

Holly Plank
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Education

University of Pittsburgh School of Education, Pittsburgh, PA

Ph.D., Learning Sciences and Policy, August 2019-Present, Projected 2024

Advisor: Dr. Cassie Quigley

University of Oklahoma, Tulsa, OK

Masters of Education, Educational Administration, Curriculum and Supervision, August 2016

Shippensburg University of Pennsylvania, Shippensburg, PA

B.S.Ed., Earth and Space Science, Secondary Education

Minor, International Studies, May 2013

Honors Thesis: "Environmental Education: Improving Scientific Literacy Through Inquiry"

Research Experience

Graduate Student Researcher | University of Pittsburgh | August 2019- Present

Environmental Justice Pathway: Empowering Students Through Relevant and Agentic Data Science Lessons

PI: Cassie Quigley (2021- Present) (\$100,000)

- Collaborated with a team of researchers on Grable Foundation Grant to design teacher workshops, example lesson plans, observation tools, pre and post surveys, and interview protocols.

Strength Across Schools (SAS) Partnership: A Multi-District Collaboration to Develop Justice-Focused Computational Thinking and Computer Science Curricular Materials for Middle School English Language Arts

PI: Cassie Quigley (2021- Present) (\$299,578)

- Collaborated with a team of researchers on the CSforAll National Science Foundation Research Practice Partnership Grant.

Sisterhood of Coding: Increasing Occupational Identity of Girls of Color Through an After-School Coding Club. The Donna and Ian Mitroff Award. Investigators: Cassie Quigley, Amanda Boulder, and Tinukwa Boulder

(2020-2021) (\$3,500)

- Collaborated with a team of researchers to design, analyze, and report the impact of the Sisterhood of Coding after school program.
- Supported undergraduate club facilitator in design, pre and post session debriefs, and real time coaching.

PA Smarts: STEAM Studio Model for Innovation PI: Cassie Quigley (2019- 2020) (\$500,000)

- Collaborated with a team of researchers to analyze implementation of computational thinking and collaborative problem solving through STEAM instructional units in K-12 schools
- Conducted, transcribed, and coded interviews with participating students and teachers
- Designed a mixed-methods study to analyze computer science and STEM identity development in response to collaborative problem solving among girls and students of color.

Museum Lab Research to Practice Partnership: Knowledge-Building Partnership with Manchester Academic Charter School and Children's Museum of Pittsburgh. (2020- 2021) (\$247,160) Investigators: Cassie Quigley

- Conducted interviews with students, teachers, teaching artists, and organization leaders.
- Designed "Empowering Youth" collaborative learning experience to spark collaboration between the two organizations

- Connected Learning Research Lab: Active member of bi-weekly lab aimed at forming research collaborations, creating proposals, examining methodological approaches, sharing scholarly work, and discussing pressing issues in the Learning Sciences, Clemson and University of Pittsburgh

Peer-Reviewed Journal Articles

Herro, D., Quigley, C., **Plank, H.** & Abimbade, D. (2022). Instructional Practices Promoting Computational Thinking in STEAM Elementary Classrooms. *Journal of Digital Literacy and Teacher Education*.

Herro, D., Quigley, C.F., **Plank, H.**, & Abimbade, D. (2021). Understanding Students' Peer Interactions During Making Activities Designed to Promote Computational Thinking. *Journal of Educational Research*. DOI: [10.1080/00220671.2021.1884824](https://doi.org/10.1080/00220671.2021.1884824)

Quigley, C.F., Herro, D., King, E., and **Plank, H.** (2020) STEAM Designed and Enacted: Understanding the Process of Design and Implementation of STEAM Curriculum in an Elementary School. *Journal of Science and Technology Education*. <https://doi.org/10.1007/s10956-020-09832-w>

Papers Under Review

Quigley, C.F., Herro, D., **Plank, H.**, & Owens, A. (2021). Transforming Computer Science Education: Exploration of Computer Science Interest and Identity of Historically Underrepresented Youth. *Science Education*. Under Review.

Book Chapters

Plank, H. & Bell, S. (2015). "Teach for America" In *Solving Problems That Matter and Getting Paid for It: STEM Careers in Social Innovation and Global Sustainable Development*. Edited by Khanjan Mehta.

Other Publications

Plank, H. (2022). Critical technology integration in pursuit of a liberatory engineering education. In Proceedings of the American Society for Engineering Education (ASEE).

International/ National Refereed Presentations

Plank, H. (2022). Critical technology integration in pursuit of a liberatory engineering education. Paper presentation. American Society for Engineering Education- North Central Section Conference (ASEE). Pittsburgh, PA. Paper published in the Proceedings of 2022 ASEE Conference.

Plank, H., Henry, H., & Quigley, C.F. (2022). Why Environmental Justice? Rethinking Science Educators' Engagement in Environmental Education. Workshop presentation. Association of Science Teacher Educators (ASTE). Greenville, SC. *In-person workshop canceled due to COVID. Virtual Poster Session.

Plank, H., Henry, H., Quigley, S., & Quigley, C.F. (2022). Coding Nature: Bridging the Gap Between Computer Science and Environmental Justice. Presentation. Science Educators for Equity, Diversity, and Social Justice (SEEDS).virtual Conference, United States.

Quigley, C.F., Herro, D., **Plank, H.**, Owens, A. (2021, April 9-12) "Girls are Crafty, That's Why I Like Coding": Increasing Occupational Identity of Girls of Color with Computational Thinking during Collaborative Problem-Solving" Paper presentation. American Education Research Association (AERA), virtual conference, United States.

Herro, D., Quigley, C., **Plank, H.**, & Abimbade, O., (2021, April 9-12). Promoting equity through collaboration: Exploring youth social interactions during making activities. Paper presentation. American Education Research Association (AERA), virtual conference, United States.

Quigley, C.F., Herro, D. **Plank, H.** (2021) STEAM Curriculum Design and Implementation: Understanding Curricular Changes in an Elementary School. NARST Annual International Conference. Orlando, FL.

Quigley, C.F., Herro, D. **Plank, H.** (2021) STEAM Designed and Enacted: Understanding the Process of Design and Implementation of STEAM Curriculum in an Elementary School. Association for Science Teacher Education (ASTE). Salt Lake City, Utah.

Quigley, C., Herro, D. **Plank, H.**, Owens, A. Lojek, V. & Edkins, S. (2021-January) Conference Workshop: "One Student Does All the Work": Rethinking Collaboration for Computational Thinking Settings. Association of Science Teacher Educators (ASTE). Salt Lake City, Utah.

Quigley, C., Herro, D., & **Plank, H.** (2021). "Girls are Crafty, That is Why I Like Coding": Increasing Occupational Identity of Girls of Color with Computational Thinking during Collaborative Problem-Solving. Science Educators for Equity, Diversity, and Social Justice (SEEDS) Scholarship Incubator Presentation. Virtual.

Quigley, C.F., **Plank, H.**, Lojek, T., Payne, S., Owens, A., Herro, D. (2020-October) "Just like Peas and Carrots"... Computational Thinking and Collaborative Problem-Solving Go Hand-in-Hand to Promote Equity in the Classroom. National Science Teacher Association (NSTA), Pittsburgh, PA. Conference canceled due to COVID-19 Pandemic

University Teaching Experience

University of Pittsburgh | School of Education | January 2022- April 2022

Graduate Teaching: Freedom Seminar- Place, Collective Economies, and Environmental Justice

- Collaborated with a working group of students and faculty to design living syllabus.

University of Pittsburgh | School of Education | January 2022- April 2022

Graduate Teaching: Freedom Seminar- Global Water Activism and STEM pedagogies

- Collaborated with a working group of students and faculty to design a living syllabus.

University of Pittsburgh | School of Education | January 2020- May 2020

Teacher of Record: Teaching and Learning III. MAT Program.

- Instructor of record for master's level course in Instruction and Learning.
- Created a syllabus for the second semester of Teaching and Learning for Masters of Arts in Teaching pre-service science teachers. Organized guest speakers, updated the syllabus, created assignments, and oversaw project presentations for 7 students.
- Supported transition to online-only platform during the COVID-19 pandemic.
- 100% course evaluation response rate. 100% instructor overall teaching effectiveness rating.

University of Pittsburgh | School of Education | August 2020- December 2020

Graduate Teaching Assistant: Teaching and Learning II. MAT Program. Professor Michelle Newstadt (Fall 2020)

- Helped teach a masters-level science methods course that covered standards, lesson planning, unit planning, orchestrating constructive discourse, and learning environment facilitation.
- Designed a research project to analyze students' implementation of Universal Design for Learning strategies to improve lesson plans for students who are deaf and hard of hearing
- Supported transition to online-only platform during the COVID-19 pandemic.

Honors and Awards

2022 Mascaro Center Sustainability Award

Environmental Justice Freedom Seminars

Grants

University of Pittsburgh Year of Data and Society | 2021-2022

My Nature Outing- Stephen Quigley, Cassie Quigley, Holly Plank, and Hillary Henry. \$6,925

Council of Graduate Students in Education | 2021-2022

Travel Grant. \$472.20

Service to the Profession

Council of Graduate Students in Education | Executive Board | Secretary | September 2020-June 2021

Council of Graduate Students in Education | Officer | Teaching, Learning, Leading Department Representative | September 2021-Present

Teaching, Learning, and Leading Department Student Governance Committee | Sept. 2021-Present

Digital Media and Learning Tenure Stream Search Committee Member | 2020-2021

Digital Media and Learning Appointment Stream Search Committee Member | 2020-2021

Academic Programs Committee Member | University of Pittsburgh School of Education | 2022-Present

Year of Creativity Steering and Funding Committees | University of Pittsburgh | 2019-2020

Sustainability Student Working Group | University of Pittsburgh | 2022

PittEd Social Justice Curriculum Fair | Organizing Committee and Roundtable Moderator | 2021-2022

Volunteer Professional Development Facilitator for ELIE Circle, LLC. | 2020-Present

American Education Research Association Conference, Question and Answer Facilitator, 2021

Education Experience: Teaching, Instructional Coaching, School Leadership, and Informal Education

Manager, Teacher Leadership Development | Teach For America: Greater Tulsa | June 2016- May 2019

- Provided individualized coaching for ~26 secondary educators on instructional techniques, classroom management, and curriculum
- Corps Satisfaction Index net score 75%, Corps and Alumni Leadership Index net score 86%
- Designed and facilitated group learning experiences rooted in secondary pedagogy
- Critically analyzed student outcome data to tailor educator development; supported educators in data analysis
- Supported regional and national staff in initiatives including participating in corps member selection and matriculation, planning and executing regional induction and orientation, and developing regional staff experiences for personal and professional growth.
- Piloted alumni teacher coaching for Greater Tulsa region

School Director: Cooper Middle School | Teach For America: Tulsa Institute | February 2018- July 2018

- Directly managed six Corps Member Advisors and one School Operations Manager at Cooper Middle School
- Served as a school administrator for 80 novice corps members from 11 different regions servicing 274 rising 5th through 9th graders
- Collaborated with content-specific Teacher Education Facilitators and Diversity, Equity, and Inclusiveness Facilitators to provide holistic development for novice teachers throughout their five week pre-service experience.
- Facilitated sessions on Teaching as Leadership, Special Education, Universal Design for Learning, Linguistically Responsive Teaching, Second Language Acquisition, Race-Based Affinity Spaces, Diversity Equity and Inclusiveness, and Culturally Relevant Pedagogy.

Science Academic Achievement Cohort Facilitator | Teach For America: Greater Tulsa | June 2016- May 2019

- Designed and facilitated group learning experiences rooted in science pedagogy for first and second year corps members
- Provided individualized coaching for ~25 secondary educators on curriculum development, instructional techniques, and learning environment planning and facilitation

Greater Tulsa Corps Member | Teach For America: Greater Tulsa | 2013-2015

Middle School Science Teacher | Hale Junior High School, Tulsa Public Schools | 2013- 2016

Science Department Chair/ Professional Learning Community Leader | Jan. 2014-June 2016

Assistant Director, Camp Counselor, Volunteer Naturalist | Camp Kirchenwald | 2010- 2015

- Coached and evaluated counselors and support staff with Lutheran Camping Corporation in Colebrook, PA.
- Supervised children age 4-18, designed and led camp-wide activities/nature day and overnight trips.
- Developed nature curriculum, supported staff in implementation of curriculum and camper management.

TFA Summer Institute Faculty Advisor | East Central High School, Tulsa Public Schools | Summer 2015

Certificate in School Management and Leadership | Harvard University | October 2018- January 2019

Licensure

Classroom Teacher | Earth and Space Science (7-12), Biology and General Science (7-12)
Environmental Education (K-12), Middle School Science (5-8), Physical Science (7-12)
School Leadership | Secondary Principal (6-12)

Professional Affiliations

American Educational Research Association (AERA), 2019- Present
National Association of Research in Science Teaching (NARST), 2020- Present
National Science Teachers Association (NSTA), 2012- Present
Association for Science Teacher Education (ASTE), 2020-Present
Science Educators for Equity, Diversity, and Social Justice (SEEDS), 2021- Present
American Society for Engineering Education (2021- Present)
Leadership for Educational Equity (LEE), 2013- Present
Reality Revolve, 2019-Present

Peer Reviewer

American Education Research Association- The Journal of Educational Research
National Association of Research in Science Teaching
Science Educators for Equity, Diversity, and Social Justice
Association for Science Teacher Education

Related Experience

Executive/Research Committee Chair | Reach Out: Honors Program Literacy and Leadership Initiative

- Shippensburg, PA/ Pathways of Learning School, Dominican Republic (2010-2013)
- Wrote environmental curriculum and presented professional development for teachers and school leaders.
- Assisted in researching, editing, and publishing five additional teachers' manuals.

Undergraduate Student Researcher | Shippensburg University Honors Program | 2010-2013

“Overcoming the Challenges of Integrating Honors and Education Majors” | NCHC, Boston , MA (2012)

“The Big Easy: Manipulating Mother Nature Comes with a Price” | NCHC, Phoenix, AZ (2011)

Editor of *The Honors Chronicle*, 3rd place National Collegiate Honors Council Conference | Boston, MA (2012)