

Melissa L. Braaten

Associate Professor, STEM Education
 Associate Dean for Undergraduate and Teacher Education
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EDUCATION

University of Washington PhD, Curriculum & Instruction	Seattle, WA	2011
University of Tennessee MS, Education in Mathematics, Sciences, Research, & Technology (and teacher credential)	Knoxville, TN	1996
University of Tennessee BS, Microbiology (major); Spanish (minor); Education (minor)	Knoxville, TN	1995

FACULTY APPOINTMENTS

University of Colorado Boulder Associate Professor, School of Education	Boulder, CO	2022-present
University of Colorado Boulder Assistant Professor, School of Education	Boulder, CO	2016-2022
University of Wisconsin Madison Assistant Professor, Department of Curriculum & Instruction	Madison, WI	2011-2016

K-12 TEACHING EXPERIENCE

Rainier Scholars 5 th /6 th grade science teacher, curriculum & instruction coordinator	Seattle, WA	2006-2011
Federal Way Public Schools K-12 Science & Mathematics Curriculum Coordinator & Instructional Specialist; High School teacher at The Truman Center	Federal Way, WA	2003-2006
Alamo Heights Independent School District Alamo Heights High School, science teacher	San Antonio, TX	1996-2003

HONORS & AWARDS

2023	University of Colorado Boulder Best Should Teach
2020	Reviewer of the Year: <i>Journal of the Learning Sciences</i>
2018	American Library Assoc. Choice Outstanding Academic Title: <i>Ambitious Science Teaching</i>
2018	Outstanding Peer Reviewer: <i>American Educational Research Journal</i>
2017	Finalist, National Academy of Education/Spencer Foundation Post-Doctoral Fellowship
2017	Outstanding Peer Reviewer: <i>American Educational Research Journal</i>

- 2015 Fellow of the UW-Madison Teaching Academy
2015 UW-Madison School of Education Community Engaged Scholarship Award
2012 NARST Outstanding Doctoral Research Award
1996 U. of Tennessee, College of Education: Outstanding Graduate Student Award
1995 U. of Tennessee, Dept. of Microbiology: D. Frank Holtzman Award for Top Undergraduate

SCHOLARSHIP

Refereed journal articles (* indicates student co-author)

- Hinrichs-Kinney, L., Beisheim-Ryan, E., Butera, K., **Braaten, M.**, Holtrop, J., & Stevens-Lapsley, J. (2025). Systematic development of an implementation strategy to promote high-intensity rehabilitation uptake in skilled nursing facilities. *PM&R: The Journal of Injury, Function, and Rehabilitation*, 17, 118-131.
- Fine, C. & **Braaten, M.** (2025). Savviness of sixth graders: Student perspectives about translanguaging during science formative assessment. *Journal of Research in Science Teaching*, 62, 193-227.
- Braaten, M.** (2024). Not honors material: The high stakes of educational triage for science education. *American Journal of Education*, 130(4). 583-619.
- Braaten, M.**, Granados, E., & Bradford, C. (2022). Making sense through dissonance during preservice teacher preparation. *Teaching and Teacher Education*, 109, 1-13.
- Schwarz, C., **Braaten, M.**, Haverly, C.*, & de los Santos, E. X.* (2021). Using sense-making episodes to understand how elementary teachers' interactions expand, maintain, or shut down sense-making in science. *Cognition & Instruction*, 39 (2), 113-148.
- Haverly, C.*, Calabrese Barton, A., Schwarz, C., **Braaten, M.** (2020). "Making space": How two beginning teachers create opportunities for equitable sense-making in elementary science. *Journal of Teacher Education*, 71(1) 63-79.
- Braaten, M.** (2019). Persistence of the two worlds pitfall: Learning to teach within and across settings. *Science Education*, 103, 61-91.
- Windschitl, M., Thompson, J., **Braaten, M.**, & Stroupe, D. (2019). Sharing a vision, sharing practices: How communities of educators improve teaching. *Remedial and Special Education*, 40(6), 380-390.
- Bradford, C.* & **Braaten, M.** (2018). Teacher evaluation and the demoralization of teachers. *Teaching and Teacher Education*, 75, 49-59.
- Braaten, M.**, Bradford, C.*, Kirchgasser, K.*, & Barocas, S.* (2017). How data use for accountability undermines equitable science education. *Journal of Educational Administration*. 55(4), 427-446.

Braaten, M. & Sheth, M.* (2017). Tensions teaching science for equity: Lessons learned from the case of Ms. Dawson. *Science Education*. 101(1), 134-164.

Thompson, J., Hagenah, S., Kang, H., Stroupe, D., **Braaten, M.**, Colley, C., Windschitl, M., (2016). Rigor and responsiveness in classroom activity. *Teachers College Record*. 118(5), 1-58.

Thompson, J., Windschitl, M., & **Braaten, M.** (2013). Developing a theory of ambitious early-career teacher practice. *American Educational Research Journal*, 50(3), 574-615.

Windschitl, M., Thompson, J., **Braaten, M.**, Stroupe, D. (2012). Proposing a core set of instructional practices and tools for teachers of science. *Science Education*, 96, 878-903.

Braaten, M. & Windschitl, M. (2011). Working towards a stronger conceptualization of scientific explanation for science education. *Science Education*, 95, 639-669.

Windschitl, M. Thompson, J., & **Braaten, M.** (2011) Ambitious pedagogy by novice teachers? Who benefits from tool-supported collaborative inquiry into practice and why. *Teachers College Record*, 113(7), 1311-1360.

Windschitl, M., Thompson, J. & **Braaten, M.** (2008). How novice science teachers appropriate epistemic discourses around model-based inquiry for use in classrooms. *Cognition and Instruction*, 26(3), 310-378.

Windschitl, M., Thompson, J. & **Braaten, M.** (2008). Beyond the scientific method: Model-Based Inquiry as a new paradigm of preference for school science investigations. *Science Education*, 92, 941-967.

Refereed conference proceedings

Braaten, M., Hayden, R.*, & Roque, R. (2023) "They Are Whole People": Consequential Transitions for Pre-Service Teachers Participating in a Family Creative Computing Program. Proceedings of the International Conference of the Learning Sciences 2023. Montreal, Canada: International Society of the Learning Sciences.

Braaten, M., Schwarz, C., & Haverly, C. (2020). Supporting Teachers for Expansive Sense-Making in Elementary Science Classrooms. In Gresalfi, M. and Horn, I. S. (Eds.), *The Interdisciplinarity of the Learning Sciences*, 14th International Conference of the Learning Sciences (ICLS) 2020, Volume 4 (pp. 2281-2284). Nashville, Tennessee: International Society of the Learning Sciences.

Books

Windschitl, M., Thompson, J, & **Braaten, M.** (2018). *Ambitious Science Teaching*. Cambridge, MA: Harvard Educational Press.

Book chapters (indicates student co-author)*

Stillman, J. & **Braaten, M.** (2026). Chapter 7: Designing for Program Coherence and Productive Dissonance in Justice-Centered Undergraduate Elementary Teacher Preparation. In *Handbook of Research on Teacher Education*, E. Hollins (Ed.). Routledge.

- Tetu, E., Hayden, R., **Braaten, M.**, & Roque, R. (2026). Chapter 13: Pre-Service Teachers and Adult Caregivers Learning Alongside One Another: Reimagining Family-Teacher Relationships. In *Culturally Sustaining Pedagogies in Mathematics and Technology Education*, K.L. Terrell & D.S. Pimentel (Eds.), IGI Global. pp. 417-450.
- Braaten, M.** (2021). When the game is rigged from the start: Teaching science for epistemic justice in troubled times. In M. Winn & L.T. Winn (Eds.) *Transforming the Disciplines through Restorative Justice*. Cambridge, MA. Harvard Educational Press.
- Colley, C. & **Braaten, M.** (2020). Preparing elementary teachers to support science talk. In D. Stroupe, K. Hammerness, & S. McDonald (Eds.) *Preparing Science Teachers through Practice-Based Teacher Education*. Cambridge, MA: Harvard Educational Press.
- Windschitl, M., Thompson, J., **Braaten, M.**, & Stroupe, D. (2020). The role of core practices in science teacher preparation. In D. Stroupe, K. Hammerness, & S. McDonald (Eds.) *Preparing Science Teachers through Practice-Based Teacher Education*. Cambridge, MA: Harvard Educational Press.
- Braaten, M.**, Bradford, C.*, Barocas, S.*, & Kirchgasler, K.* (2018). Using Data Meaningfully to Teach for Understanding in Middle School Science. In Fives, H. & Barnes, N. (Eds.) *Cases of Teachers' Data Use*. New York: Routledge.
- Furtak, E.M., Thompson, J., Windschitl, M., & **Braaten, M.** (2012). Learning Progressions to Support Ambitious Teaching Practices. In Wenk-Gotwals, A. & Alonzo, A. (Eds.) *Learning Progressions in Science*. Sense Publishers.
- Windschitl, M., Thompson, J., **Braaten, M.**, Stroupe, D., Chew, C., & Wright, E. (2011). The Beginner's Repertoire: Proposing a Core Set of Instructional Practices for Teacher Preparation. In Saleh, I. & Khine, M. (Eds.) *Teaching Teachers: Approaches in Improving the Quality of Education*. Nova Science Publishers, Inc. (pp. 301-321).

Book reviews

- Braaten, M.** (2020). John L. Rudolph. *How We Teach Science: What's Changed, and Why It Matters*. Cambridge, MA: Harvard University Press, 2019. 320 pp. *History of Education Quarterly*, 60(2), 276-278.

Public scholarship/Practitioner-facing publications

- Braaten, M.** (Winter 2024). Classrooms for Climate Action: How kids and alumni educators are leading local climate-justice initiatives. *VOICES Magazine*, 14-15.
- Braaten, M.**, Boyd, T., & Bean, J. R. (2024). Hope for Local Waterways: Encouraging Civic Engagement for Climate Action and Resilience. *Science and Children*, 61(2), 36-42. <https://doi.org/10.1080/00368148.2024.2315674>

- Griffith, J. G., **Braaten, M.**, Dubick, A., & Gold, A. U. (2024). From Windy Day Stories to Wind Farms of the Future: Leveraging Student Resources to Make Sense of Phenomena with Data Puzzles. *Science Scope*, 47(2), 25–33. <https://doi.org/10.1080/08872376.2024.2314669>
- Braaten, M.** & Griffith, J. (2022). Data Puzzles: Making Sense with Science. <https://datapuzzles.org/>. Boulder, CO: University of Colorado Boulder.
- Braaten, M.**, Foster, D., Foster, J., Scipio, D., & Suárez, E. (2022). *How can we talk with young children about race and racism in the context of science learning?* STEM Teaching Tools Initiative, Institute for Science + Math Education. Seattle, WA: University of Washington.
- Braaten, M.**, Foster, D., Foster, J., Scipio, D., & Suárez, E. (2021). How can we confront and dismantle systemic racism through science learning? STEM Teaching Tools Initiative, Institute for Science + Math Education. Seattle, WA: University of Washington.
- Braaten, M.** (2021). Conducting an audit of your STEM curriculum, resources, and activities: How can I see racism, oppression, and anti-Blackness in curriculum and then act toward justice in STEM education? STEM Teaching Tools Initiative, Institute for Science + Math Education. Seattle, WA: University of Washington.
- Braaten, M.** (2021). How to have courageous conversations about race and racism with other teachers. STEM Teaching Tools Initiative, Institute for Science + Math Education. Seattle, WA: University of Washington.
- Fine, C. & **Braaten, M.** (2021). Expanding science sensemaking opportunities for emergent bilinguals. *School Library Connection*.
- MacDonald, R., Crowther, D., **Braaten, M.**, Binder, W., Chien, J., Dassler, T., Shelton, T., & Wilfrid, J. (2020). Design principles for engaging multilingual learners in three-dimensional science (WCER Working Paper No. 2020-1). University of Wisconsin–Madison, Wisconsin Center for Education Research.
- Braaten, M.** (2019). Ambitious science teaching. *School Library Connection*.
- Thompson, J., **Braaten, M.**, & Windschitl, M. with Sjoberg, B., Jones, M., & Martinez, K. (2009). Examining student work: Evidence-based learning for students and teachers. *The Science Teacher*. 76(8), 48-52.
- In preparation (* indicates student co-author)*
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- Braaten, M.**, Boyd, T., & Bean J.R. (in preparation). Building Collective Teacher Agency for Youth Civic Engagement for Climate Justice.
- Fine, C., Lee, S., & **Braaten, M.** (2026) Towards Dignity for Multilingual Learners in Science: A Framework to Examine Dignity-Conferring Classroom Interactions. Paper submitted to the International Conference of the Learning Sciences.

Invited presentations/panelist contributions

Braaten, M. (2023). Interrogating Educators' Working Conditions in the Era of Intersecting Crises. AERA Presidential Session at the annual meeting of the American Educational Research Association. Chicago, IL. April 2023.

Braaten, M. & Griffith, J. (2023). Data Puzzles and Ambitious Science Teaching: Making Sense with Science. American Geosciences Institute. March 2023.

Braaten, M. (2022). Twenty Years of Activity Theory in Teacher Education Research: Major Contributions and Future Perspectives. AERA Division K Teaching & Teacher Education Vice-Presidential Invited Session at the annual meeting of the American Educational Research Association. San Diego, CA. April 2022.

Braaten, M. (2021). Science educator preparation expert panel. Taking Stock of Science Standards Implementation: A Summit. Board of Science Education of the National Academies of Sciences, Engineering, & Medicine. October 14-15, 2021.

Conference presentations, refereed (* indicates student co-author)

2026

Griffin, K.* & **Braaten, M.** (2026). Between Words and Worlds: How Discourse Shapes a Trans Woman's Evolving Identity and Familial Experience. Paper presented at the Annual Meeting of the American Educational Research Association. Los Angeles, CA. April 2026.

2025

Braaten, M., Boyd, T., & Bean J.R. (2025). Collective Teacher Agency for Youth Civic Engagement for Climate Justice. Paper presented at the Annual Meeting of the American Educational Research Association. Denver, CO. April 2025.

Braaten, M., Tetu, E., Roque, R., & Hayden, R.* (2025). Consequential Transitions for Pre-Service Teachers Participating in a Family Creative Computing Program. Paper presented at the Annual Meeting of the American Educational Research Association. Denver, CO. April 2025.

2024

Braaten, M., Bean, J.R., & Boyd, T. (2024). How Community Volunteers Support Action-Oriented Climate Education in Elementary Classrooms. Paper presented at the Annual Meeting of the American Educational Research Association. Philadelphia, PA. April 2024.

Hayden, R.*, Tetu, E.*, Roque, R., **Braaten, M.,** Hadjiyannis, A.*, & Hall, A.* (2024). Supporting Preservice Teachers Affective Noticing: Emotions as Meaningful in an Informal and Intergenerational Computing Experience. Paper presented at the Annual Meeting of the American Educational Research Association. Philadelphia, PA. April 2024.

Fine, C. & **Braaten, M.** (2024). Enactment of Translanguaging Formative Assessment Designs and Consequences for Multilingual Learners' Science Sensemaking. Paper presented at the Annual conference of the National Association for Research on Science Teaching. Denver, CO. March 2024.

2023

Boyd, T., Bean, J., & **Braaten, M.** (2023). Integrating Climate Action Across the K-5 Curriculum: The ACT for Climate Toolkit. Paper presented at the Annual meeting of the American Geophysical Union. San Francisco. December 2023.

Braaten, M., Hayden, R. & Roque, R. (2023). "They Are Whole People": Consequential Transitions for Pre-Service Teachers Participating in a Family Creative Computing Program. Paper presented in the symposium: Expansive Lenses to Examine Interventions (of) Moving Across Contexts. International Conference of the Learning Sciences. Montreal. June 2023.

2022

Fine, C. & **Braaten, M.** (2022). Collective Sensemaking Around Translanguaging in Formative Assessment Co-design: A Catalyst for Science Teacher Agency. Paper presented in the Symposium: Equity in Elementary Science Teaching & Learning at the annual meeting of the American Educational Research Association. San Diego, CA. April 2022.

2020

Braaten, M., Fine, C.*, Getz, M, & Littich, H. (2020). Ambitious Science Teaching for Language-Rich Student-Centered Sensemaking. Concurrent session presented at the annual conference of WIDA. Denver, CO.

Braaten, M., Schwarz, C., & Haverly, C.* (2020). Challenges teachers and teacher educators face supporting expansive and transformative sense-making in elementary science classrooms. Paper presented at the International Conference for the Learning Sciences. Nashville, TN.

Schwarz, C., Haverly, C.*, & **Braaten, M.** (2020). Affordances and Constraints of using Sense-making Moments/Episodes for Fostering Equitable Disciplinary Responsiveness in Science Teaching. Paper presented at the annual conference of the National Association for Research in Science Teaching. Portland, Oregon. March 2020.

Braaten, M. & Fine, C*. (2020). How Transformational Teacher Leadership Drives Ambitious and Equitable Elementary Science. Paper presented at the annual conference of the National Association for Research in Science Teaching. Portland, Oregon. March 2020.

2019

Braaten, M., Schwarz, C., & Haverly, C*. (2019). How teaching supports equitable and transformative sense-making in science classrooms. Paper presented at the annual meeting of the American Educational Research Association. Toronto. April 2019.

Braaten, M., Schwarz, C., & Haverly, C*. (2019). Teaching to support equitable and transformative sense-making. Paper presented at the annual conference of the National Association for Research in Science Teaching. Baltimore, Maryland. April 2019.

2018

Braaten, M. (2018). Teachers leading the resistance: Remoralization of science teachers. Paper presented at Science at the Crossroads. September 2018. Alta, UT.

Haverly, C.*, Schwarz, C., & **Braaten, M.** (2018). Noticing and responding episodes: Accessing elementary teachers' responsiveness towards equitable sense-making. Paper presented at the annual conference of the National Association for Research in Science Teaching. Atlanta, GA.

2017

Braaten, M. (April 2017). Recontextualizing science practices across figured worlds of ambitious and status quo science teaching. Paper presented at the annual conference of the National Association for Research in Science Teaching. San Antonio, TX. April 2017.

Braaten, M., Berland, L., & Russ, R. (April 2017). Learning to notice students' contributions: Field experiences as opportunities for novice teacher learning. Paper presented at the annual meeting of the American Educational Research Association. San Antonio, TX. April 2017.

- Haverly, C.*, Schwarz, C., Calabrese Barton, A., & **Braaten, M.** (April 2017). Mentoring as a model to support beginning teachers' responsiveness to student sense-making. Paper presented at the annual meeting of the American Educational Research Association. San Antonio, TX. April 2017.
- Russ, R., Berland, L., & **Braaten, M.** (April 2017). Using everyday contexts to explore teacher knowledge of noticing. Paper presented at the annual meeting of the American Educational Research Association. San Antonio, TX. April 2017.
- Bradford, C.* & **Braaten, M.** (April 2017). What counts as quality teaching? Who decides? How data-centric reforms undervalue teacher sense-making. Paper presented at the annual meeting of the American Educational Research Association. San Antonio, TX. April 2017.

2016

- Bradford, C.* & **Braaten, M.** (April 2016). Being evaluated: Unintended consequences of teacher evaluation practices. Paper presented at the annual meeting of the American Educational Research Association. Washington, DC. April 2016.
- de los Santos, E. X.*, Schwarz, C., **Braaten, M.**, Calabrese Barton, A., & Haverly, C.* (April 2016). Unexpected moments: Beginning elementary teachers noticing and responding to their students' science ideas. Paper presented at the annual meeting of the American Educational Research Association. Washington, DC. April 2016.
- Haverly, C.*, Calabrese Barton, A., Schwarz, C., **Braaten, M.**, & de los Santos, E. X.* (April 2016). Unanticipated opportunities for student sense-making when beginning teachers stall for time in elementary science discussions. Paper presented at the annual meeting of the American Educational Research Association. Washington, DC. April 2016.
- Braaten, M.** (January 2016). Preparing the next generation of science teachers. Paper presented at the American Association of Physics Teachers Winter Meeting. New Orleans, LA. January 2016.
- Braaten, M.**, Berland, L., & Russ, R. (February 2016). Supporting responsive science teaching practices through pedagogical argumentation. Paper presented at the annual conference of the American Association of Colleges of Teacher Education. Las Vegas, NV. February 2016.

2015

- Braaten, M.**, Bradford, C.*, Barocas, S.*, & Kirchgasler, K.* (November 2015). Missed opportunities to learn: How data use for accountability undermines equitable science education. Paper presented at the annual conference of the University Council for Educational Administration. San Diego, CA. November 2015.
- Berland, L., Russ, R., & **Braaten, M.** (April 2015). Supporting responsive teaching practices through pedagogical argumentation. Paper presented at the annual conference of the National Association for Research in Science Teaching. Chicago, IL. April 2015.
- Braaten, M.** (April 2015). Developing, refining, and sustaining the next generation of responsive science teaching. Symposium presented at the annual conference of the National Association for Research in Science Teaching. Chicago, IL. April 2015.
- Braaten, M.**, Kirchgasler, K.*, Bradford, C.*, & Barocas, S.* (April 2015). Why science education should care about the educational data movement. Paper presented at the annual conference of the National Association for Research in Science Teaching. Chicago, IL. April 2015.
- Braaten, M.**, Barocas, S.*, Bradford, C.*, & Kirchgasler, K.* (April 2015). Cordoning off student ideas: Unintended consequences of policies-as-practiced in schools. Paper presented at

the annual meeting of the American Educational Research Association. Chicago, IL. April 2015.

Russ, R., Berland, L., **Braaten, M.** (April 2015). Seeing people as sense-makers: Exploring teacher attention to their students' science ideas. Paper presented at the annual meeting of the American Educational Research Association. Chicago, IL. April 2015.

MacDonald, R., **Braaten, M.** & Miller, E.* (March 2015). NGSS science and engineering practices: Combining science learning and language development for ELLs. Session presented at the annual conference of the National Science Teachers Association. Chicago, IL. March 2015.

2014

Braaten, M. & Sheth, M.* (2014). Preparing novices for ambitious science teaching: A Focus on equitable science pedagogy. Paper presented at the annual meeting of the American Educational Research Association, Philadelphia, PA.

Sheth, M.* & **Braaten, M.** (2014). Doing better: Illuminating teachers' multiple pathways to equitable science pedagogy. Paper presented at the annual meeting of the American Educational Research Association, Philadelphia, PA.

Braaten, M. (2014). Two-worlds problem exacerbated by local historical, social, and cultural contexts of schooling. Paper presented at the annual conference of the National Association for Research in Science Teaching, Pittsburgh, PA

2013

Braaten, M. (April 2013). Promises and limitations of video clubs for supporting ambitious science teaching. Paper presented at the annual conference of the National Association for Research in Science Teaching. Rio Mar, Puerto Rico.

Sheth, M.* & **Braaten, M.** (April 2013). A framework for analyzing equitable science teaching. Paper presented at the annual meeting of the American Educational Research Association, San Francisco, CA.

2012

Braaten, M. (September 2012). Turtles all the way down: Persistent problems in theorizing about teacher learning. Paper presented at Science Education at the Crossroads conference, Providence, RI, September 6-8 [Available online at www.sciedxroads.org/proceedings2012.html].

Braaten, M. (April 2012). Tracing the development of inquiry-as-stance in a science teacher video club. Paper presented at the annual meeting of the American Educational Research Association, Vancouver, BC.

Windschitl, M. & **Braaten, M.** (April 2012). How to press for ambitious and equitable pedagogy: Changing teacher practice through the use of discourse tools. Paper presented at the annual meeting of the American Educational Research Association, Vancouver, BC.

Braaten, M. (March 2012). Supporting teachers' learning and practice constructing scientific explanations using Model-Based Inquiry. Paper presented at the annual conference of the National Association for Research in Science Teaching, Indianapolis, IN.

Braaten, M. (Jan. 2012). Beyond optimism: Designing and adapting science teacher video clubs to support teacher learning. Paper presented at the annual meeting of the Association for Science Teacher Education, Clearwater Beach, FL.

2011

Braaten, M. (Sept. 2011). How do I start on the right foot? Pursuing partnerships (and our own agendas). Paper presented at Science Education at the Crossroads conference, San

Antonio, TX, September 25–27 [Available online at www.sciedxroads.org/proceedings2011.html].

Braaten, M. (April 2011). Raising performance expectations for novice teachers: The promise of pedagogical tools and core practices. Paper presented at the annual conference of the National Association for Research in Science Teaching. Orlando, FL.

2010

Braaten, M., & Sjoberg, B. (March 2010). The co-evolution of research and practice. Paper presented at the annual conference of the National Association for Research in Science Teaching, Philadelphia, PA.

Thompson, J., Windschitl, M., & **Braaten, M.** (March 2010). Critical and contextual discourses: Explaining the development of ambitious practices across “learning-to-teach” contexts. Paper presented at the annual conference of the National Association for Research in Science Teaching, Philadelphia, PA.

Braaten, M. (April 2010). Lenses on learning: The complex roles of tools and colleagues in a science teacher video club. Paper presented at the annual meeting of the American Educational Research Association, Denver, CO.

2009

Windschitl, M., Thompson, J., & **Braaten, M.** (Nov. 2009). The beginner’s repertoire: Proposing a core set of instructional practices for teacher preparation. Paper presented at the DRK-12 meeting of the National Science Foundation. Washington, DC.

Braaten, M. (Sept. 2009). Knowledge as practice: Building an epistemic culture of science teaching. Paper presented at Science Education at the Crossroads conference, Portland, OR. [Available online at www.sciedxroads.org/proceedings2009.html].

Braaten, M. & Windschitl, M. (June 2009). Towards a stronger conceptualization of scientific explanation for science education. Paper presented at the bi-annual conference of the International History and Philosophy of Science Teaching Group. South Bend, IN.

Thompson, J., **Braaten, M.,** & Windschitl, M. (June 2009). Learning progressions as vision tools for advancing teachers’ pedagogical performance. Paper presented at Learning Progressions in Science (LeaPS) conference, Iowa City, IA.

Braaten, M., & Windschitl, M. (April 2009). Tensions when teaching science: How a teacher juggles multiple demands of ambitious pedagogy in an urban middle school classroom. Paper presented at the annual conference of the National Association of Research in Science Teaching. Anaheim, CA.

Thompson, J., Windschitl, M., & **Braaten, M.** (April 2009). Explaining the development of ambitious practices across “learning-to-teach” contexts. Paper presented at the annual conference of the National Association of Research in Science Teaching. Anaheim, CA.

Windschitl, M., Thompson, J. & **Braaten, M.** (April 2009). Fostering ambitious pedagogy in novice teachers: The collaborative analyses of pupil work as a bridge between teacher education and early career practice. Paper presented at the annual conference of the National Association of Research in Science Teaching. Anaheim, CA.

2008

Thompson, J., Windschitl, M., & **Braaten, M.** (April 2008). How pedagogical reasoning and practice develops across “learning-to-teach” contexts. Paper presented at annual meeting of the American Educational Research Association, New York, NY.

2007

Windschitl, M., Thompson, J., & **Braaten, M.** (April 2007). How novice science teachers appropriate epistemic disciplinary discourses for use in classrooms. Paper presented at annual meeting of the American Educational Research Association. Chicago, IL.

Grant-funded research

Completed projects**1. Rural Colorado Science Teacher Leadership and Learning Collective**

- CU Boulder Office for Outreach and Engagement (\$9,000)
- Principal Investigator

2. Fueling Culturally Sustaining Ambitious Science Teaching in Denver Public Schools

- CU Boulder School of Education Place-Based Partnership Seed Award (\$31,867)
- Principal Investigator

3. ACT for Climate Toolkit: An Action- and Justice-Oriented Toolkit Supporting K-5 Climate Education

- University of Washington Climate Teacher Ed Collaborative (\$100,000)
- Co-Principal Investigator

4. Bringing Data into Classrooms - Fostering Teachers' Inquiry-Based Instruction

- CU Boulder Outreach Grant
- Co-Principal Investigator (with Anne Gold, Lynne Harden, & Jonathan Griffith CIRES University of Colorado Boulder; Kerri Wingert, University of Colorado Boulder)

5. Becoming Facilitators of Computational Making Activities: Designing and Studying Facilitation Practices in Making and Tinkering Spaces

- NSF DRK12 (Grant: DRL 1908351) \$449,994; 08/01/2019-07/30/2023
- Co-Principal Investigator (with Ricarose Roque, University of Colorado Boulder)

6. Establishing a Makerspace for Youth in Foster Care

- CU Boulder Outreach Community Impact Grant; \$4,050; 09/2020
- Co-Principal Investigator (with doctoral advisee Brandon Grossman, University of Colorado Boulder)

7. Building School-University Partnerships to Support Humanizing, Place-Based, and Community-Based Elementary Teacher Preparation

- School of Education Place-Based Partnership; 05/31/2019-05/31/2020
- Co-Principal Investigator (with Jamy Stillman, University of Colorado Boulder)

8. Partnership to Strengthen Systemwide Science Education

- Office of Outreach and Engagement; 06/30/2019-06/30/2020
- Co-Principal Investigator (with Erin Furtak, University of Colorado Boulder)

9. NSF-NRO Workshop on Diversifying and Deepening Engagement and Learning in STEM

- National Science Foundation (NSF) ITEST (Grant: 1757392) \$99,699; 02/01/2018 - present
- Co-Principal Investigator (with Joe Polman, University of Colorado Boulder)

10. Improving Science Teaching & Learning: Noticing & Responding to Student Sense-Making in Science

- National Science Foundation (NSF) Research and Evaluation on Education in Science and Engineering (REESE) (Grant: RC103139UW) \$499,997; 09/15/2013-present
- Co-Principal Investigator (with Christina Schwarz & Angela Calabrese Barton, Michigan State University)

11. Fostering Pedagogical Argumentation: Pedagogical Reasoning with and About Student Science Ideas

- NSF Discovery Research K-12 (DRK12) (Grant: DRL 1316232) \$447,706; 10/01/2013-present
- Co-Principal Investigator (with Leema Berland & Rosemary Russ, UW-Madison)

12. Multilingual STEM Teaching Collaborative: Learning and Teaching Science and Language Together

- Women Investing in the School of Education (WISE); 11/01/2017-present.
- Co-Principal Investigator (with Deb Palmer and Jamy Stillman, University of Colorado Boulder)

13. Data Use: Evidence for the Middle and High School Science Classroom

- Spencer Foundation; (Grant: 201300102); \$291,951; 08/2012-08/2014.
- Principal Investigator

14. Pedagogical Decision Making: Evidence from the High School Science Classroom

- Graduate School of UW-Madison; \$40,000; 08/2012-08/2013.
- Principal Investigator

15. Tool Systems to Support Progress Towards Expert-Like Teaching by Early Career Science Educators

- National Science Foundation DRK-12 (Grant: DRL-0822016) \$1,886,684; 09/15/2008-08/31/2014
- Research Assistant/Associate (with Mark Windschitl & Jessica Thompson)

16. Puget Sound Science Teacher Network: Lenses on Learning

- National Education Association Foundation; Leadership and Learning FA33227/A40895; \$5000; 08/2008-08/2009.
- Lead Researcher (with teacher teams from Puget Sound regional school districts)

17. Teachers' Learning Trajectories Initiative

- Teachers for a New Era Project sponsored by grants from the Carnegie Corporation, the Annenberg Foundation, and the Rockefeller Foundation; \$100,000; 08/2006-08/2008.
- Lead Research Assistant (with Mark Windschitl & Jessica Thompson)

TEACHING*CU Boulder Courses*

Term	Course Number	Course Title	Course Description
Fall 2025	EDUC 8115	History and Policy in Teaching & Teacher Education	Doctoral seminar in TLRP PhD sequence
Fall 2024	EDUC 4215	Elementary Science Theory & Methods	Year 4 BA learning to teach K-5 science
Fall 2023	EDUC 4215	Elementary Science Theory & Methods	Year 4 BA learning to teach K-5 science
Spring 2023	EDUC 8950	Proposal & Dissertation Writing	PhD seminar on dissertation writing
Fall 2022	EDUC 4215	Elementary Science Theory & Methods	Year 4 BA learning to teach K-5 science
	EDUC 6985	Readings in Curriculum & Instruction Math & Science Education	Specialty Doctoral Seminar for STEM Education
Summer 2022	EDUA 5026	CAPSTONE: K-12 Inquiry-Based Pedagogies	MA in Teacher Leadership: Inquiry-Based Pedagogies Certificate
Spring 2022	EDUA 5015	Envisioning equitable teaching and learning in science	MA in Teacher Leadership: Science Assessment Certificate
	EDUA 5016	Building Three-Dimensional Assessments	MA in Teacher Leadership: Science Assessment Certificate
	EDUA 5017	Leadership for creating equitable assessment systems in science	MA in Teacher Leadership: Science Assessment Certificate
	EDUA 5023	How questions, dilemmas, and problems matter for learning	MA in Teacher Leadership: Inquiry-Based Pedagogies Certificate
	EDUA 5024	Inquiry across disciplines and communities	MA in Teacher Leadership: Inquiry-Based Pedagogies Certificate
	EDUA 5025	Principles and practices for designing inquiry-based learning experiences	MA in Teacher Leadership: Inquiry-Based Pedagogies Certificate
Fall 2021	EDUC 4215	Elementary Science Theory & Methods	Year 4 BA learning to teach K-5 science
	EDUC 8179	STEM Teaching & Teacher Education	Doctoral seminar in STEM Ed. PhD sequence
	EDUC 5800	STEM Teaching & Teacher Education	Master's seminar meets with EDUC 8179

Spring 2021	EDUC 4720	Student Teaching for Cultural & Linguistic Diversity	Sense-making seminar supporting Year 4 BA
	EDUC 8950	Proposal & Dissertation Writing	PhD seminar on dissertation writing
Fall 2020	EDUC 4215	Elementary Science Theory & Methods	Year 4 BA learning to teach K-5 science
	EDUC 4710	Student Teaching for Cultural & Linguistic Diversity	Sense-making seminar supporting Year 4 BA
Spring 2020	EDUC 2015	Elementary Math & Science Teaching for Social Justice	Intro to K-5 math/science teaching for Year 1 BA
Fall 2019	EDUC 5215	Elementary Science Theory & Methods	BA and post-BA learning to teach K-5 science
	EDUC 8115	History and Policy in Teaching & Teacher Education	Doctoral seminar in TLRP PhD sequence
Spring 2019	EDUC 5215	Elementary Science Theory & Methods	BA and post-BA learning to teach K-5 science
Fall 2018	EDUC 5215	Elementary Science Theory & Methods	BA and post-BA learning to teach K-5 science
	EDUC 8950	Proposal & Dissertation Writing	PhD seminar on dissertation writing
Spring 2018	EDUC 5215	Elementary Science Theory & Methods	BA and post-BA learning to teach K-5 science
	EDUC 2020	Inquiry Approaches to Teaching Math & Science	Intro to K-5 math/science teaching for Year 1 BA
Fall 2017	EDUC 5215	Elementary Science Theory & Methods	BA and post-BA learning to teach K-5 science
Spring 2017	EDUC 5215	Elementary Science Theory & Methods	BA and post-BA learning to teach K-5 science
	EDUC 8165 & 8175	Adv. Doctoral Seminar in Math & Science Education	STEM Teaching & Teacher Education
Fall 2016	EDUC 5215	Elementary Science Theory & Methods	BA and post-BA learning to teach K-5 science

Professional Development & Workshops Beyond CU Boulder

- Spring 2026** **Ambitious Science Teaching: Pedagogies Supporting K-12 Students Making and Justifying Explanations for Phenomena**
Dallas-Fort Worth Science Supervisors, Dallas-Fort Worth, TX; Kickoff event for North Texas regional science education leaders
- 2024-25** **Modeling-Based Inquiries in Science Teaching: Moving from Models “Of” Modeling “For”**

Denver Public Schools, Denver, CO; Year-Long Professional Development Series with teachers/district science education leaders

- 2023-24** **Ambitious Science Teaching & Culturally Responsive Pedagogies**
Denver Public Schools, Denver, CO; Year-Long Professional Development Unit with teachers/district science education leaders
- Spring 2023** **Arizona Ambitious Science Teaching Collaborative**
Arizona Science Teaching Association, Phoenix, AZ; Kickoff event for ASTA year-long collaborative focus on making science education meaningful for every student
- 2022-23** **Ambitious Science Teaching: Making Science Meaningful for Every Student**
Helena Public Schools, Helena, MT; Workshop series for teachers/district leaders
- 2022-23** **Ambitious Science Teaching & Culturally Responsive Pedagogies**
Denver Public Schools, Denver, CO; Year-Long Professional Development Unit with teachers/district science education leaders
- Spring 2022** **Making Thinking Visible through Ambitious Science Teaching**
Denver Public Schools, Denver, CO; Workshop for school/district leaders
- Fall 2021** **Taking Science Teaching to the Next Level**
Pikes Peak Regional Science Education Group, Colorado Springs, CO; One-day workshop
- Interstate Science Collaborative – Ambitious Science Teaching Book Study**
Advisor to the state science education leaders coordinating this multistate effort spanning the western U.S.
- Spring 2021** **Supporting Ambitious Science Teaching & Model-Based Inquiry**
National Science Teaching Association, Teacher Tip Tuesday Online Workshops
200 participants nation/worldwide
- Preparing Teacher Education Scholars and Practitioners Through Doctoral Education**
EdPrepLab Learning Café Series
50 participants nationwide
- Ambitious Science Teaching Statewide Teacher Leader Groups:**
- North Dakota
 - South Dakota
 - Maine
 - Utah
 - Colorado
 - Wisconsin
 - Iowa
 - New York
 - Minnesota
 - Missouri
 - Wyoming
 - Washington
- Summer & Fall 2020** **Ambitious Science Teaching Tri-State Science Leader Group**
State & district science leaders Colorado, Iowa, and Utah; 2 days per month
- Ambitious Science Teaching Online Teacher Group**

K-12 teachers nationwide (50-100 participants); 2 days per month

Spring 2020 **Ambitious Science Teaching Elementary Teacher Leadership Team**
Aurora Public Schools, Aurora, CO; 5-7 days per month (until COVID-19 disruption beginning late March 2020)

Fall 2019 **Ambitious Science Teaching Elementary Teacher Leadership Team**
Aurora Public Schools, Aurora, CO; 5-7 days per month

Summer 2019 **Ambitious Science Teaching & Model-Based Inquiry Summer Institute**
Aurora Public Schools, Aurora, CO; 3-day workshop

K-8 Science Education Collaborative Design Teacher Leadership Teams
Aurora Public Schools, Aurora, CO; 2-day workshop

Spring 2019 **Theorizing Teacher Education & Teacher Learning – Preconference Workshop**
Division K: Teaching & Teacher Education, annual meeting of American Educational Research Association, Toronto, Ontario; 1-day workshop

Ambitious Science Teaching Elementary Teacher Leadership Team
Aurora Public Schools, Aurora, CO; 5-7 days per month

Taking Science Teaching to the Next Level – Teacher Twilight Series Workshop
Tomorrow’s Educators Advocating for Math & Science Education, Weber State University, Ogden, Utah; 1-day workshop

Ambitious Science Teaching
Wisconsin Statewide Science Educator Network; 1-day workshop

Fall 2018 **Ambitious Science Teaching Elementary Teacher Leadership Team**
Aurora Public Schools, Aurora, CO; 5-7 days per month

Introduction to the Next Generation Science Standards
Boulder Valley School District, Boulder, CO; 1-day workshop

Summer 2018 **Ambitious Science Teaching & Model-Based Inquiry Summer Institute**
Aurora Public Schools, Aurora, CO; 3-day workshop

Spring 2018 **Ambitious Science Teaching Elementary Teacher Leadership Team**
Aurora Public Schools, Aurora, CO; 5-7 days per month

Fall 2017 **Ambitious Science Teaching Elementary Teacher Leadership Team**
Aurora Public Schools, Aurora, CO; 5-7 days per month

Summer 2017 **Ambitious Science Teaching & Model-Based Inquiry Summer Institute**
Aurora Public Schools, Aurora, CO; 3-day workshop

SERVICE

National/Professional

- Associate Editor: *Journal of Research in Science Teaching* (2025-present)

- Editorial Board Member: *American Educational Research Journal* (2016-2020; 2022-2025)
- Editorial Board Member: *Review of Educational Research* (2023-2026)
- Associate Editor: *Journal of Science Teacher Education* (2018-2024)
- Member of the Board of Trustees: Knowles Teaching Initiative (2022-present)
- External Tenure/Promotion Reviewer (2023-present)
- Section Co-Chair: Division K Section 8 of AERA (2017-2019)
- Organizer & Facilitator: Division K AERA Pre-Conference Seminar (2018-2019)
- Grant Proposal Reviewer: Spencer Foundation; National Science Foundation
- Conference Proposal Reviewer: AERA, NARST, ICLS
- Advisor: Knowles Teaching Initiative (2011-2022)
- Advisor: *Making Science Multilingual*: WIDA/National Science Teaching Association (NSTA)
- Manuscript Reviewer for:
 - *American Educational Research Journal*
 - *AERA Open*
 - *Cognition & Instruction*
 - *Educational Evaluation & Policy Analysis*
 - *Educational Researcher*
 - *Educational Studies*
 - *Journal of Educational Psychology*
 - *Journal of the Learning Sciences*
 - *Journal of Research in Science Teaching*
 - *Journal of Science Teacher Education*
 - *Journal of Teacher Education*
 - *Leadership and Policy in Schools*
 - *Mathematics Teaching and Learning*
 - *Mind, Culture, and Activity*
 - *Review of Educational Research*
 - *Science Education*
 - *Science and Education*
 - *School Science & Mathematics*
 - *Teacher Education Quarterly*
 - *Teaching and Teacher Education*

CU Boulder

- Member: Leeds School of Business Frasca Teaching Excellence Award Selection Committee (2025)
- Participant: Faculty Leadership Institute (Fall 2022-Spring 2023)
- Member: College of Engineering & Applied Sciences Multi-Disciplinary Faculty Search Committee (Fall 2022)
- Participant: Climate Across the Curriculum: Campus-Wide Initiative to Incorporate Climate Change Education and Action Across the Undergraduate Curriculum (Fall 2022)
- Facilitator: Right Here Right Now UN Climate Change and Human Rights Summit (Fall 2022)
- Member: College of Engineering & Applied Sciences + School of Education Collaborative (2021-2022)
- Participant: LEAP Introductory Leadership Workshop (Spring 2021)
- Participant: CU Boulder Ad Hoc COVID-19 Faculty Focus Group (Summer 2020)
- Participant: Academic Leaders Institute: New Leaders (Summer 2020-Spring 2021)

School of Education

- Member: Academic Advising Search Committee (2025)
- Chair: Director of Elementary Education Search Committee (2025)
- Member: EBB Search Committee (2024-2025)
- Program Chair: STEM Education (Fall 2024)
- Member: PUEC for Dr. Ben Shear (2024-2025)
- Faculty Advisor: SOE Doctoral Pathways Program for Prospective PhD Students (2024-2025)
- Year 4 Instructional Team Leader: Elementary Teacher Education Program (2017-present)
- Field Coach Coordinator for Elementary Teacher Education (2022-2024)

- Program Co-Chair: Elementary Teacher Education Program (2022-2023)
- Member: Undergraduate Leadership Council (2022-2023)
- Member: Teacher Education Leadership Team (2022-2023)
- Member: PUEC for Dr. Edd Taylor (2022)
- Member: SOE Space/Building Committee (2018-2021)
- Member: Pathways Doctoral Mentorship program faculty committee (2021-2022)
- Program Chair: Teacher Learning, Research, & Practice (2020-2021)
- Member: SOE Curriculum/Graduate Studies Committee (2018-2020)
- Member: Learning Sciences Human Development Search Committee (2018-2019)
- Member: Teacher Learning, Research, and Practice Ad Hoc Search Committee (2018-2019)
- Member: PUEC for Dr. Caitlin Farrell (2018-2019)
- Reviewer: Student awards/scholarship applications (2017-2020)
- Reviewer: Undergraduate applications to elementary teacher licensure program (2017)