

DANIELLE J. MALONE (GEORGE)

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EDUCATION

Washington State University, Richland, WA

Ph.D., Teaching and Learning, Science Education, May 2024

Dissertation: Uncovering Student Negotiations in a Secondary Science Classroom: A Structure-Agency Perspective

Chair: Judith Morrison, Ph.D.

Committee Members: Jonah Firestone, Ph.D. and Sarah Newcomer, Ph.D.

Mississippi State University, Mississippi State, MS

M.S., Secondary Education (Science), 2017

Advisor: Ryan Walker, Ph.D.

University of Mississippi, University, MS

B.A.Ed., Science Education (Chemistry), 2015

Advisor: William Sumrall, Ph.D.

ACADEMIC APPOINTMENTS

Visiting Assistant Professor, Fall 2024 – Present

Purdue University, West Lafayette, IN

Curriculum and Instruction, Secondary Science Education

Adjunct Faculty, Summer 2024

Washington State University Tri-Cities, Richland, WA

MIT 506: Integrating Technology into Classroom Teaching

PROFESSIONAL EXPERIENCE

Field Supervisor, Fall 2023 – Spring 2024

Washington State University, Richland, WA

Pre-Service Teacher Preparation Programs

Under Supervision of John Mancinelli, Ph.D.

Graduate Research Assistant, Fall 2020 – Spring 2024

Washington State University, Richland, WA

Socio-Environmental Science Investigations: Exploring Alternative New Directions (SESI-ExpAND)
– NSF Funded

Under Supervision of Judith Morrison, Ph.D.

Assisted in Elementary Science Methods, Fall 2023

Washington State University, Richland, WA
TCH_LRN 371: Teaching Elementary Science
Under Supervision of Lindsay Lightner, Ph.D.

Instructor of Record, Summer 2023

Graduate Teaching Assistant
Washington State University, Richland, WA
MIT 506: Integrating Technology into Classroom Teaching

Graduate Research Assistant, Fall 2019 – Spring 2020

Washington State University, Richland, WA
Under Supervision of Annick Rougee, Ph.D.

Graduate Clinical Researcher, Fall 2017 – Spring 2020

Washington State University, Richland, WA
Computer Science Teacher Education Project I, II, and III – OSPI Funded
Under Supervision of Judith Morrison, Ph.D.

Assisted in Elementary Science Methods, Spring 2021

Professor: Sarah Fick, PhD
Washington State University, Pullman, WA

Instructor of Record, Spring 2020

Graduate Teaching Assistant
Washington State University, Richland, WA
TCH_LRN 445 – Technology in Elementary Education

RESEARCH INTEREST

My research interests center on student agency within the science classroom. I am particularly drawn to uncovering how students exercise agency to navigate and shape their learning experiences. An aspect of my research focuses on understanding how students' expressed agency influences the development of their science identity. An additional aspect of my interest is on the transformative impact of agency on students' attitudes, beliefs, and self-conceptions in science education. By examining how agency contributes to constructing science identities, I seek to contribute to the broader conversation on fostering positive and enduring connections between students and science.

PUBLICATIONS

- Malone, D.J.**, Firestone, J.B., Morrison, J.A., Newcomer, S.N., & Lightner, L.K. (2024). The Whole World in Your Hands: Explorations in Sustainability Education Using Geospatial Tools. *Science Activities: Projects and Curriculum Ideas in STEM Education*.
- Hammond, T., Brown, K., Alexander, C., Weinburgh, M., Popejoy, K., Bodzin, A., Morrison, J., **Malone, D.**, Firestone, J., Lightner, L., & Leeson, D. (2024). Off the Bench: Three Case Studies of Geographic Information System (GIS) Integration in High School Chemistry Instruction. *Innovations in Science Teacher Education*.
- Morrison, J. A., **Malone, D.J.**, & Sorensen Petersen, S. (2023). Trash is a Problem! Building Students' Connection to Their School Community. *Journal of Special Education Technology*.
<https://doi.org/10.1177/01626434231165456>
- George, D. J.**, & Hammer, N. I. (2014). Studying the Binomial Distribution Using LabVIEW. *Journal of Chemical Education*, 92(2), 389-394.

BOOK CHAPTERS

- Popejoy, K., Hammond, T., **Malone, D.**, Morrison, J., Firestone, J., Bodzin, A. M., Leeson, D., Brown, K. A., Alexander, C., & Weinburgh, M. (2023). Integrating ArcGIS Digital Technologies for Learning: Three Case Studies from University Design Partnerships with Teachers. In S. Asim, J. Ellis, D. Slykhuis, & J. Trumble (Eds.), *Theoretical and Practical Teaching Strategies for K-12 Science Education in the Digital Age* (pp. 98-115). IGI Global. <https://doi.org/10.4018/978-1-6684-5585-2.ch006>

CONFERENCE PRESENTATIONS

- Hammond, T.C., Popejoy, K.L., Bodzin, A.M., Morrison, J.A., Brown, K.A., Weinburgh, M.H., Firestone, J.B., Alexander, R.C., **Malone, D.J.**, Leeson, D.M. (2024, April). Advancing Teachers' Geospatial TPACK (Technological Pedagogical Content Knowledge) via an Integrated Professional and Curriculum Development Program: A Multiyear Study. Poster Presentation at the annual meeting of the American Educational Research Association (AERA), Philadelphia, PA
- Firestone, J.B., **Malone, D.J.**, Morrison, J., Newcomer, S., & Lightner, L. (2024, April). Using ArcGIS Online in an Environmental High School Science Classroom. Poster Presentation for the National Association for Research in Science Teaching, NARST 2023 annual conference. Denver, CO, United States.
- Malone, D.J.** & Morrison, J. (2024, April). Student Agency in Science Education: Navigating Structures for Inclusivity and Empowerment. Paper Presentation for the National Association for Research in Science Teaching, NARST 2023 annual conference. Denver, CO, United States.
- Pearcy, M., **Malone, D.J.**, & Wanty-Larson, R. (2024, April). Examining the Alignment of Elementary Science Specialist and Principal Beliefs about Teaching and Learning Science. Paper Presentation for the National Association for Research in Science Teaching, NARST 2023 annual conference. Denver, CO, United States.
- Malone, D.J.** & Morrison, J. (2024, January). Exploring the Interplay of Structure and Agency: Uncovering Student Negotiations in the Science Classroom. Paper presentation at the Association for Science Teacher Education, ASTE 2024 annual conference. New Orleans, LA, United States.

- Pearcy, M., **Malone, D.J.**, & Wanty-Larson, R. (2024, January). Elementary Science Specialists' Beliefs about Teaching and Learning Science. Paper presentation at the Association for Science Teacher Education, ASTE 2024 annual conference. New Orleans, LA, United States.
- Firestone, J., **Malone, D.J.**, Newcomer, S., Morrison, J., & Lightner, L. (2024, January). Using ArcGIS Online to Investigate the UN's Sustainable Development Goals (SDGs) in an Environmental Science Classroom. Paper presented at the Association for Science Teacher Education, ASTE 2024 annual conference. New Orleans, LA, United States.
- Morrison, J., **Malone, D.J.**, Firestone, J., & Lightner, L. (2024, January). Using Geographic Information Systems (GIS) in high school chemistry: Three case studies of socio-environmental science instruction. Paper presentation at the Association for Science Teacher Education, ASTE 2024 annual conference. New Orleans, LA, United States.
- Firestone, J. B., **Malone, D.J.**, Newcomer, S. N., Morrison, J. A., Lightner, L. (2023, October). *Sustainability Education through ArcGIS: Learn Globally Teach Locally*. Paper presented at the 2023 Annual Meeting of the Northern Rocky Mountain Education Research Association, Omaha, NE, United States.
- Malone, D.J.**, & Carr, T. (2023, July). Exploring the UN's Sustainable Development Goals (SDGs) Using ArcGIS Online. Environmental Systems Research Institute (Esri) 2023 Education Summit. San Diego, CA, United States.
- Helland, A. & **Malone, D.J.** (2023, July). Mapping the Urban Heat Island Effect on School Grounds Across Three Seasons. Environmental Systems Research Institute (Esri) 2023 Education Summit. San Diego, CA, United States.
- Malone, D.J.**, Popejoy, K., Weinburgh, M., Brown, K., Firestone, J., Bodzin, A., & Hammond, T. (2023, April). *Using a Teacher Learning Progression of Instructional Skills to Examine Geospatial Curriculum Adoption*. Roundtable presented at the National Association for Research in Science Teaching, NARST 2023 annual conference. Chicago, IL, United States.
- Popejoy, K., Morrison, J., Weinburgh, M., Brown, K., **Malone, D.J.**, Bodzin, A., Firestone, J., & Leeson, D. (2023, January). *Socio-Environmental Science Investigation to Promote Geospatial Thinking: Integrating ArcGIS Digital Technologies for Learning*. Themed paper set presented at the Association for Science Teacher Education, ASTE 2023 annual conference. Salt Lake City, UT, United States.
- Malone, D.**, Morrison, J., Firestone, J., Lightner, L., Newcomer, S., & Feltes, S. (2023, January). *Teaching with GIS: Building Teachers' Geospatial Skills and Knowledge for Integrated Instruction*. Paper presented at the Association for Science Teacher Education, ASTE 2023 annual conference. Salt Lake City, UT, United States.
- Lightner, L. K., Morrison, J. A., **Malone, D. J.**, & Firestone, J. B. (2023, January). *High school teachers' implementations of science-based geospatial reasoning projects: Practices, challenges, and possibilities*. Roundtable paper to be presented at the Association for Science Teacher Education, ASTE 2023 annual conference. Salt Lake City, UT, United States.
- Petersen, S., & **Malone, D.J.** (2022, July). Trash is a Problem: Using GIS with High Schools Life Skills Students. Environmental Systems Research Institute (Esri) 2022 Education Summit. San Diego, CA, United States.
- Malone, D.J.**, & Macduff, T. (2022, July). Integrating Science, Physical Education, and Community. Environmental Systems Research Institute (Esri) 2022 Education Summit. San Diego, CA.

- Malone, D.J.**, Saba Fisher, K., Wanty Larson, R., Heikila, T., Slavitt, D. (2022, April). *Exploring the Relationships between Identity and Discourse in K-12 Mathematics and Science Classrooms*. Round table session presented at American Education Research Association, AERA 2022 conference, San Diego, CA, United States.
- Malone, D.J.**, Feltes, S., Morrison, J., & Firestone, J.B. (2022, March). *Using Technology in the Classroom: Building Teachers' Self-Efficacy*. Poster presented at Washington State University Annual Showcase. Pullman, WA, United States.
- Heikila, T., Slavitt, D., **Malone, D.J.**, Fisher, K., & Larson, R. (2022, February). *The relationship between student identity and discourse in K-12 mathematics classrooms*. Paper session presented at the Association of Mathematics Teacher Educators, AMTE 2022 conference, Henderson, NV, United States.
- Malone, D.J.**, Morrison, J., Firestone, J., Newcomer, S., Lightner, L., & Feltes, S. (2022, January). *Teaching with Technology: Building Confidence*. Paper presentation. Association for Science Teacher Education (ASTE) conference, Greenville, SC, United States.
- Morrison, J., Lightner, L., **Malone, D.**, Firestone, J., & Newcomer, S. (2022, January). Designing Virtual Professional Development to Motivate Teachers' Implementation of ArcGIS. Paper presented at the 2022 International Conference of the Association of Science Teacher Education (ASTE), Greenville, SC, United States.
- Firestone, J., Leeson, D., **Malone, D.J.**, & Popejoy, K. (2021, June) *Advancing teachers' geospatial TPACK in fully online environments*. Poster presentation at the International Society for Technology in Education (ISTE) virtual conference.
- Leeson, D., **Malone, D.J.**, Brown, K., Hammond, T., & Popejoy, K. (2020, November). *Putting it on the Map: Building Authentic Local Geospatial Inquiries with ArcGIS Online*. Presented as a Workshop at the Innovate Learning 2020 Summit, online.
- Morrison, J., Lightner, L., **Malone, D.J.**, Firestone, J., & Newcomer, S. (2021, March). *Planning and Connecting with Partner Teachers in Virtual Environments: A Research and Practices Partnership in Times of COVID19*. Roundtable session presented virtually at the International Consortium for Research in Science & Mathematics Education.
- Lightner, L. K., **Malone, D. J.**, Morrison, J. A., Firestone, J. B., & Newcomer, S. N. (2020, December). *Socio-environmental science investigations: Developing geospatial thinking and research-practice partnerships in the age of COVID-19*. Presentation given at the Northwest ASTE 2020 unConference.
- Leeson, D., **Malone, D.J.**, Brown, K., Hammond, T., & Popejoy, K. (2020, November) Putting it on the map: Building authentic geospatial inquiries with ArcGIS Online. Presented at the Innovate Learning 2020 Summit.
- Malone, D.J.**, Morrison, J., & Firestone, J. (2020, January). Professional Development for Supporting K-12 Teachers on Computing and Computational Thinking. Poster session presented at the international conference of Association for Science Teacher Education, San Antonio, TX, United States.
- Malone, D.J.**, Morrison, J., Firestone, J. (2019, October). Professional Development for Supporting K-12 Teachers in Computing and Computational Thinking. Poster session presented at the Washington State University Education Summit, Richland, WA, United States.
- Morrison, J., Firestone, J., & **Malone, D.J.** (2019, January). K-12 Teachers' Implementation of Computing and Computational Thinking. Small group roundtable presented at the international conference of Association for Science Teacher Education, Savannah, GA, United States.

PROFESSIONAL DEVELOPMENT/WORKSHOP PROVIDED

Malone, D.J. & Johnson, R. (2023, October). From Maps to Insights: ArcGIS Integration in K-12 Classrooms. Washington State University Tri-Cities Education Summit. Richland, WA, United States.

Malone, D.J. (2023, June). Sustainability: The Environment and You. Washington State University, Tri-Cities. PD for in-service teachers in preparation for the annual STEM Camps. Richland, WA, United States.

Malone, D.J. & Helland, A. (2022, October). Using ArcGIS in the K-12 Classroom. Washington State University Tri-Cities Education Summit. Richland, WA, United States.

Malone, D.J. (2022, June). The Environment and You. Washington State University, Tri-Cities. PD for in-service teachers in preparation for the annual STEM Camps. Richland, WA, United States.

Malone, D.J. & MacDuff, T. (2021, October). ArcGIS in the Classroom. Washington State University Tri-Cities Education Summit. Richland, WA, United States.

INVITED TALKS

Malone, D.J. & Saba Fisher, K. (2023, October). Organizing Academic Literature. Presenter for Washington State University, Mathematics and Science Education Doctoral Seminar.

Morrison, J., Firestone, J., & **Malone, D.J.** (2018, March). Computer Science Teacher Education Program (CSTEP). Presenter for Washington State University, Mathematics and Science Education Doctoral Seminar.

FUNDING

Grant Writing

Firestone, J.B., Morrison, J., Feltes, S., & **Malone, D.J.** (2020). Coding in Alice Virtual Reality Environments (CAVE). Office of Superintendent of Public Instruction (OSPI). \$50,000 (not funded).

Graduate Assistant on the following Grants

Morrison, J., Firestone, J.B. (2020-2024) Socio-Environmental Science Investigations: Exploring Alternative New Directions, SESI-ExpAND. National Science Foundation (NSF).

Firestone, J.B. & Morrison, J. (2019) Computer Science Teacher Education Project III (CSTEP III). Office of the Superintendent of Public Instruction (OSPI). \$50,000 plus \$30,000 matching funds from Pacific Northwest National Labs (PNNL) and \$20,000 matching gift from Battelle (funded).

Firestone, J.B. & Morrison, J. (2018) Computer Science Teacher Education Project II (CSTEP II). Office of the Superintendent of Public Instruction (OSPI). \$50,000 plus \$50,000 matching funds from Pacific Northwest National Labs (PNNL) (funded).

Firestone, J.B. & Morrison, J. (2017) Computer Science Teacher Education Project I (CSTEP I). Office of the Superintendent of Public Instruction (OSPI). \$49,607 plus \$49,607 matching funds from Pacific Northwest National Labs (PNNL) (funded).

PROFESSIONAL SERVICE

National Association for Research in Science Teaching (NARST)

Publications Advisory Committee (PAC)

Member, Spring 2024 – Present

Association of Science Teacher Education (ASTE)

National Science Teachers Association (NSTA) Partnership Committee

Member, Spring 2024 - Present

PROPOSAL/ARTICLE REVIEW

National Association for Research in Science Teaching (NARST), 2023

Cultural, Social, and Gender Issues

Association of Science Teacher Education (ASTE), 2023

Equity and Diversity

American Educational Research Association (AERA), 2023

Sociology of Education

Learning and Instruction – Science

K-12 TEACHING EXPERIENCE

Secondary Science Teacher, 2017-2019

Grandview School District

Grandview High School, Grandview, WA

Chemistry Educator, AP Chemistry Educator

Secondary Science Teacher, 2015-2017

Louisville Municipal School District

Louisville High School, Louisville, MS

Chemistry Educator

AWARDS

Karen DePauw Leadership Award, Nominated 2023

Richard R. & Constance M. Albrecht Scholarship, Awarded \$1500 in 2023

Washington State University, Tri-Cities Travel Grant. Awarded \$1000 in 2022

University of Mississippi, Science Education Award, 2015

PROFESSIONAL ORGANIZATIONS

American Education Research Association, AERA

Association for Science Teacher Education, ASTE

National Association for Research in Science Teaching, NARST

National Science Teachers Association, NSTA

School Science and Mathematics Association, SSMA