

**Matthew C. Wilsey**  
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## ACADEMIC APPOINTMENTS

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**Assistant Professor of the Practice** 2023-  
Institute for Educational Initiatives, University of Notre Dame

## EDUCATION

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**Ph.D.** Curriculum Studies and Teacher Education – Science Education 2023  
Stanford University, Stanford, CA  
Dissertation Committee: Dr. Bryan Brown, Dr. Hilda Borko, Dr. Victor Lee,  
Dr. Denise Pope, and Dr. Daniel McFarland

**M.Ed.** University of Notre Dame, Notre Dame, IN 2012  
Secondary Science Certification

**B.S.** Biological Sciences 2010  
Supplemental Major, German  
University of Notre Dame, Notre Dame, IN

## PUBLICATIONS

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\*Authors contributed equally

### Peer-Reviewed Journal Articles

- Kloser, M., Borko, H., **Wilsey, M.**, & Rafanelli, S. (2022). Leveraging portfolios in professional development for middle school science teachers' assessment and data-use practice. *Science Education, 106*(4), 924-955.
- Brown, B. A., Boda, P. A., Ribay, K., **Wilsey, M.** & Pérez, G. (2021). A technological bridge to equity: How VR designed through culturally relevant principles impact students' appreciation of science. *Learning, Media and Technology, 46*(4), 546-584.
- Wilsey, M.**, Kloser, M., Borko, H., & Rafanelli, S. (2020). Middle school science teachers' conceptions of assessment practice throughout a year-long professional development experience. *Educational Assessment, 25*(2), 136-158.
- Brown, B. A., Pérez, G., Ribay, K., Boda, P. A., & **Wilsey, M.** (2020). Teaching culturally relevant science in virtual reality: "When a problem comes, you can solve it with science". *Journal of Science Teacher Education, 32*(1), 7-38.

- Brown, B. A., Ribay, K., Pérez, G., Boda, P. A., & **Wilsey, M.** (2020). A virtual bridge to cultural access: Culturally relevant virtual reality and its impact on science students. *International Journal of Technology in Education and Science*, 4(2), 86-97.
- Kloser, M., **Wilsey, M.**, Madkins, T., & Windschitl, M. (2019). Connecting the dots: Secondary science teacher candidates' uptake of the core practice of facilitating sensemaking discussions from teacher education experiences. *Teaching and Teacher Education*, 80, 115-127.
- Kloser, M., **Wilsey, M.**, Twohy, K. E., Immonen, A. D., & Navotas, A. C. (2018). "We do STEM": Unsettled conceptions of STEM education in middle school STEM classrooms. *School Science and Mathematics*, 118(8), 335-347.
- Kloser, M., **Wilsey, M.**, Hopkins, D., Dallavis, J. W., Lavin, E., & Comuniello, M. (2017). Dual identities: Organizational negotiation in STEM-focused Catholic schools. *Cultural Studies in Science Education*, 13(2), 549-579.
- Wilsey, M.** and Kloser, M.\* (2015). No blue ribbon: Reforming science fairs in middle and high school science education. *The Science Teacher*, 82(8) 53-59.

### Book Chapters

- Rafanelli, S., Borko, H., Kloser, M., & **Wilsey, M.** (2018). From focusing on grades to student thinking: A case study of change in assessment practice. In Fives, H. and Barnes, N. (Eds) *Cases of Teachers' Data Use*. London: Routledge.

### Editor Reviewed

- Wilsey, M.** and Kloser, M. (2018). Building shared understanding about what it means to do STEM in middle school classrooms. Research to Practice Companion Piece for "We do STEM": Unsettled conceptions of STEM education in middle school STEM classrooms. *School Science and Mathematics*.

### Manuscripts in Preparation and Review

- Wilsey, M.**, Brown, B., & Pimentel, D. (revise & resubmit) Assessment for learning: An exploration into how formative assessments can be designed for elementary student science learning and sensemaking. Target Journal: *Journal of Research in Science Teaching*
- Delhaye, C., **Wilsey, M.**, Reigh, E., Borko, H., & Osborne, J. (in review). Supporting teachers in engaging students in argumentation: Insights from a practice-based professional learning model. Target Journal: *Journal of Science Teacher Education*.
- Wilsey, M.** (in preparation). "As a new teacher, your brain never turns off": Beginning secondary science teachers' perceptions of what influences their instructional practice to and through teacher education. Target Journal: *Teaching and Teacher Education*.

Borko, H., **Wilsey, M.**, & Weiss, J. (in preparation). The layered evolution of the roles, goals, and responsibilities in a longitudinal research-practice partnership. Target Journal: *American Educational Research Journal*.

**Wilsey, M.**, Weiss, J., & Borko, H. (in preparation). “She’s sort of in charge, but didn’t feel like she was”: Supporting research-practice partnerships with a multi-level extension to the Learning at the Boundaries of Research and Practice framework. Target Journal: *Educational Researcher*.

Borko, H., Rafanelli, S., Kloser, M., & **Wilsey, M.** (in preparation). Changes in assessment practice: A comparative case study of two schools. Target Journal: *Journal of Science Teacher Education*.

## RESEARCH EXPERIENCE

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### Principal Investigator

**Generative Formative Assessment** 2017 – 2018  
 Graduate Advisor: Bryan Brown  
 Sponsor: Technology for Equity in Learning Opportunities, Stanford University, \$7,500

### Research Assistant

**Improving Practice Together** 2018 – Present  
 PI, Hilda Borko, Stanford University  
 PI, Emily Weiss, Lawrence Hall of Science  
 PI, Lori Paolinetti, Santa Clara Unified School District  
 Co-PI, Jonathan Osborne, Stanford University  
 Co-PI, Craig Strang, Lawrence Hall of Science  
 Co-PI, Kathie Kanaval, Santa Clara Unified School District  
 Sponsor: National Science Foundation

**The Effects of Long-Term Professional Development on Core Teacher Practice, STEM Integration, and Leadership** 2016 – Present  
 PI, Matthew Kloser, University of Notre Dame  
 Sponsors: Trustey Family, Sweeney Family, Innovate Foundation

**Culturally Relevant Virtually Reality Science Learning** 2017 – 2022  
 PI, Bryan Brown, Stanford University  
 Sponsor: TELOS, MediaX, UPS

**Measuring Science Instruction Using Teacher e-Portfolios** 2014 – 2017  
 PI, Felipe Martinez, UCLA  
 Co-PI, Brian Stecher, RAND Corporation  
 Co-PI, Matthew Kloser, University of Notre Dame  
 Sponsor: National Science Foundation

**Teachers’ Use of Data for Instructional Decisions** 2014 – 201

PI, Matthew Kloser, University of Notre Dame  
 Co-PI, Hilda Borko, Stanford University  
 Sponsor: Spencer Foundation

### **STEM School Transformations**

2014 – 2016

PI, Matthew Kloser, University of Notre Dame  
 Sponsor: Institute for Educational Initiatives, University of Notre Dame

## **TEACHING EXPERIENCE**

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### **University Teaching (Instructor of Record)**

Clinical Seminar in Teaching, EDU 65930 (Graduate Level) 2023 – Present  
 ACE Program, University of Notre Dame, Notre Dame, IN

Capstone Seminar in Teaching, EDU 65935 (Graduate Level) 2023 – Present  
 ACE Program, University of Notre Dame, Notre Dame, IN

Supervised Teaching, EDU 65950 (Graduate Level) 2023 – Present  
 ACE Program, University of Notre Dame, Notre Dame, IN

Assessment in Science Education, EDU 60795 (Graduate Level) 2017 – Present  
 ACE Program, University of Notre Dame, Notre Dame, IN

Curriculum & Instruction in Science, EDUC 267C (Graduate Level) 2021; 2023  
 STEP Program, Stanford University, Stanford, CA

Science Teaching Methods II, EDU 60785 (Graduate Level) 2016 – 2018; 2020; 2022  
 ACE Program, University of Notre Dame, Notre Dame, IN

### **Teaching Assistantships**

Curriculum & Instruction in Science, EDUC 267B (Graduate Level) 2020; 2022  
 STEP Program, Stanford University, Stanford, CA

Curriculum & Instruction in Science, EDUC 267A (Graduate Level) 2020; 2022  
 STEP Program, Stanford University, Stanford, CA

Elective in Curriculum & Instruction in Science, EDUC 267D (Graduate Level) 2019 – 2020  
 STEP Program, Stanford University, Stanford, CA

Assessment in Science Education, EDU 60795 (Graduate Level) 2014 – 2017  
 ACE Program, University of Notre Dame, Notre Dame, IN

Policy, Values, and Practice in Science Education, ESS 30632 2015, 2017  
 University of Notre Dame, Notre Dame, IN

Senior Research Seminar, ESS 43640 2014 – 2016  
University of Notre Dame, Notre Dame, IN

Informal Learning Environments, ESS 20208 2016  
University of Notre Dame, Notre Dame, IN

Science Teaching Methods I, EDU 60685 (Graduate Level) 2015  
ACE Program, University of Notre Dame, Notre Dame, IN

Science Teaching Methods II, EDU 60785 (Graduate Level) 2012 – 2013  
ACE Program, University of Notre Dame, Notre Dame, IN

### **Mentoring & Supervision Teaching Experience**

Field Supervisor for ACE Teaching Fellows 2023 – Present  
ACE Program, University of Notre Dame, Notre Dame, IN

Field Supervisor for Secondary Science Teachers 2019-2020  
STEP Program, Stanford University, Stanford, CA

Summer Practicum Mentor Teacher 2012 – 2013  
ACE Program, University of Notre Dame, Notre Dame, IN

### **Secondary Teaching Experience**

Physics, Chemistry, Forensic Science 2012 – 2014  
St. Rita of Cascia High School, Chicago, IL

Life Science, Earth Science, Physical Science 2010 – 2012  
Guadalupe Regional Middle School, Brownsville, TX

### **Professional Development Experience**

Hollyhock Fellowship Program 2020 – 2022  
Center to Support Excellence in Teaching (CSET)  
Stanford University, Stanford, CA  
- Secondary science instructional coach and science professional learning facilitator

Trustey Family STEM Teaching Fellows 2015 – 2020  
Notre Dame Center for STEM Education  
University of Notre Dame, Notre Dame, IN  
- Curriculum developer, school change coach, and professional learning facilitator

Collaboration to Refine and Enhance Science Teaching (CREST) 2014 – 2017  
University of Notre Dame, Notre Dame, IN  
- Curriculum co-developer and science professional learning facilitator

## PROFESSIONAL EXPERIENCE

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### Associate Director

2014 – 2017

Notre Dame Center for STEM Education

- Research assistant, national summer STEM camp coordinator, website and social media manager

## CONFERENCE PRESENTATIONS

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**Wilsey, M.** (2023). *What matters?: Beginning secondary science teachers' perceptions of what influences their instructional practice.* A Paper for National Association for Research in Science Teaching. Chicago, IL.

**Wilsey, M.,** Weiss, J., and Borko, H. (2023) *Critical Infrastructure?: An Investigation into the Evolution of a Research-Practice Partnership Across Time and Boundaries.* A Paper for the American Educational Research Association. Chicago, IL.

**Wilsey, M.,** Brown, B., & Pimentel, D. (2022). *Explaining as Learning: Sense-Making Through Generative Formative Assessment in Science.* A Paper for the American Educational Research Association. San Deigo, CA.

**Wilsey, M.,** Delhaye, C., Osborne, J., Borko, H., Reigh, E. (2021). *An investigation of teacher professional learning that resulted in significant shifts in practice.* A Paper for the Annual Meeting of the European Association for Research on Learning and Instruction. Gothenburg, Sweden.

Delhaye, C., Borko, H., **Wilsey, M.,** Reigh, E., Osborne, J. (2021). *Building Teacher Leadership for Equitably Accessible Distance Science Learning in a School District during COVID-19.* A Paper for the American Educational Research Association. Orlando, FL. [Symposium session]

**Wilsey, M.,** Delhaye, C., Reigh, E., Borko, H., Osborne, J. (2021). *Changes in elementary teachers' perceptions and facilitation of argumentation throughout year-long participation in professional learning.* A Paper for the American Association of Educational Research. Orlando, FL.

Delhaye, C., **Wilsey, M.,** Borko, H., Reigh, E. (2021). *Mise en œuvre d'un dispositif d'apprentissage professionnel pour accompagner des enseignants à soutenir l'argumentation scientifique d'élèves de primaire.* Colloque du Centre de recherche interuniversitaire sur la formation et la profession enseignante, Montréal, Québec, Canada. [Symposium session].

**Wilsey, M.,** Delhaye, C., Reigh, E., Borko, H., Osborne, J. (2020). *Changes in Elementary Science Teachers' Classroom Argumentation Practices After Participation in a Professional Development Program.* A Paper for American Educational Research Association. San Francisco, CA. (Conference cancelled)

**Wilsey, M. &** Kloser, M. (2020) *Changes in middle school STEM teachers' drawn mental models of STEM education over time.* A Paper for National Association for Research in Science Teaching. Portland, OR. (Conference cancelled)

- Kloser, M. & **Wilsey, M.** (2020) *Middle grade STEM teachers' conceptions and prioritization of core instructional practices over time*. A Paper for National Association for Research in Science Teaching. Portland, OR. (Conference cancelled)
- Delhaye, C., **Wilsey, M.**, Reigh, E., Borko, H., & Osborne, J. (2020). *Improving guidance for classroom argumentation in science inquiry*. A Paper for National Association for Research in Science Teaching. Portland, OR. [Symposium session] (Conference cancelled)
- Pérez, G., Brown, B., Boda, PA., Ribay, K., & **Wilsey, M.** (2019). *Finding meaning in science through CRP-VR: Critical understandings of science among diverse elementary students*. A Paper for the National Association for Research in Science Teaching. Baltimore, MD. [Symposium session]
- Wilsey, M.**, Boda, PA., Lemmi, C., Pérez, G., & Brown, B. (2019). *Designing and testing CRP-VR: A mixed-methods, quasi-experimental multiple trial study*. A Paper for the National Association for Research in Science Teaching. Baltimore, MD. [Symposium session]
- Kloser, M., **Wilsey, M.**, Borko, H., & Rafanelli, S. (2018). *Leveraging portfolios in professional development for middle school science teachers' assessment and data-use practice*. A Paper for the American Association of Educational Research. New York, NY.
- Kloser, M., **Wilsey, M.**, Madkins, T., Windschitl, M., Wells, A., Davis, E., & Carlson, J. (2018). *Connecting the dots: Secondary science teacher candidates' uptake of facilitating discussions from teacher education experiences*. A Paper for the Annual Meeting of the National Association of Research on Science Teaching. Atlanta, GA.
- Rafanelli, S., Borko, H., Kloser, M., & **Wilsey, M.** (2018). *Science teachers' changing assessment practices: Case studies of individual change through PD and professional collaboration*. A Paper for the Annual Meeting of the National Association of Research on Science Teaching. Atlanta, GA.
- Martinez, J. F., Kloser, M., Stecher, B., **Wilsey, M.**, Srinivasan, J., & Edelman, A. (2017). *Assessing and improving quality science instruction using an innovative tablet portfolio app*. A Paper for the Annual Meeting of the European Association for Research on Learning and Instruction. Tampere, Finland.
- Rafanelli, S., Borko, H., Kloser, M., & **Wilsey, M.** (2017). *From focusing on grades to exploring student thinking: A case study of change in assessment practice*. A Paper for the American Association of Educational Research. San Antonio, TX.
- Kloser, M., Gottlieb, J., **Wilsey, M.**, Svarovsky, G. N., Kirkland, P., & Puricelli, J. (2017). *Exploring the relationship among middle grade teacher's conceptions of STEM and equity*. A Paper for the Annual Meeting of the National Association of Research on Science Teaching. San Antonio, TX.
- Kloser, M., & **Wilsey, M.** (2017). *Common conception or confusion?: Tracking STEM teachers' initial conceptions of what counts as STEM education*. A Paper for the Indiana STEM Education Conference. West Lafayette, IN.

- Martinez, J. F., Riedell, K., Rocchio, R., Srinivasan, J., Kloser, M., **Wilsey, M.**, & Stecher, B. (2016). *Next generation tablet e-Portfolio tool for documenting and reflecting on instructional practice: Possibilities for teacher evaluation and development*. A Paper for the Annual Meeting of the European Association for Research on Learning and Instruction. Oslo, Norway.
- Kloser, M., **Wilsey, M.**, Weseli, D., Lavin, E., Comuniello, M., Dallavis, J. (2016). *Dual identities: Toward a framework for STEM-focused Catholic schools*. A Paper for the Annual Meeting of the National Association of Research for Science Teaching. Baltimore, MD.
- Kloser, M., Borko, H., **Wilsey, M.**, Rafanelli, S. (2016). *Science teachers' use of data for instructional decisions: Mental models of middle school science assessment practice*. A Paper for the Annual Meeting of the National Association of Research for Science Teaching. Baltimore, MD.
- Martinez, F. M., Kloser, M., Riedell, K., Srinivasan, J., Stecher, B., Rocchio, R., **Wilsey, M.**, Tangmunarunkit, H. (2016). *Tablet-based teacher e-Portfolio tool for documenting and reflecting on instruction aligned to the Next Generation Science Standards*. A Paper for the Annual Meeting of the American Educational Research Association. Washington D.C.
- Kloser, M., **Wilsey, M.** (2016). *Dual identities: Investigating the nature of STEM-focused Catholic schools*. A Paper for the Indiana STEM Education Conference. West Lafayette, IN.

## AWARDS

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|-------------|--|
| 2010 – 2012 | AmeriCorps National Service Program: Educational grant recipient and member of AmeriCorps Education Awards Program |
| 2010        | Delta Phi Alpha, German Honor Society<br>University of Notre Dame  |
| 2006 – 2010 | Donald F. and Edna G. Bishop Foundation Scholar  |

## PROFESSIONAL AND UNIVERSITY SERVICE

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| Conference Proposal Reviewer   |                |
| National Association for Research in Science Teaching                                      | 2021 – Present |
| American Educational Research Association  | 2021 – Present |
| <i>Ad Hoc</i> Manuscript Reviewer  |                |
| Journal of Pre-College Engineering Education Research (J-PEER)                             |                |
| Teaching and Teacher Education (TATE)  |                |
| Participant in Journal of Research in Science Teaching (JRST) Mentored Reviewer Initiative | 2019           |
| Stanford Graduate School of Education Doctoral Student Mentor                              | 2018 – 2022    |
| Stanford Graduate School of Education Guild, Social Chair                                  | 2019 – 2021    |



## **PROFESSIONAL ORGANIZATIONS**

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American Educational Research Association	2017 – Present
National Association for Research in Science Teaching	2015 – Present
National Science Teaching Association	2013; 2020 – Present