems as if no one is asking classroom teachers what will be most helpful.”](#) created for 100kin10 Grand Challenges in STEM Education interactive site, September 2017.

Contributing Author: [Aspiring to Lead-Engaging K-12 teachers as agents of national change in physics education](#), a report from the AAPT Physics Master Teacher Leader Task Force, May 2017.

Invited Article: [“PER-based Teacher Preparation at Arizona State.”](#) American Physical Society Forum on Education Newsletter, Summer 2016

Invited Workshop: [“The Nature of Science \(vs. the Nature of Science Education\).”](#) Physics Teacher Education Coalition Teacher in Residence Gathering, College Park, MD, July 25, 2015.

Invited Talk: [“Explorations in Science Teaching Course: An Early Classroom Experience for STEM Majors.”](#) Physics Teacher Education Coalition Conference, Seattle, Washington, February 6, 2015.

Talk: [“Physics Department Culture: Fostering Incremental Shifts as Teacher in Residence.”](#) American Association of Physics Teachers summer meeting, July 15, 2013.

Publication: Strunk, A., Gamez Warble, K., Nemanich, R.J., and Culbertson, R. (2011). “Incorporating Authentic Scientific Research and the Nature of Science into the High School Classroom,” Materials Research Symposium Proceedings, Vol. 1364, pub. 2011.

Westside Impact Teacher of the Year, Buckeye Union High School, 2005-2006.

PROFESSIONAL ORGANIZATIONS and VOLUNTEER WORK

SEPTEMBER 2010 – PRESENT

Lifetime Member, American Modeling Teachers Association

Presidential Succession (currently President) since July 2017

FEBRUARY 2019

Co-founder of Arizona team for Inter-American Teacher Education Network (ITEN), sponsored by the Organization of American States

SEPTEMBER 2012 – PRESENT

Member, American Association of Physics Teachers

Section Representative, Arizona Section since September 2015

SEPTEMBER 2015 – MAY 2017

Co-founder and Web Designer, STEMteachersPHX, Phoenix, Arizona

EDUCATION and FELLOWSHIPS

DECEMBER 2019

School for Innovation in Society, Arizona State University

Master of Science and Technology Policy

NOVEMBER 2016

Institute for Quantum Computing, University of Waterloo

Schrodinger's Class Teaching Fellow

SUMMER 2010

Arizona State University Nanosurfaces Lab

Math and Science Teaching Fellow

SUMMERS 1995-1997

Department of Physics, Arizona State University

Leadership Modeling Workshop in Physics, NSF-funded program for high school physics teachers

MAY 1994

Arizona State University

Post-Baccalaureate Certification in Secondary Education, mathematics and physics

AUGUST 1990

University of Arizona

Bachelor of Science, mathematics