

Jennifer Richards

School of Education and Social Policy
Northwestern University
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ACADEMIC POSITIONS

- 1/19-present *Research Assistant Professor*, Learning Sciences, School of Education and Social Policy, Northwestern University, Evanston, IL
- Appointed as ad hoc member of the Graduate Faculty, 1/20
- 4/18-12/18 *Research Scientist*, College of Education, University of Washington, Seattle, WA
- 7/14-4/18 *Research Associate* in Science Teacher Learning and Development, College of Education, University of Washington, Seattle, WA
- Advisors: Jessica Thompson, Elham Kazemi
- 7/13-7/14 *Research Associate* in Science Education, College of Education, University of Maryland, College Park, MD
- Advisor: Andrew Elby

EDUCATION

- August 2013 *Doctor of Philosophy*, Curriculum and Instruction with a specialization in Science Education, University of Maryland, College Park, MD
- Advisors: Andrew Elby, David Hammer
 - Dissertation: Exploring what stabilizes teachers' attention and responsiveness to the substance of students' scientific thinking in the classroom
- August 2008 *Master of Education*, Curriculum and Instruction with a specialization in Secondary Science Education, University of Maryland, College Park, MD
- Action Research: Using metacognitive prompts to foster students' conceptual understanding during science labs
- May 2006 *Honors Bachelor of Arts* (summa cum laude), Biological Sciences and Political Science/International Relations, University of Delaware, Newark, DE

AWARDS AND HONORS

Northwestern University

Evanston, IL

Finalist, Fletcher Prize for Excellence in Research Mentorship, October 2021

University of Washington

Seattle, WA

Finalist, UW Postdoc Mentoring Award, April 2018

University of Maryland

College Park, MD

Runner Up, College of Education's Outstanding Doctoral Student Award, May 2013

Recipient, Disciplinary Experts in Science Education Research: A University of Maryland Program for Producing STEM Education Researchers, 2008-2013

RESEARCH AND SCHOLARLY ACTIVITIES

+Indicates collaborations with graduate and/or undergraduate students, *indicates collaborations with practitioners, ¹indicates co-first authorship

Journal Articles

Anderson, E., & **Richards, J.** (accept with minor revisions). Practical measures of science teacher learning: Conceptualizing organizational functions and affordances. *Science Education*.

Richards, J. (2023). Exploring resources for responsiveness to student thinking in practice. *Journal of Teacher Education*.

<https://doi.org/10.1177/00224871231157327>

+Larison, S.¹, **Richards, J.**¹, & Sherin, M. G. (2022). Tools for supporting teacher noticing about classroom video in online professional development.

Journal of Mathematics Teacher Education.

<https://doi.org/10.1007/s10857-022-09554-3>

+*Haverly, C., Hossein, B., & **Richards, J.** (2021). Mapping vocabulary onto student sense-making: Strategies that encourage emergent bilingual students to make sense of science. *Science and Children*, 59(2), 22-26.

+Sherin, M. G., **Richards, J.**, & Altshuler, M. (2021). Learning from recording video of your own classroom. *Phi Delta Kappan*, 103(2). Available from:

<https://kappanonline.org/learning-from-recording-video-of-your-own-classroom/>.

+**Richards, J.**, Altshuler, M., Sherin, B. L., Sherin, M. G., & Leatherwood, C. J. (2021). Complexities and opportunities in teachers' generation of videos from their own classrooms. *Learning, Culture, and Social Interaction*, 28(4), 100490.

Richards, J., Elby, A., Luna, M. J., Robertson, A. D., Levin, D. M., & Nyeggen, C. G. (2020). Reframing the responsiveness challenge: A framing-anchored explanatory framework to account for irregularity in novice teachers' attention and responsiveness to student thinking. *Cognition and Instruction*, 38(2), 116-152.

+*Thompson, J.¹, **Richards, J.**¹, Shim, S-Y., Lohwasser, K., Von Esch, K., Chew, C., Sjoberg, B., & Morris, A. (2019). Launching networked PLCs:

- Footholds into creating and improving knowledge of ambitious and equitable teaching practices in an RPP. *AERA Open*, 5(3), 1-23.
- +Fowler, K., Windschitl, M., & **Richards, J.** (2019). Exit tickets: Understanding students, adapting instruction, and addressing equity. *The Science Teacher*, 86(8), 18-26.
- +*Shim, S-Y., Thompson, J., **Richards, J.**, & Vaa, K. (2018). Agree/Disagree T-charts: Supporting young students in scientific argumentation and modeling. *Science and Children*, 56(1), 39-47.
- Robertson, A. D., & **Richards, J.** (2017). Teacher sense-making about being responsive to students' science ideas: A case study. *European Journal of Science and Mathematics Education*, 5(4), 314-342.
- ***Richards, J.**, Johnson, A., & Nyeggen, C. G. (2015). Inquiry-based science and the Next Generation Science Standards: A magnetic attraction. *Science and Children*, 52(6), 54-58.
- Singh, S. P., Foley, J. F., Zhang, H. H., Hurt, D. E., **Richards, J. L.**, Smith, C. S., Liao, F., & Farber, J. M. (2015). Selectivity in the use of G_{i/o} proteins is determined by the DRF motif in CXCR6 and is cell-type specific. *Molecular Pharmacology*, 88(5), 894-910.
- Levin, D. M., & **Richards, J.** (2011). Learning to attend to the substance of student thinking in science: A case study of a preservice secondary science teaching cohort. *Science Educator*, 20(2), 1-11.

Book Chapters

- +Sherin, M. G., **Richards, J.**, & Larison, S. (in press). Professional vision and teacher noticing: Different pieces of the same puzzle? To appear in *New Perspectives on Teacher Professional Vision*.
- +*Pratt, A. D., Pinkard, N., Ferrin, E. H., Perkins-LaFollette, K., Walter, A., **Richards, J.**, & Caplan, H. (in press). Partnership: The key to high-quality, scalable, and sustainable Broader Impacts programs for K-12. To appear in *The Handbook of Broader Impacts*.
- Richards, J.** & Robertson, A. D. (2016). A review of the research on responsive teaching in science and mathematics. In A. D. Robertson, R. Scherr, & D. Hammer (Eds.), *Responsive Teaching in Science and Mathematics*. Teaching and Learning in Science Series (pp. 36-55). Routledge.
- Robertson, A. D., **Richards, J.**, Elby, A., & Walkoe, J. (2016). Documenting variability *within* teacher attention and responsiveness to the substance of student thinking. In A. D. Robertson, R. Scherr, & D. Hammer (Eds.), *Responsive Teaching in Science and Mathematics*. Teaching and Learning in Science Series. Routledge.
- Robertson, A. D., Atkins, L. J., Levin, D. M., & **Richards, J.** (2016). What is responsive teaching? In A. D. Robertson, R. Scherr, & D. Hammer (Eds.), *Responsive Teaching in Science and Mathematics*. Teaching and Learning in Science Series. Routledge.

Refereed Conference Proceedings

- Richards, J.** (2022). Exploring focused responsiveness as an approach to facilitation in professional learning. In C. Chinn, E. Tan, C. Chan, & Y. Kali (Eds.), *Proceedings of the 16th International Conference of the Learning Sciences – ICLS 2022* (pp. 985-988). International Society of the Learning Sciences.
- +**Richards, J.**, Sherin, B. L., & Altshuler, M. (2021). Teachers' aesthetic judgments of classroom events. In E. de Vries, Y. Hod, & J. Ahn (Eds.), *Proceedings of the 15th International Conference of the Learning Sciences – ICLS 2021* (pp. 43-50). International Society of the Learning Sciences.
- Anderson, E., & **Richards, J.** (2021). Toward a conceptual framework for practical measurement as organizational structure. In E. de Vries, Y. Hod, & J. Ahn (Eds.), *Proceedings of the 15th International Conference of the Learning Sciences – ICLS 2021* (pp. 533-536). International Society of the Learning Sciences.
- +**Richards, J.**, Altshuler, M., Sherin, B., & Sherin, M. (2020). Orchestrating for seeing: How teachers see and help others see student thinking when self-capturing classroom video. In M. Gresalfi & I. S. Horn (Eds.), *The Interdisciplinarity of the Learning Sciences, 14th International Conference of the Learning Sciences (ICLS) 2020, Volume 4* (pp. 1942-1949). International Society of the Learning Sciences.
- +Larison, S., Munson, J., & **Richards, J.** (2020). So what? Now what? Two tools for supporting teachers' thought experiments. In M. Gresalfi & I. S. Horn (Eds.), *The Interdisciplinarity of the Learning Sciences, 14th International Conference of the Learning Sciences (ICLS) 2020, Volume 4* (pp. 2387-2388). International Society of the Learning Sciences.
- Elby, A., Luna, M., Robertson, A., Levin, D., & **Richards, J.** (2020). Framing analysis lite: A tool for teacher educators. In M. Gresalfi & I. S. Horn (Eds.), *The Interdisciplinarity of the Learning Sciences, 14th International Conference of the Learning Sciences (ICLS) 2020, Volume 4* (pp. 2085-2092). International Society of the Learning Sciences.
- +Larison, S., **Richards, J.**, & Sherin, M. G. (2019). Analyzing designs for teacher online discourse around videos of primary students' mathematical thinking. In S. Otten, A. G. Candela, Z. de Araujo, C. Haines, & C. Munter (Eds.), *Proceedings of the forty-first annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 617-618). University of Missouri.
- Richards, J.**, & Thompson, J. (2018). "Choose your own adventure": Responsive curricular choices in elementary science. In J. Kay & R. Luckin (Eds.), *Rethinking Learning in the Digital Age: Making the Learning Sciences Count, 13th International Conference of the Learning Sciences (ICLS) 2018, Volume 2* (pp. 1017-1020). International Society of the Learning Sciences.

- Richards, J., Elby, A., & Gupta, A.** (2014). Characterizing a new dimension of change in attending and responding to the substance of student thinking. In J. L. Polman, E. A. Kyza, D. K. O'Neill, I. Tabak, W. R. Penuel, A. S. Jurow, K. O'Connor, T. Lee, & L. D'Amico (Eds.), *Learning and becoming in practice: The International Conference of the Learning Sciences (ICLS) 2014, Volume 1* (pp. 286-293). International Society of the Learning Sciences.
- Richards, J.** (2014). The role of affect in sustaining teachers' attention and responsiveness to student thinking. In P. V. Engelhardt, A. D. Churukian, & D. L. Jones (Eds.), *2013 Physics Education Research Conference Proceedings* (pp. 301-304).
- Richards, J., Conlin, L., Gupta, A., & Elby, A.** (2013). Coupling epistemology and identity in explaining student interest in science. In S. Rebello, P. Engelhardt, & A. D. Churukian (Eds.), *2012 Physics Education Research Conference* (AIP Conf. Proc. 1513, pp. 334-337). American Institute of Physics.

Other Publications

- Co-author of the Baxter Center for Science Education (2021). *A case study for promising practices in corporate-school-university partnerships*. Retrieved from https://bcse.northwestern.edu/case_study.
- Contributor and reviewer for Community for Advancing Discovery Research in Education (2017). *Emerging design principles for online and blended teacher professional development in K-12 STEM education*. Education Development Center, Inc. Retrieved from <http://cadrek12.org/resources/emerging-design-principles-online-and-blended-teacher-professional-development-k-12-stem>.
- +*Vaa, K., Shim, S., **Richards, J.**, & Thompson, J. (2017, May 5). *Integrating scientific argumentation and modeling for K-2 learners* [Web log post]. Retrieved from <https://www.teachingchannel.com/k12-hub/blog/scientific-argumentation/>.
- Thompson, J., & **Richards, J.** (2016). *Modeling in science: K-2* [Web log post]. Retrieved from <https://www.teachingchannel.com/k12-hub/blog/modeling-in-science-k-2/>.
- Elby, A., Gupta, A., Conlin, L., & **Richards, J.** (2013). *Inquiry-based professional development for a diverse population*. American Physical Society Forum on Education Newsletter. <https://engage.aps.org/fed/resources/newsletters/newsletter-archive/summer-2013>.

Invited Presentations and Workshops

- Sherin, M. G., & **Richards, J.** (2023). *The burgeoning area: Teacher noticing for teacher professional development* [Invited webinar]. University of Cape

- Coast, Ghana International Webinar Series on Professional Noticing of Mathematics Teachers.
- Richards, J.** (2020). *Exploring integrative, dynamic approaches to understanding teacher practice and learning* [Invited presentation]. Learning Sciences Research Institute Speaker Series, University of Illinois at Chicago, Chicago, IL.
- Richards, J.** (2017). *Designing for meaningful collaboration online in a blended PD model* [Invited presentation]. Tch TeamsFest, Lowell, MA.
- Richards, J.** (2016). *Exploring job-embedded professional learning through Studio Days* [Plenary talk]. Foundations and Frontiers of Physics Education Research: Puget Sound Conference, Diablo, WA.
- Richards, J.** (2015). *Learning from and with teachers about supporting and improving ambitious science instruction* [Invited presentation]. University of Washington and Seattle Pacific University Physics Education Seminar, Seattle, WA.
- *Thompson, J., **Richards, J.**, & Sjoberg, B. (2015). *Measurement for improvement in networked communities* [Invited presentation]. Design-Based Implementation Research (DBIR) Workshop, Boulder, CO.
- Elby, A., Gupta, A., & **Richards, J.** (2014). *Assessing whether and how professional development affects teachers' classroom practices* [Invited presentation]. American Association of Physics Teachers Winter Meeting, Orlando, FL.
- Richards, J.** (2014). *Preparing and supporting LAs: LA pedagogy seminar* [Invited workshop]. Mid-Atlantic Learning Assistant Workshop, College Park, MD.
- Richards, J.**, & Conlin, L. D. (2013). *When feist and frustration spark substantive engagement* [Invited presentation]. American Association of Physics Teachers Summer Meeting, Portland, OR.

Select Contributed Conference Presentations and Workshops

- Wertheim, J., Richards, J., & Tekkumru-Kisa, M. (2024). *Asset-based 3D assessment using Ambitious Science Teaching (AST) to drive equitable teaching and learning* [Workshop]. National Science Teaching Association National Conference, Denver, CO.
- Richards, J. [Chair] (2024). *Conceptualizing and supporting the complexities of science teacher noticing* [Related paper set]. NARST Annual International Conference, Denver, CO.
- +**Richards, J.**, Sherin, M. G., & Larison, S. (2023). Professional vision and teacher noticing: Different pieces of the same puzzle? In R. Stahnke (Chair), *New theoretical and methodological perspectives on teacher professional vision* [Symposium]. EARLI Biennial Conference, Thessaloniki, Greece.

- Richards, J.** [Chair] (2023). *Unpacking “relevance” as a design aim for instructional materials: In what ways? For whom?* [Related paper set]. NARST Annual International Conference, Chicago, IL.
- Richards, J.,** & Tekkumru-Kisa, M. (2023). Exploring resources that support teacher leaders’ asset-based, responsive facilitation of professional learning. In H. Talafian (Chair), *Responsiveness in teacher education: Insights and directions for facilitation* [Related paper set]. American Education Research Association, Chicago, IL.
- Tekkumru-Kisa, M., & **Richards, J.** (2023). *Multidimensional noticing for science teaching and learning* [Roundtable presentation]. American Education Research Association, Chicago, IL.
- +**Richards, J.,** Masse, O. D., Cherbow, K., & Tekkumru-Kisa, M. (2022). *Experienced teachers’ thinking about NGSS classroom assessment: Resources, coherences with instruction, and shifts through co-design* [Paper presentation]. NARST Annual International Conference, Vancouver, BC.
- +Jaber, L. Z., Miller, E., Dozier, S., Berland, L. G., Bradford, A., & **Richards, J.** (2022). *Engaging cultural and socio-political perspectives in responsive science teaching* [Roundtable presentation]. American Educational Research Association, San Diego, CA.
- +Wertheim, J., Tekkumru-Kisa, M., Akcil Okan, O., & **Richards, J.** (2022). *A responsive co-design process for 3-dimensional performance assessments* [Paper presentation]. American Educational Research Association, San Diego, CA.
- +Larison, S., **Richards, J.,** & Sherin, M. G. (2021). *Supporting teacher noticing of student mathematical thinking through the use of online tools* [Poster presentation]. American Educational Research Association Virtual Annual Meeting.
- +Sherin, M., Dobie, T., **Richards, J.,** Sherin, B., Altshuler, M., Leatherwood, C., Larison, S., Fishman, J., Ricard, J. R., & Morton, K. (2019). *Studying online professional development with teacher self-captured video* [Poster presentation]. American Educational Research Association Annual Meeting, Toronto, ON.
- +**Richards, J.,** Thompson, J., Shim, S., Lohwasser, K., & Chew, C. (2018). *Networked PLCs: Footholds into creating and improving knowledge of ambitious and equitable teaching practices in a RPP* [Paper presentation]. American Educational Research Association Annual Meeting, New York, NY.
- +Shim, S., Fowler, K., Thompson, J., **Richards, J.,** & Zaccagnino, C. (2018). *K-2 teachers’ noticing and reasoning about young students’ engagement in model-based inquiry* [Paper presentation]. NARST Annual International Conference, Atlanta, GA.
- Richards, J.** [Chair] (2017). *Exploring varied approaches to supporting responsive teaching in science and mathematics* [Structured poster

- session]. American Educational Research Association Annual Meeting, San Antonio, TX.
- +**Richards, J.**, Fox, A., Shim, S., Anderson, E., Dobie, T., Sherin, B., Lee, J., Thompson, J. J., Kazemi, E., Lomax, K., & Sherin, M. G. (2017). *Designing for K-2 teacher learning about modeling in practice-based online courses* [Paper presentation]. American Educational Research Association Annual Meeting, San Antonio, TX.
- Richards, J.** & Thompson, J. (2016). *Real-time responsiveness: Exploring how teams of teachers reason with students' ideas in situ* [Paper presentation]. American Educational Research Association Annual Meeting, Washington, D.C.
- +Thompson, J., Von Esch, K. S., **Richards, J.**, Van Windekens, A., Lohwasser, K., & Varghese, M. (2016). *Opening spaces for inquiry and noticing language: Negotiating tools and EL/science teaching practices* [Paper presentation]. American Educational Research Association Annual Meeting, Washington, D.C.
- *Thompson, J., Sjoberg, B., Lohwasser, K., & **Richards, J.** (2015). *Building capacity for science standards through Networked Improvement Communities* [Presentation]. Carnegie Foundation Summit on Improvement in Education, San Francisco, CA.
- Robertson, A. D., & **Richards, J.** (2015). *Novice teacher sense-making about responsive teaching: Important points in the development of language and practice* [Poster presentation]. Physics Teacher Education Coalition Conference, Seattle, WA.
- Richards, J.**, Gupta, A., & Elby, A. (2014). *Shifting to authentic scientific inquiry: Unpacking three stories of teacher change* [Paper presentation]. NARST Annual International Conference, Pittsburgh, PA.
- Jaber, L., Sawtelle, V., **Richards, J.**, Conlin, L., Gupta, A., Turpen, C., & Nissen, J. (2013). *Fleeting but powerful: How affect matters for teaching, learning, and doing physics* [Workshop]. Physics Education Research Conference, Portland, OR.
- Richards, J.** (2013). *Exploring what sustains teachers' attention and responsiveness to students' scientific thinking in the classroom* [Poster presentation]. NARST Annual International Conference, Rio Grande, Puerto Rico.
- Richards, J.**, Tseng, N., Hammer, D., & Elby, A. (2012). *The role of caring in supporting teachers' attention and responsiveness to the substance of students' scientific thinking* [Poster presentation]. Jean Piaget Society Annual Meeting, Toronto, ON.
- Richards, J.**, Levin, D. M., & Hammer, D. (2011). *Supporting preservice teachers' reform-based practices: The importance of intellectual and emotional support in a community* [Paper presentation]. American Educational Research Association Annual Meeting, New Orleans, LA.

- Jaber, L., **Richards, J.**, Conlin, L. D., & Hammer, D. (2011). *Promoting generative inquiry in science: The importance of attention and responsiveness to multiple aspects of classroom activity* [Paper presentation]. NARST Annual International Conference, Orlando, FL.
- Gillespie, C., Levin, D. M., & **Richards, J.** (2010). *Alex's honors physics class: A shift from a "science" to an "engineering" epistemological frame* [Poster presentation]. American Educational Research Association Annual Meeting, Denver, CO.
- Hammer, D., Levin, D. M., Pritchett, S., & **Richards, J.** (2010). *Using case studies of student science learning to develop practices of attending to student thinking* [Workshop]. Association for Science Teacher Education International Conference, Sacramento, CA.
- Levin, D. M., Gillespie, C., & **Richards, J.** (2009). *Understanding how and when novice teachers attend to student thinking* [Poster presentation]. American Educational Research Association Annual Meeting, San Diego, CA.

Grants Awarded

Northwestern University

Evanston, IL

- May 2022 *SY2022-25 Bench to Classroom: Bringing Biotechnology to K-12 Students*. Baxter International Foundation, **\$2,299,350** over 3 years. PI: E. Ferrin. As Faculty Partner for the Baxter Center for Science Education, I contributed to proposal conceptualization and writing.
- June 2020 *Facilitating Teacher Learning with Video Clips of Instruction in Science*. NSF DRL 2000833, **\$700,000** over 3 years. PI: M. Tekkumru-Kisa; Co-PIs: M. G. Sherin, J. Osborne, **J. Richards**, J. E. Richey.
- April 2019 *Co-Developing Educative, Practical Measures of Teacher Learning for CPS PD*. Steans Family Foundation 18-2206 and Chicago Public Education Fund, **\$38,700** over 1 year. PI: **J. Richards**. Part of the Rapid Impact Grant Program between Northwestern University and Chicago Public Schools, Program PI: D. Figlio.

Other Research and Development Experience

Northwestern University

Evanston, IL

Deeper Learning Labs: Digital Resources for Collaborative Teacher Learning (Spencer Foundation Grant #201600137), 2019-2021
 PI: M. Sherin; Co-PI: B. Sherin

- Contributed to data collection, analysis, and development of manuscripts, including manuscripts on how teachers captured and selected classroom

video to share and the affordances of different designs for online teacher noticing of student thinking evident in video

- Collaborated with and mentored doctoral, masters, and undergraduate students working on the project

University of Washington

Seattle, WA

Effective Novice Teachers: A Study of How Systems of Support Can Transform the Clinical Experience During Teacher Preparation (NSF DUE 1758264), 2018
PI: K. Lohwasser; Co-PIs: M. Windschitl, J. Doherty

- Developed and studied the impact of just-in-time resources (e.g., newsletters; guides, tools, and videos on mentoring practices; see <http://mentorteachers.org>) for mentor-teacher candidate pairs on teacher candidates' opportunities to learn in their field placements
- Conducted and coordinated project research, including protocol development, data collection and management, and intermediary analyses
- Collaborated with and mentored doctoral students working on the project

Learning Labs: Using Videos, Exemplary STEM Instruction and Online Teacher Collaboration to Enhance K-2 Mathematics and Science Practice and Classroom Discourse (NSF DRL 1417757), 2015-2018

PI: P. Teske; Co-PIs: B. Sherin, E. Kazemi, M. Sherin, J. Thompson

- Designed, facilitated, and studied blended professional Learning Labs for in-service K-2 teachers, focused on engaging primary students in the scientific practices of modeling and argumentation grounded in students' evolving ideas and experiences
- Co-led cross-institutional collaboration with developers at the Teaching Channel and researchers at Northwestern University
- Developed accompanying facilitation materials and partnered with Seattle Public Schools in an adapted model serving approximately 330 K-5 teachers

Building Capacity for Science Standards through Networked Improvement Communities (NSF DRL 1315995), 2014-2017

PI: J. Thompson; Co-PI: M. Windschitl

- Partnered with district and EL collaborators to facilitate job-embedded studio days with middle and high school science teams and network-wide convenings across schools, oriented toward improving ambitious and equitable science teaching practices
- Contributed to the project's research agenda, focusing on how teams collectively discussed and improved instructional practice, how knowledge developed and traveled within the NIC, and how tools mediated teams' reasoning with students' ideas
- Created practical measures and data systems to facilitate teams' analyses of student learning and participation; co-authored an awarded \$116K

supplement to develop mobile application to enhance NIC's ability to work with student data over time

University of Maryland

College Park, MD

Minority Student Pipeline MSP (NSF DUE 0831970), 2010-2014

PI: A. Campbell; Co-PIs: A. Elby, N. Shapiro, G. Whitehead, C. Barrow

- Planned and facilitated intensive two-week summer workshops and small-group meetings for 4th-8th grade public school teachers aimed at enhancing inquiry science teaching in the classroom
- Provided job-embedded support in participating teachers' classrooms, co-teaching and debriefing lessons
- Conducted case studies of classroom discourse, teachers' responsiveness to student thinking, and historically marginalized students' engagement in sense-making
- Served as project manager 2011-2014

What Influences Teachers' Modifications of Curriculum? (NSF DRL 0455711), 2008-2010

PI: D. Hammer; Co-PIs: A. Elby, J. Coffey, A. Berkowitz

- Worked on extension of original project, tracing how novice science teachers came to attend to student thinking and following their practices as they transitioned into their first full-time teaching positions

TEACHING, ADVISING, AND PROGRAMMATIC ACTIVITIES

University Teaching

Northwestern University

Evanston, IL

Instructor, LS451 (Topics in Learning Sciences: Personal Explorations in Educational Philosophy), Winter & Spring 2021: Faculty sponsor for seminar proposed and led by learning sciences graduate students, focused on exploring diverse educational philosophies and articulating their own current commitments

Antioch University Seattle

Seattle, WA

Teaching Assistant, EDUC5520 (Instructional Methods: Science I), Spring 2018: Science pedagogy course for K-8 teacher candidates in masters certification program

University of Washington

Seattle, WA

Teaching Assistant, EDTEP523A (Ambitious and Equitable Elementary Science Teaching & Learning), Winter 2015: Science pedagogy course for elementary teacher candidates in masters certification program

Teaching Assistant, EDTEP587A (Teaching Science in the Secondary School II), Fall 2014: Science pedagogy course for secondary science teacher candidates in masters certification program

University of Maryland

College Park, MD

Teaching Assistant, EDCI606 (Learning and Teaching in the Biological Sciences I), Spring 2014: Biology course for practicing teachers pursuing a masters in STEM education

Instructor, EDCI470 (Learning and Teaching in Science), Fall 2013: Science pedagogy course for secondary science teacher candidates in undergraduate program

Instructor, EDCI488D (Mathematics and Science Education: Theory and Practice for Learning Assistants), Fall 2012: Seminar course for undergraduate science majors serving as Learning Assistants, introducing educational theory and practice

Teaching Assistant, EDCI488D (Mathematics and Science Education: Theory and Practice for Learning Assistants), 2011-2012

Teaching Assistant, EDCI676 (Reflection and Practice in Secondary School Science Teaching), Spring 2010: Science pedagogy course for secondary science teacher candidates in masters certification program

Teaching Assistant, EDCI675 (Learning and Teaching in Science), Fall 2009: Science pedagogy course for secondary science teacher candidates in masters certification program

University of Delaware

Newark, DE

Teaching Assistant, COMM/POSC444 (Global Agenda), Spring 2005

Teaching Assistant, COMM/POSC/ENGL467 (Road to the Presidency), Fall 2004

Peer-Led Team Leader, CHEM101/102/103/104 (General Chemistry), 2003-2005: Facilitated peers' learning in problem-based recitation sections

K-12 Teaching

Held Maryland Educator Certificate for Biology and Chemistry 7-12, 2009-2019

Visiting Co-Teacher (in conjunction with work in partnerships), K-12 Science in Highline Public Schools (Burien, WA), 2014-2016, and 4th-8th Grade Science in Prince George's County Public Schools (Upper Marlboro, MD), 2010-2013; average frequency of 1 visit every 1-2 weeks during these timeframes

Co-Teacher, Biology, Chemistry, and Environmental Science at Atholton High School (Columbia, MD), 2007-2009: Full-time intern 2007-2008, part-time co-teacher 2008-2009

Long-Term Substitute Teacher, 7th Grade Science at Mount View Middle School (Marriottsville, MD), January-June 2007

Advising

- 2022-present Doctoral committee member, Sarah Larison, Doctoral Student in Learning Sciences, Northwestern University, Evanston, IL.
- 2017-2022 Outside doctoral committee member, Ashley N. Murphy, Doctoral Student in Curriculum & Instruction, West Virginia University, Morgantown, WV: “Investigating children’s thinking as it travels from everyday experience to formal science learning and teacher practice”
- Winter 2022 Faculty mentor for a Conference Travel Grant Awardee, Office of Undergraduate Research, Northwestern University, Evanston, IL: Support for student to co-present at the 2022 NARST Annual International Conference, Vancouver, BC.
- Summer 2021 Faculty mentor for a Summer Undergraduate Research Assistant Program (URAP) Student, Northwestern University, Evanston, IL: “Investigating science teachers’ understandings of NGSS-aligned classroom assessment.” This student was selected as a finalist for the Fletcher Prize for Rising Undergraduate Research Star in October 2021.
- Summer 2019 Faculty sponsor for a Summer Undergraduate Research Grant, Northwestern University, Evanston, IL: “Exploring how teachers videoing their lessons affects classroom culture and teachers’ perceptions”
- 2013-2014 Faculty advisor for Foundations in Science & Health Tutoring/Mentoring Program, University of Maryland, College Park, MD: Group of undergraduate biology students aiming to improve science performance at local high schools through tutoring and mentoring activities
- Supported program founder in becoming a 2014 Truman Scholar and a 2015 Rhodes Scholar

Programmatic Activities

University of Washington

Seattle, WA

Program Mentor for the University of Washington Leonore Annenberg Teaching Fellowship Program, 2014-2015

PI: M. Windschitl

- Provided ongoing support for fellowship recipients in first few years of teaching

University of Maryland

College Park, MD

Program Coordinator for the University of Maryland Noyce Scholars Program (NSF DUE 1136277 and 1239999), 2013-2014

PIs: L. Clark, A. Elby; Co-PIs: B. Hunt, E. Redish, D. Levin

- Coordinated recruitment, selection, participant activities and placements, and evaluation for all program components, including 1) scholarships for undergraduate mathematics and science education majors and 2) internships and tutoring experiences for freshmen and sophomores
- Facilitated monthly seminar for tutors focused on tutors' interactions with student thinking and problems of practice

SERVICE

Department/School-Level Service

- 2022-2023 Faculty co-organizer of the Learning Sciences Brown Bag Series, Northwestern University, Evanston, IL
- May 2023 Guest discussant for 8 MS in Higher Education Research Project Final Presentations, Northwestern University, Evanston, IL
- Spring 2018 Landscape analysis subcommittee, part of Unite:Ed Alliance initiative to forward College of Education community-research-practice partnerships, University of Washington, Seattle, WA

National-Level Service

- 2025-2027 Division K Secretary, American Educational Research Association
- Summer 2018 Co-organizer of the Physics Education Research Conference, "Having Wonderful Ideas: Connecting the Content, Outcomes, and Pedagogies of Physics," Washington, DC

Professional Memberships

Member of the American Educational Research Association, International Society of the Learning Sciences, and NARST

Reviewing

AERA Open, American Educational Research Association Annual Meeting (Divisions C, K, and SIG Learning Sciences), *Cognition and Instruction*, International Society of the Learning Sciences Annual Meeting (Senior Reviewer), *Journal of the Learning Sciences*, *Journal of Research in Science Teaching*, *Science Education*, *Teaching and Teacher Education*

Workshops and Other Practitioner Collaboration

- May 2023 Co-designed and supported 1-day retreat by request for all K-12 Science Specialists in Chicago Public Schools
- February 2021 Supported high school science teachers in writing and publishing a blog post on the Ambitious Science Teaching website, A/B Talk During Remote Learning: Making Use of

- Flipgrid. Retrieved from <https://ambitioussciencelearning.org/a-b-talk-during-remote-learning-making-use-of-flipgrid/>.
- April 2020 Synthesized research-based principles for K-12 remote learning at beginning of COVID-19 pandemic, creating a short video and 1-pager. Retrieved from <https://www.youtube.com/watch?v=AZmttKbktyk&t=107s>.
- Winter 2019 Designed and facilitated 2-day workshop by request for all K-12 Science Specialists in Chicago Public Schools, focused on principles of effective professional learning for science teachers