Casey M. Williams

The University of Kansas
Accessible Teaching, Learning and Assessment Systems (ATLAS)

Education

- Ph.D. in Educational Psychology, Texas Tech University (August, 2019)
- M.Ed. Educational Psychology, Texas Tech University (August, 2016)
- B.G.S. in Psychology with minor in Astrobiology
  The University of Kansas, (May, 2012)

Research Interests

I have worked on student-centered, inquiry-based designs for both informal and formal educational environments in the context of aerospace curricula. Currently, I research about the barriers teachers face when trying to teach climate change in secondary science classrooms. I look at the relationship between teacher self-efficacy, perceived behavioral control and the willingness to engage in pro-environmental and climate change mitigation behaviors. Understanding how individual/group identity, ideology, and views on climate change relate to individual and collective efficacy can inform both student and teacher action to learn about and solve the problem of climate change in the United States. I also enjoy learning about different statistical modeling techniques, confirmatory and exploratory factor analyses, structural equation modeling, item response theory and how they relate to the scientific method, data analysis and predicting relationships among variables.

Publications/Presentations

Williams, C. (2019). Analysis of Factors Related to Science Teachers' Perceptions of Climate Change: Implications for Educators (Doctoral dissertation).

Program Evaluations:

Burley, H., Youngblood, T., Williams, C. M., & Yeter, I. (2015) SystemsGo Final Program Evaluation.

Burley, H., Williams, C., Youngblood, T., Meador, A. & Phillips, R. (2017) SystemsGo summer 2016 final evaluation: Scaling up SystemsGo: Laying the foundations for expansion and growth. Lubbock, TX: Texas Tech University.

Conference Presentations:

Burley, H., Williams, C., Youngblood, T. & Yeter, I.H. (2016). *Understanding "failure" is an option*. Paper presented at the Annual International American Society for Engineering Education (ASEE) Conference & Exposition, New Orleans, LA.

Burley, H., Williams, C., Youngblood, T., Phillips, R., Crews, C., Lertora, I., & Oluwatobiloba, T. (2017). *Productive failure in texas classrooms: exploring positive effects of the systemsgo classroom*. Paper presented at annual Southwest Educational Research Association in San Antonio, TX.

Burley, H., Youngblood, T., Yeter, I. & Williams, C.M. (ASEE conference, 2016). *Engineering an evaluation for a growing rocket program: lessons learned.* Presented at Annual American Society of Engineering Education conference in New Orleans, LA.

Phillips, R. & Williams, C. (2017). *Blasting through barriers: how the systemsgo classroom cultivates success in all students*. Presented at the annual Southwest Educational Research Association in San Antonio, TX.

Williams, C. M., Burley, H. & Youngblood, T. (2016, February). *All systems go: a preliminary investigation into a STEM-centered, inquiry-based program*. Paper presented at the annual Southwest Educational Research Association in New Orleans, LA.

Yeter, I., Burley, H., Youngblood, T. & Williams, C.M. (2016, June). *Developing a questionnaire and evaluation methods for a high school rocket program.* Presented at Annual American Society of Engineering Education conference in New Orleans, LA.

Youngblood, T., Yeter, I., Williams, C. M., & Burley, H. (2016, June). *STEMChoice: an examination of program evaluation data in a STEM-centered inquiry based program.* Presented at Annual American Society of Engineering Education conference in New Orleans, LA.

Research Experiences

- Research Assistant, Texas Tech University (2014-2019)
    - Develop, distribute and conduct surveys to analyze statistical data from teachers and students.
    - Presented at multiple conferences on STEM education.
    - Learned program evaluation techniques while working on a rocket program in Texas.
    - Reviewed graduate student surveys for a 5-year review for the College of Education at Texas Tech
    - Collaborated with multiple departments on campus and helped analyze data for the Teaching Learning and Professional Development Center (TLPDC) to advance administrative operations.

Teaching Interests

My teaching interests include multicultural education, science communication, physics, climate science, sustainability education, biology, environmental science, history of science, engineering education, mathematics education, project/problem-based learning, student-centered learning and constructivist approaches to learning.

Teaching Experiences

- TA for Intro to Statistics (Spring, 2019)
    - Helped to develop syllabus, write test questions, and develop lessons for online instruction.
- TA for Introduction to Educational Research (Summer, 2015)
    - Helped to grade quizzes, read open-ended responses, and provide feedback to students.
    - Participated in and observed classroom discussions.
    - Provided constructive feedback on student's writing by meeting one on one and via email.

TTU Physics Education Research Presentations:

Williams, C. & Cloutier, A. (2016). Procedural vs conceptual knowledge: finding the sweet spot for learning.

Williams, C. (2016). The quantum classroom: how curiosity can dampen politically motivated reasoning.

Williams, C. (2017). How can science fiction induce interest and life-long learning in science?

Professional Experience

- High School Science teacher at African-Centered College Preparatory Academy, 2012-2014
- South Central Climate Science Center Early Career Professional Development Training, Summer 2016
- 1st grade teacher at Tulsa Summer Institute- Teach For America, 2012
- Americorps Service, 2012-2014
    - Became certified as a biology teacher in state of Missouri as well as took graduate classes while teaching.

Awards

AT&T Chancellor's Fellowship, 2014-2018 ($16,000)

Lowe's Grant to renovate the library for science materials, to build an outdoor science classroom, community garden, butterfly garden, and courtyard for all students at Afrocentric Preparatory Academy ($71,400)

Douglas and Judy Simpson Doctoral Students National Presentation Award ($500)

Burley, H., Yeter, I., Youngblood, T., & Williams, C.M. (2016). Texas Tech University College of Education Innovative Partnership Award. ($10,000).

Americatalyst, LLC. Awarded doctoral student invite to accompany Dr. Katharine Hayhoe to think tank concerning the effects of climate change on the housing market, Austin, TX, September 7th-9th, 2017.

Climate Engagement Fellowship at UC-Santa Cruz Sierra Nevada Aquatic Research Lab (SNARL), Mammoth Lakes, CA, September 11th-15th, 2017.

South Central Climate Science Center AAAS Travel Grant, February 15th- 19th, 2018 ($1,000)

Beto for Texas Student Fellowship, October 18th- November 6th, 2018 ($800)

Professional Membership/Affiliation

Member of The Cherokee Nation.

Community Relations Coordinator, 3rd Coast Group Leader and President for Citizens' Climate Lobby- Lubbock Chapter, 2017-2019.

UC-Santa Cruz Climate Engagement Network, 2017-present.

Texas Tech Climate Science Center, 2016-present.

South Central Climate Science Center, 2016-present.

American Society of Engineering Education (ASEE) member, 2016-present.

Vice President for Society For STEM Education (ASEE student chapter 2015-2018).

President for Society For STEM Education (ASEE student chapter 2018-2020).

Member of Physics Education Research group (PER) at Texas Tech University, 2015-2016.

Media Relations Coordinator for YouthMappers (USAID funded geospatial graduate student group), 2016-2017.

Consulting Work

Climate Science Curriculum developed for pre-service elementary and middle school science teachers in Lubbock, Texas ($10,000).

National Center for Science Education (NCSE). Worked with NCSE to evaluate Next Generation Science Standards (NGSS) for each state in the United States. ($2,000)

Volunteer Work

Scorekeeper for Hub City Regional *FIRST* Robotics Competition Lubbock, TX April 1-3, 2016.

Teacher at Zombie Survival Camp at Science Spectrum Lubbock, TX June 7th- June 9th, 2016.

Volunteer at Citizens' Climate Lobby Lubbock, TX January 2017- present.

Co-wrote episode of "Global Weirding" for Dr. Katharine Hayhoe on KTTZ public television.

Co-wrote op-ed published in Texas Monthly entitled "West Texas: The Future of Texas Energy Resilience."

Invited Talks

Climate Change and the American Classroom, November 12th, 2019, Sponsored by TTU Climate Center and Local Bar and Grill, Lubbock, Texas.

Climate Change Education in the United States, February 22nd, 2020, Sponsored by Citizens' Climate Lobby—Lubbock.

Journal Reviews Submitted for Publication

Christine L Krebs, Jamie Loizzo, Whitney Stone, Ricky W Telg (2020). Scientist Online: Entomologists' Experiences Engaging with School Audiences through Skype in the Classroom . *Front. Commun.* **5**:00075. doi: 10.3389/fcomm.2020.576593